

Campanile, University of California, Berkeley, by Cris Benton. Yashica T4, FlowForm 16

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## on the horizon

Coming events of interest to KAPers:

### 10<sup>èmes</sup> Rencontres des Cerfs-Volants

March 30 - April 8, 1996  
 Berck-sur-Mer, France  
 info: Gérard Clément, Paris  
 (+33) 1 44 68 01 86  
 fax (+33) 1 44 68 03 86

Special emphasis on KAP this year; the Committee's traveling exhibit will be on display. See article, page 4.

### 2nd International

**Kite Aerial Photography Days**  
 October 7 - 13, 1996  
 Bad Bevensen, Germany  
 info: Wolfgang Bieck  
 (+49) 5821-2443

Week-long hands-on workshop in a 16th-century Gothic courthouse. US\$360. incl. food & lodging; weekend only, \$140.



# the aerial eye

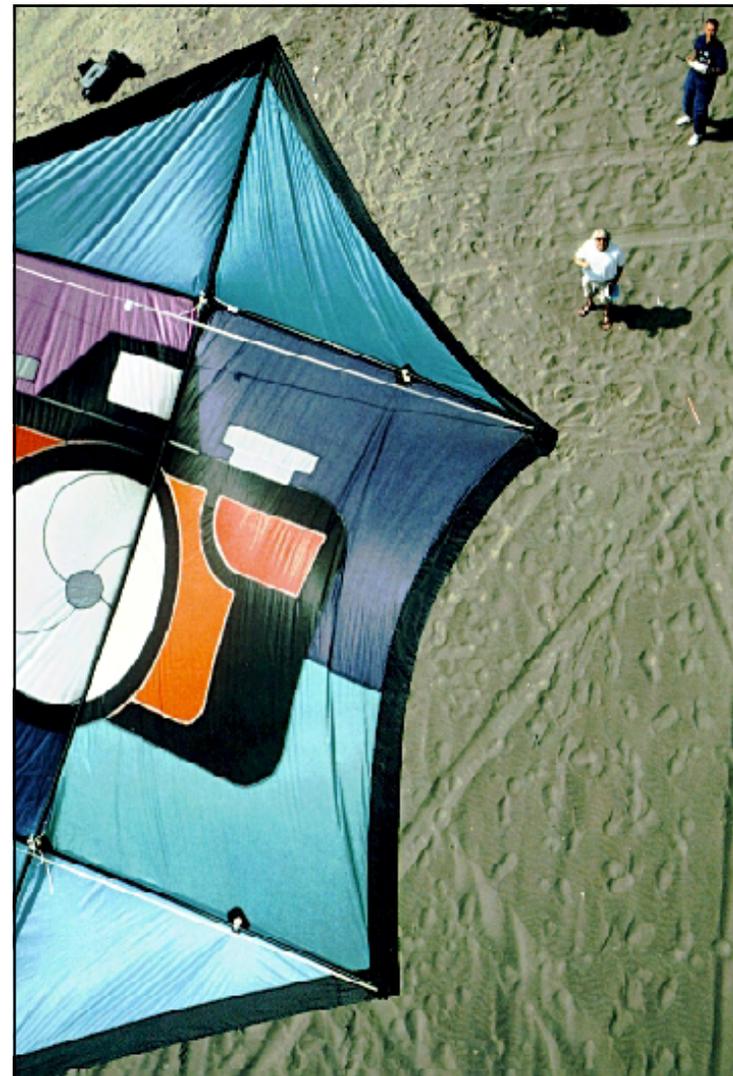
a quarterly publication of the aerial photography committee  
 of the American Kitefliers Association  
 volume 2 / number 2 / spring 1996

US\$4.00

USA & CANADA

US\$5.50

overseas



*Jim Day's  
 KAP-Rokkaku  
 at Long Beach  
 by  
 Wolfgang  
 Bieck*

## TARGETS / SUBJECTS

## 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.

Single copies and subscriptions are available to AKA members and non-members alike, under the following fee schedule:

	single	4 issues
AKA	\$3.00	\$10.00
overseas	\$4.50	\$16.00
Non-AKA	\$4.00	\$15.00
overseas	\$5.50	\$21.00

Domestic subscriptions will be mailed by first class mail; overseas subscriptions (i.e., outside North America) will be mailed by air.

