

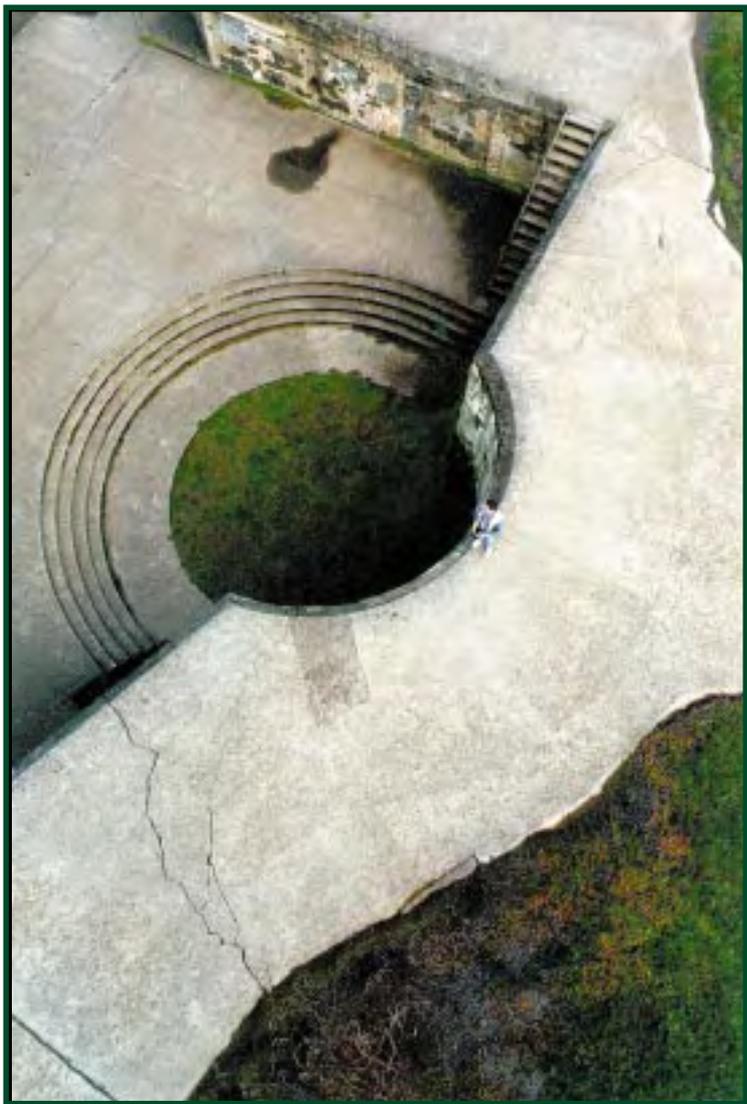


the aerial eye

a quarterly publication of the aerial photography committee
of the American Kitefliers Association
volume 5 / number 2 / summer 1999

US\$5.00
USA & CANADA

US\$6.50
overseas



*Battery Mendell,
Marin Headlands
by
Cris Benton*

THE EYE CLOSSES

closing the eye

by **BROOKS LEFFLER**

This is the last issue of **the aerial eye**. Eighteen issues after the first **æ** came off my home printer in 1994, it's over.

The bottom line is that all of us—committee, editors, and contributors alike—seem to have run out of steam.

Without stories and pictures to publish, and nobody willing to devote time enough to do the bulk of it single-handed, **æ** has apparently outlived its usefulness, and it's time to remove the tubes and wires and let the patient die with dignity.

The *coup de grace* came last week in a certified letter from George Sandy, owner of aerial eye, inc. (yes, even in lower case), a 20-year-old plane-based photography service in Irvine, California, demanding that we cease and desist using his company's name. While he doesn't have a registered trademark or copyright, he had first dibs, and we'll respect that.

WHO DID WHAT TO WHOM

the aerial eye opened in September of 1994, to attempt to fill the void created by the demise of KAPWA News. The Kite Aerial Photography Worldwide Association was

founded by Belgian Michel Dusariez and others. For eight years, KAPWA News drew the KAPers of the world together and gave them a forum in which to share ideas. Printed in French and English and running to 70 pages, it was a commendable effort.

STEVE EISENHAUER took the first direct action when KAPWA died. He wrote to the AKA board asking that they create a Kite Aerial Photography committee for the purpose of publishing a newsletter; he offered to serve as chairman.

I was executive director of AKA at the time, soon to retire, and as a neophyte KAPWA subscriber, I was thinking along the same lines, so Steve and I corresponded and we recruited a committee.

Finding other KAPers was complicated by the reluctance of Michel to release the KAPWA mailing list, but Steve and I both knew about CRAIG WILSON, who had been awarded *Le prix KAPWA d'Encouragement* in 1992. Didn't take much to convince Craig to join the committee.

ANNE ROCK was another KAPWA subscriber whom I knew through AKA. Anne

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AIR REALIZE-ation

by CRAIG WILSON

In the face of so many other kite related publications and clubs struggling and seemingly going by the wayside, I had hoped that we could keep this journal alive.

Not simply for the sake of the worldwide KAP community that we have brought together, but also for the worldwide kiting community that we are all a part of. But it is clear that the energy needed, for both production and submissions, has dwindled to a point where the continuation of the **æ** as a quarterly journal is out of the question.

So it is with deep regret that I agree with the committee suggestion to pull together one final issue to officially close the book on this great and proud chapter in the history of kite aerial photography.

There will come a time (if it hasn't already come) when the name Brooks Leffler will be included with the names Eddy, Batut, Wenz, Lawrence, and Dusariez in conversations and documentations of the great contributors and outstanding practitioners of this art. Thank you, Brooks, for your enduring efforts that have brought this great group together.

My involvement in the **æ**, and the friendships fostered within the KAP community have greatly enriched my life.

This final installment has some great material to present and it would appear to be a healthy thriving journal. But often in kite flying we are lured and fooled by the wind.

After an hour of trying to keep a kite up in variable and light winds I have often given up and rolled up the kite, realizing and accepting that there is not sufficient wind for KAP. As I am putting the kite back in its bag, invariably I think I feel a freshening breeze, and I am often tempted to give it one more try and get the kite back out.

But I have come to learn, through my years of kite flying, that that little breeze after one has given up trying to play with the wind, is just the wind playing with you. For the minute you get that kite back out of the bag and tie on the line, the wind will surely scuttle off and hide.

It has truly been a pleasure to be part of this. Stay safe, have fun, enjoy life, and never quit playing with your toys.

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about the cover

Battery Mendell, Marin Headlands
by Charles C. Benton

From 1905 to 1943, Battery Mendell's two circular pits held guns designed to destroy enemy ships attempting passage through the Golden Gate into San Francisco Bay. The guns were never fired in anger, and today, the battery is returning to the earth.

One almost always finds a breeze here, but on the day of this image the winds were low, grey skies threatened rain, and my camera cradle required field repair. In the end though I shot a couple of rolls with pleasing results.

I am always taken with the richness of aerial images taken under a brooding sky.

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robben island adventure

by CRAIG WILSON

Robben Island is a flat, sandy square mile or so, stuck five miles off the coast of Cape Town, South Africa. The sea is cold and rough here as the waters of the Indian and the Atlantic Oceans combine with prevailing winds and currents originating in Antarctica. The view from the island of the Cape and Table Mountain is spectacular, but that distance of five miles might as well be 500 if you're without a good boat.

This inaccessibility is why Robben Island has such a harsh history as a place of banishment. Criminals, the mentally ill, lepers, and political leaders imprisoned here over the centuries endured much hardship and suffering.

This is where Nelson Mandela was imprisoned from 1964-1982. Today the island and prison is a historic landmark and museum and is viewed with almost sacred status as a place symbolizing the triumph of the human spirit.

In December 1997 my wife Betsy and I were invited to a kite festival in Cape Town. Part of our job was to spend the week before the festival photographing the local sites to create a photo exhibition. That exhibition would be on display during the

event and then the photographs would be sold at auction to help raise money for the festival beneficiary, Cape Mental Health.

The week turned into a great KAP adventure, flying and photographing near several national and historic monuments—from the top of Table Mountain, at beaches, at the University, a vineyard, the harbor and waterfront, and at the week's climax, on Robben Island.

RED TAPE & WAITING

Our journey by ferry to Robben Island began with some red tape and delays. Paying customers had to board first and then, if there was room, the KAP team of Betsy, myself, and our guide and festival organizer, Rodger Duffett, would be allowed to board.

Being that all our efforts were ultimately to benefit Cape Mental Health, we worked every angle to get free or discounted fares to the sites on our list. We were finally allowed to board just before the boat was untied, and then we hung on as the speedy craft charged through the waves for 15 minutes to the dock at Robben Island.

At the entrance we had to wait 30 minutes in the sun before having an audience with the manager. After another 30 minutes of explaining what our intentions were, and that this had already been discussed and approved by her supervisor some days earlier, we were finally told that yes, we would be allowed to fly a kite and photograph the area. However, we absolutely must be off the island on the 1:30 ferry—in one hour and 15 minutes.



My mind had already been scanning the area for set up and target locations. I had noticed that the athletic fields, where prisoners would have played soccer years ago, were plenty large enough for set up but they were still surrounded by two razor wire fences 10 feet tall. But at this point, the thing that bothered me most was the complete and utter lack of wind.



Robben Island Prison: Nelson Mandela's home from 1964 - 82

Based on the five previous days of flying, I had expecting to be working in very strong winds. Instead, the flag in front of the compound was absolutely still. It was hot, and I was sure that the thermals coming off the soccer field surface were going to be ugly.

THERMALS & RAZOR WIRE

As soon as I heard the manager say OK, I was off at nearly a run for the middle of the field to give my 18-foot delta a go. I was hopeful that a long line launch might take the kite up into some higher altitude winds not present on the ground. In the back of my mind though I kept thinking about having 300 feet of line out, a sinking kite, and the razor wire.

A half hour later, I had my delta up 600 feet straight over my head riding thermals and just barely able to lift itself.

Sometimes it just isn't your day and nothing you do, no equipment you have, is going to make it work. But I really, really wanted to come away from this place with some photos. I felt that I may have been

the only person who had ever flown a kite at this place. We had argued and pleaded to be allowed to do this, and it was such a strange and symbolic place to be flying a kite, I wanted to make it work. But lifting a camera with just some intermittent thermal energy was courting disaster.

I began to think about all the men that had been confined there. All the spirits that had been broken there. All the freedoms and lives that had been lost there. My kite flying above was in complete contrast to that which had been routine for centuries.

I said a prayer. I asked those men, I asked their spirits to grant me some wind, so that I might help speak to the world through my photography about this place where they spent their lives. I made a promise that this would not be a selfish endeavor for me—a promise that it was for them, as a tribute to their lives, that I wanted to create some art. Art that would ultimately raise money for Cape Mental Health, which serves many poor blacks in the Townships near Cape Town.

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As I concluded my thoughts to those men my delta was circling behind me. I rushed to let out line to try to get back in front of my kite. I had to let out all the rest of my 1000 feet of line and walk to the other side of the prison before I had the kite back on the downwind side of me.

At this point I am thinking that there is no way I am lifting a camera and I am wondering seriously about getting the kite back in the bag without encountering the fence. I started hauling in line.

After recovering about 300 feet it began to get harder to pull in. Because I had given up all hope of lifting a camera it took a few seconds before I realized that it was not just another thermal, this was real wind I was feeling. The flag was moving too! I looked at my watch. I had 35 minutes.

"Betsy!!!! Give me the camera. I am going for it. Where is my anchor? Man, this thing is pulling like a truck!"

GO, GO, GO!

Camera up. At almost a run I am moving, shooting, working the angles. Click-whirr... Click-whirr... Change film... back up, 25 minutes left. Click-whirr... keep moving, away from the prison now. What's down this road?

"Betsy, grab the box, let's go!"

How much time? 20 Minutes—just a couple more shots. The wind is great—strong, steady. Click-whirr... Click-whirr. 18 minutes, gotta leave time to pack up...it's going to be close... a little higher... a few more minutes... Click-whirr...

Oh wow! Look at this cemetery! Look at the markers on the graves. They are so worn and faded from the wind and sun and sand that I can barely read the names.

This is where they died, in sight of land, but a very long way from freedom. This is where the spirits were kept and these were the men they belonged to.

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mark your calendars: FLiBB 2000!

by WOLFGANG BIECK

Ralf Beutnagel, Otto Böhnke, Ulrich Monsees, Harald Prinzler and I have decided to organize Fesseldrachen Luftbildtage in Bad Bevensen: FLiBB 2000—Third International Kite Aerial Photography Days in Bad Bevensen, Germany. [*Bad Bevensen is a quiet but picturesque spa about 80 km (50 miles) southeast of Hamburg, Germany.*]

The tentative schedule will be:

MONDAY, JULY 31, 2000

Until 12:00 noon: arrival of participants.

Afternoon: show of KAP-equipment and social gathering.

TUESDAY, AUGUST 1

KAP-technique in details
(video, timers & more).

Discussion about KAP's future:
print, internet, KAP-net.

Workshop of a video-2.4 GHz-circular-antenna to enlarge video transmission up to 300%.

WEDNESDAY, AUGUST 2

Excursion to Expo 2000:
World Exhibition in Hannover.

Group 1: Late afternoon,
drive to Detmold.

Group 2: Return to Bad Bevensen

THURSDAY, AUGUST 3

Group 1: AM: Visit museum kite exhibit:
Pictures for the Sky, near Detmold.

PM: visit Bergen-Belsen
Concentration Camp Memorial

Return to Bad Bevensen,
KAPing on the way.

Group 2: AM: Visit Volkswagen factory
in Wolfsburg

PM: visit medieval city of Braunschweig.

Return to Bad Bevensen,
KAPing on the way.

FRIDAY, AUGUST 4

All day: Weekend participants arrive.

KAP in practice: excursion to River Elbe.

SATURDAY, AUGUST 5

Visit to Ropery Ehlers in Bad Bevensen.

KAP-Technique and KAP-Practice.

SUNDAY, AUGUST 6

Room check-out.

Social gathering, Final KAP-Talks.

3:00 p.m. End of FLiBB 2000.

Except for Wednesday/Thursday trips, housing, most meals, and meetings will be at the Gustav Stresemann Institute, a conference center in Bad Bevensen.

Estimated Cost per person:

All 7 days: DM720,- (about US\$400.00)

includes registration, food & lodging, local transportation, and admittance to Expo 2000 and Kite Exhibition.

Weekend Only (Fri - Sun): DM210,-
(about \$120.00)

Single room surcharge (per person):
DM25,- (\$14.00)

A complete schedule and registration materials will be distributed to the current **æ** mailing list at a later date. Meanwhile, for information contact Wolfgang Bieck at the address on page 2.

the KAP mobile

by JON TRAER, MD, Townsend, Georgia

“Stuff begets stuff,” at least for me.