Advertising is available in modules of 2.25 inches wide by 1.25 inches high, at \$20.00 per module, payable in advance. Advertising in which aggressively competitive pricing is featured will not be accepted; call if you have questions or need more info. Camera-ready copy is not necessary, but is acceptable if it meets the above criteria. Copy deadline is one month before the first of the month of publication. Contact Brooks Leffler.

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## how about choo?

Growing at a rate of about 15% per issue, we're now up to 150+ subscribers! With each issue we get a few new contributors, and we thank them. Isn't it time you sent us something? We're all volunteers, and the success of the publication depends on each of you to participate. So keep those letters and pictures coming! Deadline is first of month of publication (see left).

Text via Email or on 3.5" (9cm) high-density disk (Mac or IBM in ASCII text format) is preferred, but typed text or hand-written letters are welcome too. Likewise, diagrams in PICT, TIFF, or EPS formats are best, but pen drawings, preferably on white paper, or just quick sketches on the back of the proverbial napkin will work too.

Photos may be sent as negatives, prints or slides. We can also read Kodak PhotoCD, or Macintosh disks in almost any Mac graphic format. We'll keep the prints unless you direct otherwise, but return all negatives, disks, CDs, and slides—eventually.

Send everything to Brooks Leffler at the address below.

## our feature this issue: so what are you shooting up there?

by STEVE EISENHAUER

Aerial targets often mirror your ground-based interests.

My own targets are invariably wildlife refuges, parks and other public lands, coastal beaches, rivers and boating activities: scenic landscapes from about 300 feet elevation using a 35mm focal length lens pointed down but including the horizon (the oblique view).

Lately I've moved a little away from this photographic formula. In response to an ad in the aerial eye, I took more than 500 "straight-down" photographs for CGSD Corporation, primarily with a 50mm lens. My eyes are now more aware of new photographic opportunities and targets. The straight-down view lacks the depth of the oblique view, but it often provides a better defined and more artistic photograph.

Aiming the camera means finding a target, but it also means finding an interesting angle on that target. This dual challenge should keep any KAPer occupied for a lifetime.

Take aerial photographs of targets you know and want to learn more about. If you enjoy an activity, such as sailing or skiing or farming, then you'll probably enjoy taking aerial photographs of that activity. You'll learn a new perspective of the enjoyed activity and be able to share your photographs with people you know.

Giving or selling photographs to people who really appreciate them is one of a KAPer's biggest rewards.

As a landscape photographer who can't see from ground level what my camera sees from 300 feet up, my most valued guides are the 7.5 minute topographic maps of the U.S. Geological Survey.

These maps can be purchased from USGS or from local map suppliers for about \$3.00. Their scale is 1 inch = 2000 feet, and they locate contour elevations (topography) and individual houses, structures, streams, marshes, forests, fields and many other land features. They are updated regularly by government aerial surveys, although in some areas these updates may be 20 years apart.

These maps enable me to imagine more easily the camera's view, particularly in areas where trees or buildings obstruct my own view. USGS provides maps for the entire United States; if you live in another country, check with your local government or map supplier to see if similar topographic maps are available.

I've purchased about 30 USGS maps, covering most of southern New Jersey. The maps prevent me from getting lost while driving; even dirt and gravel roads

• continued on next page

*what are you shooting? • from page 3*

are noted, and landmarks are easily distinguishable. Finding kite launching sites is simplified; public parks, schools and quiet rural roads next to open fields are clearly noted.

School athletic fields and lawns are particularly noteworthy; on weekends they are rarely restricted from public use. If you have young children, they can usually play on the school's playground equipment and fields. Each schoolyard provides at least one good aerial photography opportunity: you just have to know which direction to point your camera, at what elevation and (if you have an interchangeable lens camera) which lens to use.

USGS maps are also good for locating

airports, with which kitefliers must exercise extra care [see FAA, page 22].

When picking a target and aiming your camera, take some photographs of the scenes away from your target. In a roll of film, I often get 26 different photographs of my target and then rotate the camera 360 degrees, taking 10 photographs that don't include my original target. I occasionally find that these mis-aimed photographs are the most interesting and the best compositions.