In a few short years doing KAP, I have somehow accumulated enough “KAP stuff” that storage and getting it all organized, protected, and transported to a photography site had become a significant problem.

Also I had to admit some aspects of KAP, especially retrieving hard-pulling kites, had become a physical and time-consuming chore. So with enthusiasm, but absolutely no regard for logic, I resolved my hard-pulling-kite problem... by creating even more “stuff.”

Thus the KAP Mobile.

This is based on a hand truck with 10-inch-diameter pneumatic ball-bearing wheels. When loaded, it carries all my KAP

paraphernalia in an easy-to-roll package that goes into the back of a pickup truck, van, or even aboard some water craft.

During actual use, I usually unpack only items I need to fly and photograph in a given wind situation, leaving all other unused gear on the KAP Mobile.

Most commonly though, it carries six kites, various kite tails, two transmitters, three camera cradles, two cameras, a 12/0 Penn Senator electric fishing reel spooled with 1,500 feet of 200 lb. test Spectra, a 12v gel-cell battery (to power the reel), as well as a multitude of KAP accessories such as gloves, cap, sun glasses, sun screen, anemometer, note book, assorted films, camera lenses, filters, and even an occasional packed lunch and beverage!



A platform or bed, made of 1/2" plywood, is attached to the top side of the hand truck's frame. The two containers carried on the bed are insulated fabric coolers, with zipper-closure tops and semi-rigid plastic liners.

As a bonus, the insulated coolers keep films and cameras from getting too hot in the field, but were initially chosen because they are essentially water-tight and afford significant mechanical protection for their contents.

The coolers are secured to the bed of the KAP Mobile with bungee cords. A 4" diameter thin-wall PVC tube, attached beneath the platform, is used to store kites that have spars.

The electric fishing reel is mounted on a specially designed reel seat, and will freely pivot 360 degrees, or can be locked in any pivot position. The reel seat is mounted on a short vertical pylon made of 1/2" galvanized pipe secured to the KAP Mobile's plywood platform with a 1/2" galvanized floor flange.

The battery is a 31 amp-hour gel-cell that can be recharged or used in any position without risk of acid leakage. It is secured to

the platform with a nylon marine battery tie-down strap.

For use at "drive-to" sites, I frequently leave the KAP Mobile in the bed of my pickup, using it as a captive platform to fly from. On other occasions I remove the KAP Mobile from the pickup bed to move about a site.

On most ground surfaces, largely because of the KAP Mobile's weight when loaded, as well as its weight distribution, there is little tendency to roll or tip when average kite-pull is exerted in any direction.

Even with hard-pulling kites, I rarely use any anchors—I simply position the KAP Mobile's handle so it's pointing toward the kite, and this orientation makes it dig in and very resistant to rolling or tipping.

Also, when I'm moving about a site, I frequently start my photography up-wind, and let the wind "power-assist" my rolling of the KAP Mobile to the more down-wind locations; however, since the reel will pivot 360 degrees, and with the hand truck's easy-rolling ball bearing wheels, it is actual-

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the ultra-slim cradle

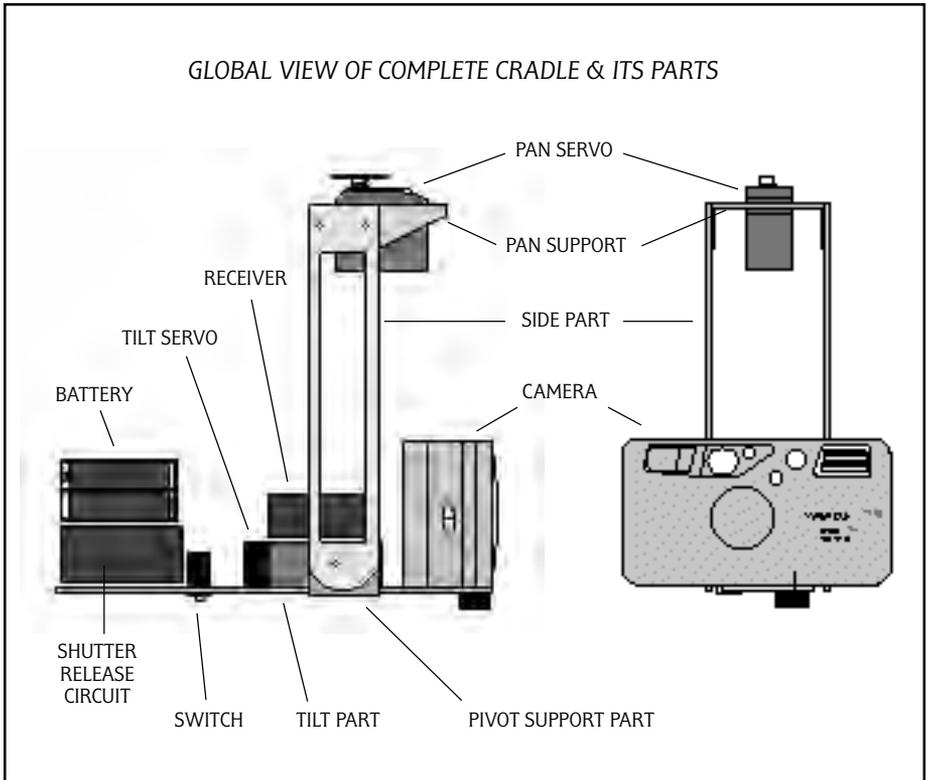
by ANDREA CASALBONI, Ravenna, Italy

One of the reasons for which I create new cradles is the research of a more and more compact and reliable system. After having realized more than ten cradles with double "U" structure I wanted to realize a new conception system.

The idea is not surely new; in fact my friend Fausto Focaccia in 1989 realized a system with similar conception, but the initial inexperience and the lack of information didn't give great results.

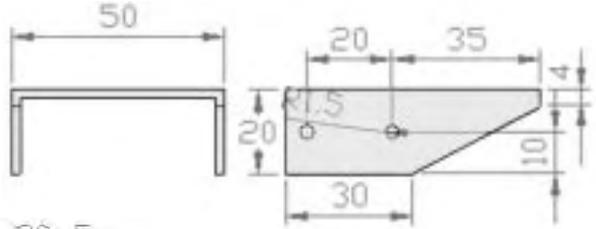
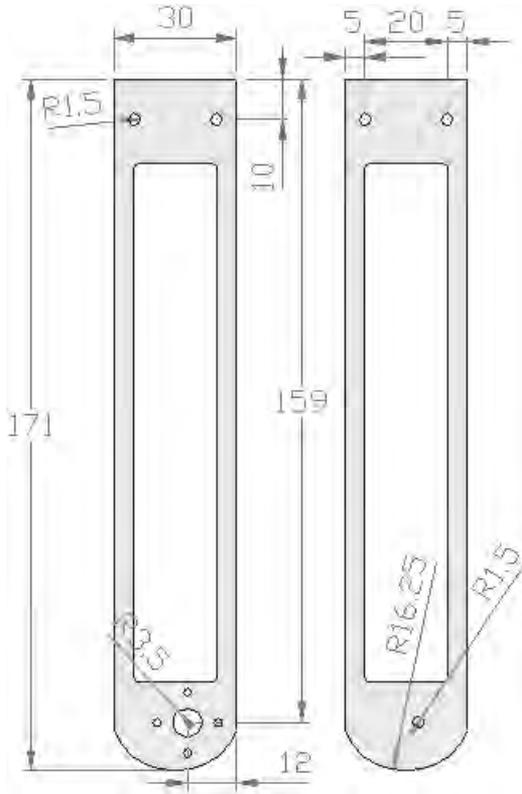
After many years I have resumed the plans and I have come to the construction of one universal cradle. It's composed of 5 elements that require only to be cut and assembled without bending parts.

The movements for this cradle are made by two servos; for the shutter release I use an electrical circuit, but it can be replaced with a normal servo. The pan servo is modified for endless rotation. The suspension system is one of many Picavet variations.

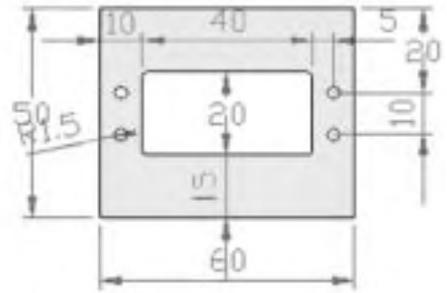


All parts are made of 2mm thick aluminum.
Dimensions in mm.

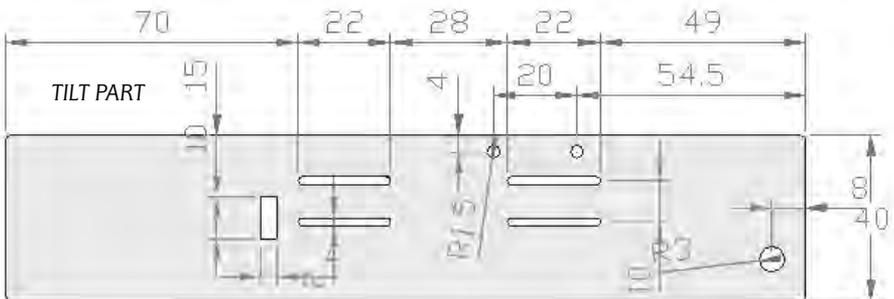
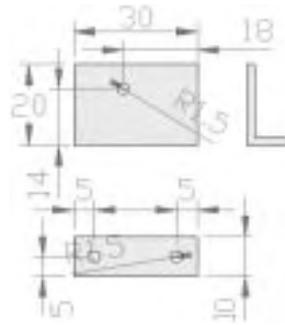
SIDE PARTS



PAN SUPPORT PART



PIVOT SUPPORT PART



a beginner's story

by CARLO DIDIER, Lamadeleine, Luxembourg

It all started with a discussion between Christophe Kieffer and me, two amateur photographers, about aerial photography and the costs of planes, helicopters and balloons.

Then I remembered a story about Kite Aerial Photography in a French photographic magazine (*Chasseur d'Images*, the best in Europe). The article was quickly recovered and read, followed immediately by the decision to try it out. As we could split the costs, it wouldn't be a big financial risk.

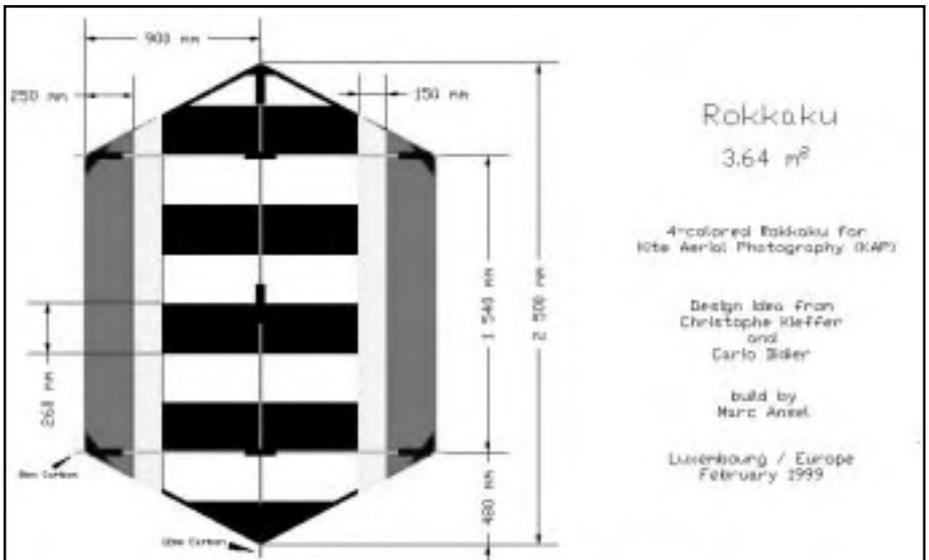
The first problem was the fact that we knew absolutely nothing whatsoever about kites.

Fortunately, there was the Internet and there we found a lot of information about KAP. The best resource, by far, was the marvelous site of Charles C. Benton (<http://www-archfp.ced.berkeley.edu/kap/>).

Having digested all this, we decided to get a big rokkaku for our KAPing. There is only one specialised kite shop in Luxembourg (Lassner Sports & Fun; thanks for the support!) and so we went there to check what kite we could get.

The man behind the desk referred us to Marc Ansel, the president of Luxembourg's Blue Sky kite club and an experienced kite builder, to make a rokkaku especially for us and our KAPing. The result is a beautiful kite (below).

While the kite was under construction, we started to think about the first rig. Step by step, without bothering with blueprints, we built an aluminium rig with Picavet suspension. We had decided to start with a completely remote-controlled rig and a Minolta 3xi SLR. The rig is shown in the picture at the top of the next page, and the

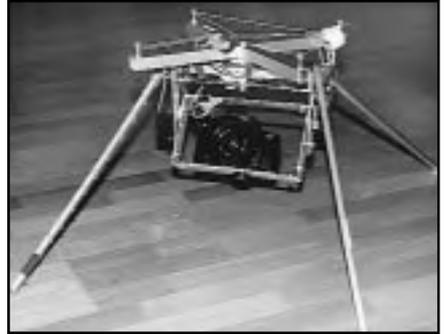


middle picture shows the modified transmitter.

The first KAP flight wouldn't get the rig more than half a meter above ground for lack of wind. A later try with strong but unsteady wind gave some usable photos, but one of the hook-ups slipped along the line resulting in both hook-ups sticking together at the same place on the line and the rig spinning freely around its vertical axis.

The hook-ups were afterwards modified. The second outing (done by Christophe) showed good results and a perfectly functioning, but quite heavy, rig (2kg with the camera).

That's all our experience up to the end of May 1999. I intend to write more about our experiences, the technical details of the transmitter modifications and the new (lighter) rig, which is under construction. For those who'd like to contact me: email to carlo@didier.com.



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loose ends

by **BROOKS LEFFLER**

Over the months, we've accumulated a lot of miscellany: ideas sent in that weren't quite presented as an article; unfinished business; simple designs; and brief editorial judgments. Before we pull the plug, we thought we should share some of it with you.

GREEN KAP?