Serendipity is an important word in kite aerial photography; no dictionary fully defines it. I think of serendipity as magic, and as a KAPer you must allow for magic. If you do, you may be rewarded with some unexpected remarkable photographs.

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## show your best stuff in europe!

Here's your chance to show your very best work to a wider audience.

The 10th Annual Kite Festival at Berck-sur-Mer, France, will be held from 30 March to 8 April, 1996—Easter week.

Our traveling exhibit of aerial images, based on the World Kite Museum competition last year (æ 1.4) will be on display for Berck's large audience to admire. Craig Wilson, Brooks Leffler, Wolfgang Bieck, Jose Wallois, and other KAPers are also expected to attend.

To celebrate the city's longtime historical association with kite aerial photography, event organizer Gérard Clément intends to give special attention to KAP during this tenth running of the festival.

This is great exposure for our craft, as the event draws 80 - 100,000 spectators each weekend.

**If your work was not represented in the WKM competition, or if you have new or better stuff you'd like to submit, send up to three unmounted prints measuring at least 8" (20cm) but not more than 12" (30cm) in the longest dimension to Brooks Leffler at the address on page 2. Prints must be received by March 20, so HURRY!**

If you'd like to come to Berck, phone Gérard in Paris at (+33) 1 44 68 01 86 for advice on accommodations. He speaks english.

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## perspective: vertical vs. oblique

by DAVID McCUISTION, El Dorado, Kansas

era angle.

General observations/opinions:

Straight down (vertical) views are appealing because the photograph looks unique—the camera appears to be suspended in mid-air.

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What is in a camera angle? Do vertical camera shots [i.e. straight down] present some subjects better than an oblique angle?

I find that vertical shots are easiest to compose. Oblique shots are more natural in appearance, but lack the vertical's grabbing of your attention (Hey look! This shot is right over their heads!) Some subjects and compositions work well with a vertical shot. Red, White, Blue And Black (top) works well with a vertical perspective. Pickup trucks are functional, hard-working, with stuff in the bed — a direct approach works.

I find oblique shots more useful in my aerial photography. Domestic Snow (bottom) retains the peacefulness of a residential area. This peacefulness and the inclusion of other neighboring homes would not have been as successful with a vertical cam-



## photographing natural textures

by ROY LATHAM, CGSD Corporation, Mountain View, California

My company's main business is building simulator systems of the type used for flight simulation, vehicle simulation, entertainment, and virtual reality.

We obtained a contract from the U.S. Army Topographic Engineering Center to prepare a library of texture patterns for simulators. Texture patterns are images used in the computer graphics part of simulators to provide the details on the surfaces of objects. The patterns ultimately have to "tile seamlessly" so that a large surface can be covered by repeating small patterns, without having apparent edges visible at the texture tile boundaries.

There are several ways to make texture patterns. One way is make them up artistically with the aid of various kinds of computer software. We discovered early on that for simulators it is better to derive patterns from photographs of the real subject matter. The photographic images are processed, using custom software we created, to produce texture patterns with accurate colors that also tile seamlessly.

Simulator builders need texture patterns having different scales to match their applications. If a simulator is for training air combat, for example, the patterns on the ground need to cover large areas with relatively low resolution. Higher and higher resolutions are needed for armored vehicles, driver training, and virtual reality systems.

Getting low to medium resolution source material is challenging, but not im-

possible. There are lots of stock aerial photographs available. Getting high resolution material is not too difficult either, because one can simply go out and take pictures of the ground. However, medium resolution material poses a problem, and that is where kite aerial photography comes in.

Much of the source material should be acquired from altitudes between 50 and 200 feet, with the camera pointed straight down. Kite aerial photography is one of the few methods for obtaining photographs that meets this requirement. When the idea of using kites struck, we knew nothing about the equipment or methods needed to carry out the idea.

### HELP FROM THE INTERNET

A search on the Internet turned up Charles Benton's Kite Aerial Photography Home Page. By a fortunate coincidence, he had posted his page only a few weeks before we found it in our Web search, in

*Bell pepper field, photo*



the spring of 1995. He recommended we contact Brooks Leffler, the editor of this magazine.