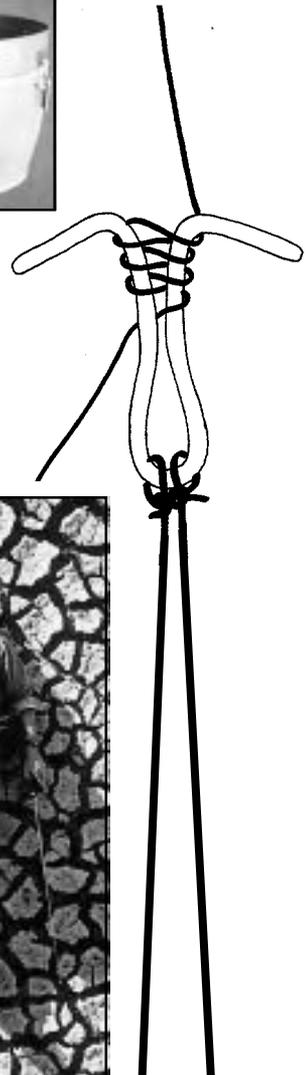
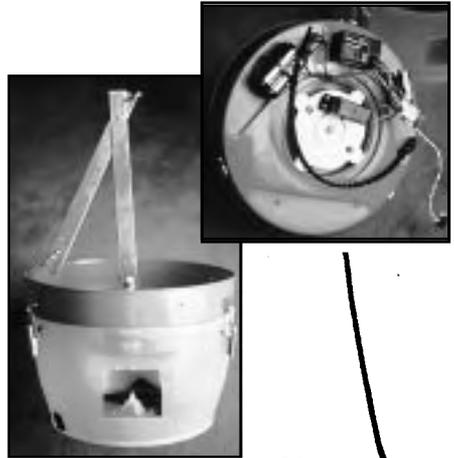
Among the most unusual systems we've seen is Marc Guétré's unique rig made out of a plastic *essoreuse*—a *what?*—a spin-dryer for lettuce! He reluctantly sent us pictures because we insisted. You'll have to figure it out for yourself from the photos [right], but it works! [see Gallery, pp. 16-17.]

BECOT'S HOOK

Christian Becot has been one of our most creative and scholarly contributors. One of his creations all of us could make and use looks a bit like an intrauterine contraceptive device [right]. It's not—it's a very simple kite anchor, bent out of heavy stainless steel wire. Unlike the illustration, I prefer to figure-eight the loose end rather than the loaded line because it's easier to release in emergencies.

UNFINISHED BUSINESS

Way back in Fall 1997, Steve Eisenhauer announced the "First Annual **aerial eye** Self Portrait Contest." We received only a few submissions, but the clear winner was Cris Benton. As Cris has demonstrated here and on his web site, his eye sees opportunities many of us miss, and this very unusual image captures one of them [right].



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how KAPers KAP

by DAVID HUNT, Gray, Tennessee

In January 1999, as a project for a Technical Writing course, I conducted a survey of Kite Aerial Photographers. Seventeen questions were asked to determine the method(s) each respondent used to aim and compose their KAP pictures, and methods that had been tried but were not used anymore. I had a limited time frame so I sent the survey only by e-mail to the 139 **æ** subscribers that had e-mail addresses listed in the current annual directory. I had 32 responses, 23% participation, which is typical for a unsolicited survey.

Here's a summary of the questions and the responses:

Questions 1-3 asked if they used a R/C rig, a manual rig, or both. 25 had R/C rigs, seven had manual rigs, and another seven had both R/C and manual rigs. Of those that had both types of rigs five used their R/C 90% or more of the time and two used R/C 30% or less of the time.

Question 4 asked how many exposures were taken of any one subject to make sure that they got a good picture. The average was 8.3 exposures per subject.

Questions 5 & 6 asked if an assistant was used or if they KAPed alone. 70% of KAP is a solo experience, 45% never have any help, and when help was available the majority seem to use their help holding the kite while they move about with the transmitter.

Questions 7 asked if visual aids attached to the R/C rig were used to help aim the camera. 25% do not use any visual aids. 60% use the antenna boom as a visual aid. Three use a ball attached to the end of the boom, two mentioned using binoculars,

and one person had tried lights unsuccessfully. One respondent who had a stereo rig that was over one meter wide used different colored paints on each end of the rig.

Question 8 asked if the transmitter controls were calibrated to help aim the rig. 60% use some calibration on the tilt control and only one person mentioned having their pan control calibrated.

Questions 9 through 14 related to the use of video assist. Only five respondents had used video assist at any time. Six responded that they intend to use video assist in the near future. Four of those that have video assist equipment use it less than 25% of the time; the fifth person used it about 75% of the time. The four that use video assist less than 25% of the time said that the benefits of video were outweighed by the hassles of the extra equipment. The cost for video assist ranged from US\$300 to US\$600.

Question 15 asked if the "Range / Elevation" method was used to determine the rig's distance down range. This is a method first mentioned by Cris Benton, **æ** 3:4, p.21, and in more detail at his web site. Cris was the only respondent that used this method as he describes it.

Four other respondents use variations of this method. One respondent paces off distances before the rig goes up. One respondent uses marks on the kite line. Another uses a piece of clear plastic with the field of view for the camera drawn on it.

A very interesting system is used by Hans Wiebosch, which he calls his "Ouija-

Continued on page 21



[above] Boardwalk, Phillip Island by Tony Stanley
[below] Rockingham Council Offices by Al Long



aerial gallery

[outside, clockwise from right]

Parade Rest by Randy Bollinger

Castel del Monte by Claudio del Greco

Maze by Michel Clinckemaille

France's First Pont-Canal, 1675

by Frank Louwers

Campanile by Andrea Casalboni

Yarra River, Melbourne by Arthur Coombs

[below] Fort Bloque, France by Marc Guétré



the mass-KAP experiment

by **BROOKS LEFFLER**

At this year's Fort Worden Kitemakers Conference in Port Townsend, Washington, we pulled off what must be a first in KAP: twenty budding KAPers built radio-control rigs in four hours.

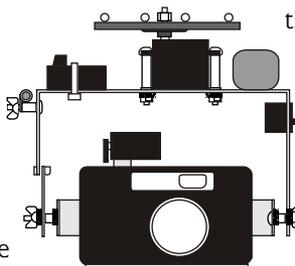
Ken Conrad of Great Winds Kites in Seattle, who was on the program committee, provided the impetus; I created enough kits to do the job and guided the troops through the ordeal. But getting there, for me, was more than half the fun, because to my knowledge, nobody has ever tried to do a one-size-fits-all R/C design, and a lot of trial and error went into the result.

To keep costs down and the design simple enough for completion within a four-hour session, we settled on a 2-channel AM system, and restricted cameras to point-&-shoots with a maximum size of 5 x 3 x 2.5 inches. We used the cheapest radio we could get from Tower Hobbies, a Futaba 2DR with AA batteries and two standard servos.

Several decisions came early: aluminum double-U design, wooden Picavet suspension, and the option to choose between shutter/pan or shutter/tilt configurations.

I chose a standard double-U design because it was adaptable to a wide range of camera sizes and shapes, and could be easily prefabricated. A wooden Picavet would be lightweight, simple, and inexpensive, using readily-available screw-eyes instead of hard-to-find eye-bolts. And while it would have been much simpler to make all rigs with a shutter/tilt servo configuration,

Ken felt that most would want to use shutter/pan. (He was right: nobody chose shutter/tilt.)



Other basic assumptions fell by the wayside. After ordering a bunch of plastic gears from American Science and Surplus, I decided that it would be quicker, less expensive, and (surprisingly) more fool-proof to modify the kit's pan servo for 360° rotation. And it would allow much easier and cheaper cradle prefabrication and assembly.

The wooden Picavet emerged as a rounded 3-inch square of 3/16" basswood plywood, because I had no success trying to mass-produce an X. No problem: as a square it works just as well, and is still very lightweight.

THE VARIABLES

The two basic problems designing a rig that will fit a wide range of cameras are the locations for the tripod screw hole and the shutter button. No two cameras, even from the same manufacturer, are alike.

I solved both problems by using what has become my standard camera platform: a 4-inch piece of 1-1/2" x 1-1/2" x 1/16" thick aluminum angle, into which a 1/4-20 tripod hole may be drilled anywhere, with a 4" high servo post of 1/2" x 1/2" aluminum angle attached to the back.

Peter Bults commented in his article in *æ* 4.2 that the shutter servo mount was the most difficult to design, and he much preferred converting the camera to electric

shutter release. Well, the latter terrifies me, and I've had less than great luck with built-in electric shutters, so I've come up with this shutter servo post instead, and I've used it successfully on most of the two dozen rigs I've built in the last two years.

The servo post may be rotated 90° and/or shortened, and with the judicious use of nylon spacers under the servo mounting screws and a plastic tube extension on the servo arm, it is possible to place the servo finger right over any top-mounted shutter button. So far, at least!

At our workshop, there were a couple of cameras that had tripod holes placed too far forward for the aluminum angle platform, but that may be corrected by adding an additional plate to increase the depth of the base, or by substituting 2" angle for the camera platform.

My goal of making it possible to use a servo at either pan or tilt positions was simply accomplished by providing a servo-sized flat aluminum filler plate to attach to the upper inverted U in place of a tilt servo.

This configuration, of course, also makes it possible for the two-channel system to be expanded easily to three channels.

THAT OLD 360

In my opinion, the knottiest problem in building an R/C rig is designing a foolproof final drive for panning the camera 360°. The theoretically simplest is to use a standard servo with 1:4 step-up gearing, but this brings with it two not-insignificant problems: first, the pan action is way too fast; second, anchoring the gears to the servo and the pan axle is not always easily accomplished.

It is possible to get good gears for this arrangement (from Small Parts Inc, for one)



[above & below] radio rigs in the raw



[below] Rob Pratt in deep concentration



[below] Fred Carey & Ken Conrad untangle



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which have flanges allowing the use of a set screw on the final drive axle. But they're expensive, especially for mass production. Most gears don't have such a flange, and I've had limited success with locknuts or washers. Where possible, I've used a pin through the gear and axle.

Also with gears, supporting the servo and final drive axle on the frame requires a more intricate frame design than is necessary without the gears. On this project, that meant design time and money, and classroom assembly time.

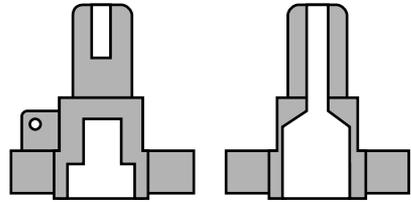
If we could come up with a simple way to convert the servo which would allow direct drive, with the Picavet attached directly to the servo, that would be much better.

Eye-flier Scott Kroeger had suggested to me several months ago a simpler, stronger solution than the conversion I described in **æ** 4.3, which required replacement of the feedback potentiometer in the servo.

Scott suggested simply drilling out the inside of the servo's main output gear so it would not engage the internal pot, and then drilling a through hole which would allow the insertion of a #4 machine screw through the output shaft from the inside of the gear. (See cross section above) The Picavet attaches directly to that machine screw.

So that's what we did at Fort Worden. No soldering, just the removal of the internal stops and careful drilling of two holes. Everybody did it without a problem. [To my surprise, the custom fitting of the servo post was the most time-consuming part of assembling this kit. Peter Bults was right.]

Servo conversion to 360 doesn't solve the speed problem completely, although it is possible to use the trim slider on the transmitter instead of the joystick to pan



before mods

after mods

more slowly. Gear reduction of 4:1 or better yet 6:1 or 8:1 AND a modified servo would be ideal, but they were beyond the scope of this project.

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KAP SYSTEM FOR SALE

The Late Rodney Thomsen's Last
WOODEN WONDER

2-channel 3-function r/c rig, ready to fly
with camera and shockproof case.

see *Aerial Eye* 3.3, page 13

contact **Marvin Nauman**

(253) 265-6800 or hsp@harbournet.com

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board". Basically this system involves marking the line to know how much line has been let out, measuring the angle of the line using a simple protractor device made from cardboard, and knowing the tilt angle of your camera. These three measurements are used on a specially designed cardboard scale that help determine the proper framing of the shot. You can see pictures of this system on his web site. (<http://users.capitolonline.nl/~nlco8227/kap.htm/>)

Question 16 asked if a pulley system had ever been used to raise and lower the rig on the kite line. Five responded that they have attempted this method. Three said

that the system did not work well for them, and two said that they found the system occasionally useful.

Question 17 asked if there were any other rig aiming methods used that were not covered by the previous questions. One mentioned using the video on the ground looking up (AE 3:4 p.21). One used a plumb line for vertical shots up to 30 feet at an archeological site. Two attempted to use laser pointers but they proved to be to dim in daylight situations.

I appreciate all those who took the time to respond to my survey. If any one has more specific questions that they would like to ask e-mail me at: davidhunt@washington.xtn.net



Continued from page 14

While on the subject of Cris, I'd like to say something about his cover photo on this issue.

I chose the cover picture for several reasons: our first issue had circles on the cover; this picture is appropriately somber in tone and perhaps even looks like an eye closing; and most important, I thought we should honor our most important supporter. Not only is Cris Benton the most talented KAPer to take to the air since **æ** was founded, in my opinion, but his web site has piqued the interest of hundreds of would-be KAPers around the world, and has brought more subscribers to us than all other sources put together. Thanks, Cris!

SECOND LOOK 1

Last fall I built Ralf Beutnagel's Dopero kite [**æ** 1.3], and I want to recommend it as the best light wind lifter I've tried. I built the standard-size kite, but used the Maxi-Dopero open keels [**æ** 3.3]. On its maiden flight, the kite flew at an 80° string angle and easily lifted my Monopost™ rig in so

little wind the flag on my flagpole was just barely moving—probably 5 mph. Thanks, Ralf, for a great design!

SECOND LOOK 2

At Kites on Ice in Madison, Wisconsin in February, Craig Wilson said he was not as enthusiastic as I about nylon machine screws [A Few of My Favorite Things, **æ** 3.4] because he had known them to break. Later in the day my rig hit the ice a bit too hard, and the only thing to break was my HoVer pivot, a 6-32 nylon machine screw. The cold probably contributed to the problem, but be careful—don't use nylon screws in places where breakage could jeopardize your rig or drop something on someone.

THE HI-TECH FUTURE

In the four years we've been doing this, technology has provided us with several tools that are changing the face of KAP.

Composite materials have been around, but not easily available, and rigs made

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washing machine timer shooter

by MAURÍCIO JOSÉ KACZMARECH, Ponta Grossa, Paraná, BRASIL

The problems about how to activate the camera from a distance are certainly the ones which most torment the novices in kite aerial photography.