Brooks provided valuable advice that really got us started. We ended up getting him to build us a complete KAP rig suitable to our requirements. From mid-August through the end of 1995, we have given the rig a lot of use, with excellent results.

The rig includes a Sutton FlowForm 16 stickless kite with a long nylon fabric tail and the camera platform. The camera platform uses a Yashica T4 camera and two Futaba servos. One servo controls pitch [tilt] and the other actuates the shutter. Note that since we are mainly interested in straight down, there was no need for an azimuth [pan] servo. We asked for a pitch control on the grounds that since we would have the kite aloft anyway, it would be irresistible to want to take some more conventional scenic pictures.

The camera platform is carried from the kite line with a cross-type Picavet suspension. This works both to keep the platform level and to resist rotation. We lose

fewer frames to blur than I had supposed. Perhaps fifteen percent are spoiled due to blur.

KITE FLYING: \$165/HR.

An unexpected problem with kite photography is simply getting permission to fly the kite. Private landowners generally do not mind kite photography, but one does have to seek permission if it's necessary to go onto a private access road.

Public spaces like parks are a bigger problem. It turns out that most parks in our area have either total prohibitions on kite flying, or severe restrictions.

Sometimes the prohibitions seem reasonable, other times not. In any case, getting the necessary exemption to the rules is often quite a bureaucratic exercise.

The East Bay Regional Park District runs parks near San Francisco Bay. Duly noting the "commercial purposes" of our kite photography, the Park District offered us a permit for only \$165 per hour. No concerns were expressed whatsoever about the safety of the enterprise, so long as we carry \$2,000,000 in liability insurance (which actually we do, a business necessity). This is all very silly and very tedious.

On the other hand, at Shoreline Park in Mountain View I explained what we wanted to do to the Chief Ranger, who immediately said "Of course, that makes sense" and gave me a permission note. Occasionally, one does find someone who absolutely refuses to give up their common sense. (Paradoxically, Shoreline Park is famous for an incident in which a little girl snagged a kite on a low-flying light aircraft. Despite her father's previous instructions not to let go, she thought better and

• *continued on page 27*

*Bell pepper field, pattern*



## the challenge of another perspective

by MICHAEL HAUGRUND, Uelzen, Germany

Most of my photographs are landscapes, villages and single objects. I don't take snapshots when I'm on tour. More interesting is the close-up view from above—low-level KAP. The trick is to keep nature and buildings within a well-chosen perspective.

Photographing people is not so much interesting for me. But perhaps I can take some pictures of crowds at a festival or so.

With KAP, I'm trying to achieve two things. As a master technician of radio and television: The technical challenge. As an amateur photographer: The other perspective.

My priority in working for and with KAP is to improve the technical state of KAP equipment. Since my beginning in 1985/86 my favorite interest was to build simple, functional, comfortable and secure (!) equipment.

As one of the first German KAPWA-members I got lots of ideas to improve the rigs I saw in the KAPWA-magazine. I experimented and wrote down the results to get others informed. During this timespan lots of technical shortcuts and

new solutions for comfortable KAP have been developed.

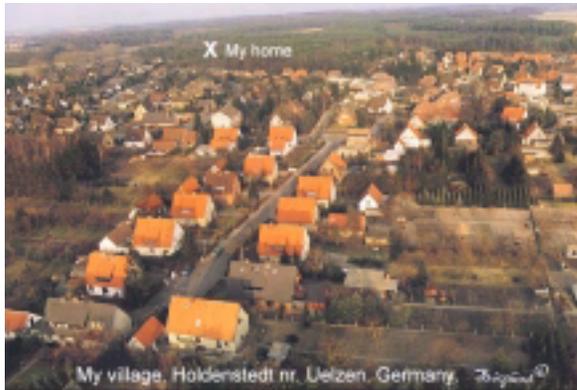
The amateur photographer in me wants to have well-chosen objects, good framing, surprising views. The view-points of photographing people are so widely spread, that I don't want to discuss it here. But let me tell you: A well-framed sharp and colorful photo from a well chosen object is as interesting as a photography taken from sky looking like modern art...

It is a question of personal taste, the personal point of view, I believe.