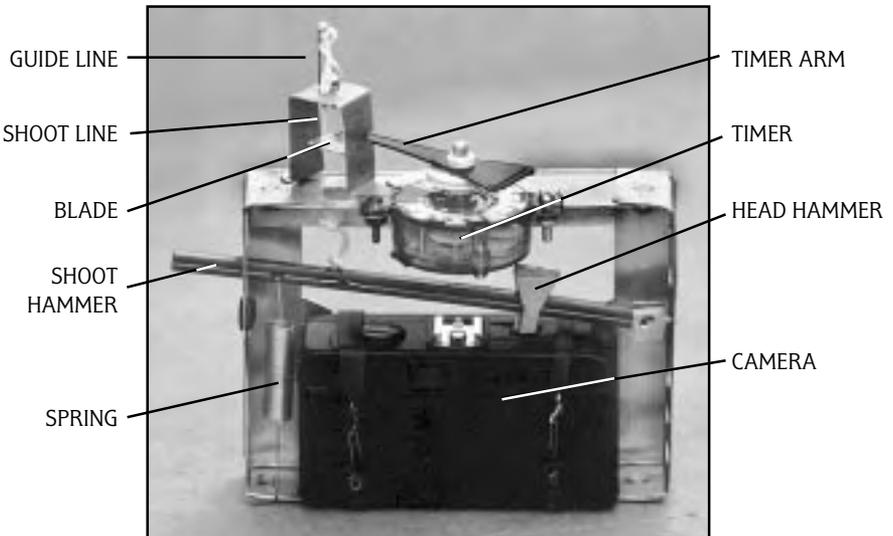
My prototype, one system which is effective (tested in January 1998), is based on a washing machine timer. This is very simple (mechanical clockwork mechanism), light (some 30 grams), compact (2 X 5 cm, approximately), and normally available.

This timer (right), has a dial-plate with one minute markings, total 15 minutes; and about the axis an arm is attached. A blade is mounted in the point of the arm.

This control apparatus is connected with the cradle (below). The arm is suspended above the line (fixed for one point); the temporizer [timer] arm strikes the distended trigger line; the blade cuts the line and the spring pulls the arm against the cam-



era. The shutter shoots when the head hammer strikes it, and one photograph is realized.



The delay timer permits the arm to start with a delay of one to 25 minutes. This duration rate allows more or less time for the kite to ascend.

The mechanism is relatively easy to adjust (observe the length line; the line installation may require some patience). In the system shown, I utilized the washing machine timer of the Sankyo Seiki Mfg. Co., Ltd of Japan. This shooting system is to be connected in one simple cradle, constructed with plate and tubes of aluminum, and other easy available materials (below).

This system has some disadvantages, with the limitation of obtaining only one shot for each flight, and there is no controllable moment of when the picture is taken, which sometimes is simultaneous with movement of the cradle and blurs the images. However, the mechanism has several advantages, with its simplicity, low cost, lightness and ease of construction.

The washing machine timer shooter is primitive compared with radio controlled systems; however, it is interesting for the inexperienced KAP beginners.

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Continued from page 21

from them have been described in these pages just twice [Rock, æ 1.1; Louwers, æ 3.3]. I've just tried the fiberglass/Nomex laminate that Steve Rock used. It holds great promise: very stiff, strong, and light, and not too expensive. See Sources in the new directory and give it a try.

Servos have gotten progressively smaller and lighter. FMA Direct and Cirrus [see Sources] both offer ball-bearing, 360°-convertible servos that are just .90" (23mm) long and weigh as little as .22 oz (6.2g)!

KAPers have been looking longingly at digital cameras for several years now, but the low-resolution affordable ones just didn't provide enough picture quality to warrant using them for KAP.

The ±\$500.00 "megapixel" cameras which hit the market last fall were an improvement over the 640x480 cameras of a year earlier. But just in the last two months, cameras have been introduced with double the resolution of the megapixel cameras, at competitive prices.

Now we're getting somewhere! Check out the Nikon Coolpix 700, which seems to be made to order for KAP. It offers resolution of 1600x1200 pixels, weighs just 9.25 oz (262g), and sells for less than \$600.

A marriage of digital cameras and 2.4 GHz video is to me the most intriguing possibility, because the output of most digital cameras may be transmitted to the ground. That cumbersome tandem second camera and clumsy attempts at through-the-lens viewing are all old business!

Last week I bought the Nikon, and some very expensive virtual-reality glasses with which to monitor it. I'm still not convinced the whole process won't be so much more complicated that I'll go back to the old blind way. We'll see!

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Continued from page 2

had established contacts with european KAPers by attending the 1993 KAPWA workshop in Germany, and had already posted the definitive primer on KAP on the Internet. She was signed up too, and together we started rolling towards our first issue. The AKA Board agreed up front to fund the first two issues.

RISE AND FALL

Starting off mailing 24 pages to a list of 40 potential subscribers, nearly all AKA members in the U.S., **æ** grew quickly. By issue 2.1, we were mailing 28 pages to 125 paid subscribers (AKA members and non-members) in 16 countries, which rose to 200 by the end of the second year.

The appearance of Cris Benton's KAP web site midway through our first year, with generous plugs for **æ**, has been responsible for most of the dramatic growth in interest worldwide.

In the summer of 1995, Anne's friend WOLFGANG BIECK came to the U.S. to claim his \$300.00 first prize for the World Kite Museum's Eddy Centennial KAP Competition. Upon receiving it, he immediately turned it over to the KAP committee, to be used to advance public awareness of KAP.

We decided he should be on the committee too, and that the money should be used to develop a traveling exhibit of aerial photographs, which it has.

By summer 1997, we had to enlarge the journal to 32 pages to accommodate the stories, photos, and letters of no less than 20 contributors, with still more carried over to the next issue.

When we exceeded 200 subscribers, my capacity to produce it all at home was severely strained, and we started using a commercial printer with issue 3.4.

Early last year, subscriber growth reached a plateau at about 250, but more important, contributions of articles and pictures started to decline. Since our "How to Build It" issue in spring 1998, it's been a dramatic slide downhill.

Seeing personal burnout coming, I advertised for a new editor in that issue, figuring new blood would help. We had one (1) serious applicant, CHUCK HENDERSON. Chuck had the time and the requisite desktop publishing skills, but was new to KAP and didn't know the players. Craig Wilson, who knew the craft and the people but lacked the computer skills and had no time, agreed to work with Chuck as co-editor, beginning with 5.1.

A steep learning curve combined with even fewer submissions, and it took six months to put together that issue. In it, Craig said, "If we don't get more input for the next issue, we will conclude that the need for this effort has waned and will discontinue publication." And so it was. Chuck "threw in the towel" on May 10.

So here we are.

NOW WHAT?

Black & white copies of all back issues will be available for a limited time so you can fill out your collection. See page 26 for a complete index.

I still intend to put together a KAP book for AKA. It may be simply a compilation of the 18 issues of **æ**, or it may have new material. I would welcome hearing from you and seeing your latest pictures.

Elsewhere in this mailing you'll find a form to request a refund of your subscription payment if you are due one.

It's been wonderful fun, lots of work, very gratifying—and now, a great relief. Thanks, and Happy KAPing!

Continued from page 9

ly very easy to move in almost any direction you choose.

Though the KAP Mobile has greatly simplified my most common (take-everything-with-you) style of KAP, there are some definite negatives. It works well only on relatively smooth and firm surfaces. It is difficult to roll through soft sand, over rough terrain, through heavy undergrowth, or over newly-plowed fields.

It is also heavy, weighing 94 lbs (42 kg) fully loaded; however, by using a simple plywood ramp (more "stuff") it is easy to load/unload as a complete unit into/from a van, pickup, and many boats.

It can be disassembled, but it would never be classified as "carry-on" airline luggage.

Though I've found the 31 amp hour battery more than adequate for an average day's KAP use, eventually a 12 V. battery charger must be at your disposal.

As an additional negative point, a KAP Mobile could be relatively expensive to build, when using all new components—but for those patient enough and willing to

check flea markets and yard sales, I feel one could be constructed for less than \$250, especially if you can find a good used electric fishing reel and hand truck of appropriate size.

For me, despite the negatives, the ease and convenience of getting to a site, with all my "stuff" organized and protected, and then getting in the air ready to take photographs in less than 5 minutes, are worth the cost. Perhaps I most appreciate the KAP Mobile's electric reel, especially at the end of a long day when its time to retrieve several hard-pulling kites supporting a heavy SLR rig at relatively high altitude.

While the KAP Mobile concept may not fit many KAP styles, it does fit mine almost perfectly. There are times, however, when I plan to use my still-on-the-drawing-board "KAP Traveler." This will consist of bare essentials only—simple non-sparred kite, point-and-shoot camera, 2-servo cradle, transmitter, and a manual reel—all to be fitted into an ordinary attaché case that would be acceptable to airlines as carry-on luggage.

Unfortunately, the KAP Traveler will add to the still-growing list of my "KAP stuff!"

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Continued from page 3

The dull light we perceive from the ground renders the landscape in a different fashion than the directional light of a clear day. It is as though each surface's luminance carries the mark of the amount of sky it can "see," an altogether pleasing effect.

Incidentally, I returned to the Marin Headlands a couple of weeks later to find substantially different conditions: blustery winds on a crystal clear day. Still yearning for camera time I sent the Sutton 16 aloft and then the Canon Rebel rig. The kite was

pulling like a mule and I soon resorted to my rock climbing gear (straps, carabiners, and bivouac pulley) to manage the kite.

Measuring ground level wind velocity with the Kestrel anemometer yielded an average speed of 31 mph with gusts to 46 mph. This is, I believe, a personal record for highest wind velocity with a camera aloft. As you might imagine the camera cradle was anything but still. However the bright day allowed a shutter speed of 1/1,500 second and images were reasonably sharp.

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the complete aerial eye index

ORGANIZED BY BROAD SUBJECT, THEN BY VOLUME & NUMBER

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2.2	In Search of Diagonal Historicals	(KAP subjects)	Green
2.2	Kiteography	(photogrammetry)	Warner
2.2	Perspective: Vertical vs. Oblique	(shooting angles)	McCuiston
2.2	Photographing Natural Textures	(using KAP in Virtual Reality)	Latham
2.2	Rise To The Occasion	(planning and subject selection)	Wilson
2.2	Same Place, Different Image	(photo sequences)	Eisenhauer

2.2	Sedimentary Soils & Low-Flying Birds	(KAP subjects)	Bieck
2.2	So What Are You Shooting Up There?	(using maps in KAP)	Eisenhauer
2.2	The Challenge of Another Perspective	(KAP technique)	Haugrund
2.2	Use Cheap Gear & Take Lots of Chances	(KAP in unusual places)	Jebe
2.3	Back Packer, Hip-Shooting on the Hop	(single-handed KAPing)	Green
2.3	Becot's Best	(equipment & practice)	Becot
2.3	Boundary Layers & Bluff Bodies	(flying near buildings)	Benton
2.3	Exposure & Filters	(meters & filters)	Eisenhauer
2.3	Henry Does It In a Canoe	(KAPing afloat)	Jebe
2.3	How To KAP without Wind	(launching by running)	Nakajima
2.3	Kiteology • Kiteologist • Kiteography	(three new words)	Bieck
2.3	Rookie Technique	(tips for beginners)	Pebly
2.3	Technique...Technique...Technique	(developing KAP style)	Eisenhauer
2.4	Kites & Flight	(flying delta-Conynes)	Eisenhauer
2.4	Kites In Trees—An On-Line Serial	(story of a rescue)	Jebe
2.4	Training Deltas	(flying stacks of deltas)	Bults
3.2	Fossil Forests of the Far North	(KAP in geology research)	Bigras
3.2	Kiteflying in the Freezer	(studying penguins with KAP)	Carlson
3.2	Northeast to Cathay	(KAP in archaeology)	Bults
3.2	The Walls of KAP	(conquering your limitations)	Eisenhauer
3.3	Easter Island Revisited	(KAP in archaeology)	Dvorak
3.3	The Penguin Papers	(Antarctic research with KAP)	Carlson
3.4	A Few of My Favorite Things	(tools & materials)	Leffler
3.4	Tips from Randy	(KAP technique)	Bollinger
4.1	A Terse Treatise on Trains	(flying multiple kites)	Eisenhauer
4.1	It's Not Just a Crop Shoot	(mental discipline in KAP)	Wilson
4.1	On Line, Tails, & Trains	(personal KAP practices)	Jebe
4.4	A KAP Alternative	(resorting to TAP)	Jebe
4.4	Free Wind & Freelancing	(tips on selling your pictures)	Bollinger
5.1	Early Light	(learning KAP)	Lucas
5.1	KAP in Poland	(KAP in geological research)	Aber
5.1	Knots for KAPers	(eight useful knots)	Leffler
5.1	Oops!	(learning from mistakes)	Pebly
VIDEO			
1.2	Using Aerial Micro-Video	(video uses in KAP)	Bollinger
3.1	Aerial Video: Get The Picture Legally	(video aiming for KAP)	Joiner
3.1	Using Video	(video aiming)	Green
3.2	Is VICORI Victory?	(video heads-up display)	Bieck
3.2	Tune In, Turn On, Take Off	(video system design)	Joiner
4.2	The TRAM-Station	(compact rig with video)	Beutnagel

*Those listed below have made **the aerial eye** possible through their contribution of articles and/or photographs.*

THANKS TO ALL!

James Aber	Peter Essick	Wendy Martin
Richard Amirault	Terry Foss	Pierre Mazieres
Christian Becot	Norbert Gabriel	H. Scott McCann
Tom Bennett	Fred & Earl Galley	David McCuiston
Charles C. (Cris) Benton	Vince Goodnough	Ulrich Monsees
Peter Berryman	Claudio Del Greco	Patrick Morin
Ralf Beutnagel	Rob Green	Katsutaka Murooka
Wolfgang Bieck	Georges Grepin	Masami Nakajima
Carl Bigras	Marc Guétre	Marvin Nauman
Randy Bollinger	Carl Hanson	Kevin O'Leary
Alberto Bonati	Simon Harbord	Bob Pebly
Paul Breddels	Michael Haugrund	Bob Price
Henk Breedland	Chuck Henderson	Harald Prinzler
Rainer Breuer	David Hunt	Kit Richards
Peter Bults	Henry Jebe	Anne Rock
Tom Burgener	Al Johnson	Phil Salisbury
Jean-Edouard Cantinieaux	Stephen Joiner	David Schenken
Ivan Cardelli	Chuck Jones	Kevin Shannon
Fred Carey	Mauricio José Kaczmarek	Christopher Spencer
John Carlson	Axel Kostros	Tony Stanley
Andrea Casalboni	Andy Kraushaar	Richard Synergy
Michael Clinckemaille	Scott Kroeger	Glen Thomas
Adele Coombs	Roy Latham	Rodney Thomsen
Arthur Coombs	Dennis Lazar	Jon W. Traer, MD
Larry Cotton	Brooks Leffler	Peter van Erkel
Doug Davlin	Gretchen Leffler	David Van Zandt
Larry Day	Gene Lewandowski	Leo van Zandvoort
JoAnn & Louis J. Deisinger	Al Long	José Wallois
Claudio del Greco	Frank Louwers	William S. Warner
Carlo Didier	Warren Lucas	Eddie Webb
Don Dvorak	Bernhard Malle	Craig Wilson
Steve Eisenhauer	Phil Marino	Woody Woodrich

AND TO THE AKA BOARD FOR THEIR SPIRITUAL & FINANCIAL SUPPORT.



[above] Castle at Sekiyado by Masami Nakajima

[below] Lüneburger Heath—Homeland of FLiBB 2000 by Wolfgang Bieck