### LIGHT & WEATHER

I prefer photographically good lighting conditions: sunrise until 10/11 AM (very seldom, because I'm sleeping long) and from 14/15 PM to sunset. Don't take the hard sun during midday.

Wind: calm and steady. In this region (northern Germany) the wind from NW to SW is OK. The best season here is spring, early summer and early autumn. I took some photos in early winter, but that's too cold for me and the lighting



new solutions for comfortable KAP have been developed.

## rise to the occasion

by CRAIG WILSON

My philosophy is not to photograph a place just because I might happen to be there, although that can happen. Rather, I plan, and go to a place because I want to photograph it.

I will make the effort to be there at the best time of day to capture the most creative and flattering light, and to take advantage of any action that takes place there. If I want a shot of people partying on the waterfront, there is no point going there at 10:00 AM on Monday. I would go Friday after work for a photo filled with activity, a photo that makes a statement without having to have a caption (below).

I am always looking for targets to shoot as I drive or bicycle through town. I check the activities listings in the newspapers and refer to tourism calendars to get ideas of events and places that people are drawn to. If a lot of people are interested in an activity like a bicycle rally or a canoe race, then usually there is someone promoting the event that

I put great effort into planning before I go out with my kites to make a photograph.

Before launching a kite, I walk around the site with my camera. I check framing and exposure levels, judge which lens to use and program appropriate camera settings. I also carefully check for hazards such as power lines and fences. I check for little things that could spoil a good photograph, like litter or graffiti, and look for details that will add to, and that should be included in the photograph.

I often study maps and airplane-generated aerial photographs of the site that I want to shoot to help me find open areas and to help give me a mental image of the site from the air.

If I am going to take the trouble to go to a place to make a photograph, then I want to come away with a great photo. An image that not only pleases me but has some potential to be marketed or one that can be used in a slide show or photo exhibition is my goal.



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## in search of diagonal historicals

by **ROB GREEN**, *Newbury, Berks, England*

My favourite KAP subjects would need always to fill the frame with as many areas of interest and detail as possible, for example, houses or groups of buildings, preferably including people to add an element of scale.

The reason I shoot what I shoot is the great sense of achievement of seeing and guiding my equipment during flight and then slowly and gently considering the best directions to shoot and trying to compose shots mentally.

I try to avoid any roads, paths, or fences being parallel with the final frame, and rather try to achieve diagonals, adding depth to a shot. I also try to keep an historical record of buildings destined for demolition or new structures being built. This photo [right] is of the Newbury Rugby Club, taken December 1995 in sub-zero temperature, not long before it was scheduled for demolition.

I am trying to achieve a negative image sharp enough to produce an 18" x 12" colour print. Using the Yashica T3 compact camera does not quite achieve the perfection I am looking for, so I am considering an SLR of light weight and wide angle lens and shutter priority—or maybe I should try medium format?

Using a compact camera in my experience seems to demand good average lighting conditions; that is, sunshine and average shadows. If lighting is poor then the auto shutter/aperture slows down and opens up creating more blurring than usual. In these low light conditions a smoother wind is desirable but is generally not available.

My ultimate aim is to collect the very best images and build a collection of 18"x12" prints for my portfolio, and at all



times be prepared to show interested people and promote the concept of aerial photography by kite.

I feel that after some six or seven years I am still scratching at the surface of this specialized craft. I have recently attended evening classes for photography and sewing, and currently for model engineering to assist me in creating that ultimate camera rig.

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## sedimentary soils & low-flying birds

by **WOLFGANG BIECK**

I started with KAP in 1988 to document geological exposures of sandy soils, produced during the European glacial period of the so-called "Saale-Ice-Age" of northern Europe. The aerial view would help me to show the location, and I prepared dioramas of the soil, sedimented by melted snow and ice about 200,000 years ago.

These geological dioramas I used for natural art-objects in living rooms and art-exhibitions, and for education in school (biology, geography, archaeology, chemistry).

I live in the flatlands of Germany, only 200 km away from the North-Sea and so during the whole year there are good winds to take aerial photos from kites.

My deep love of nature has always led my steps, and my dream to fly like a bird came near without danger for my life when I saw a KAP photo in a German magazine.

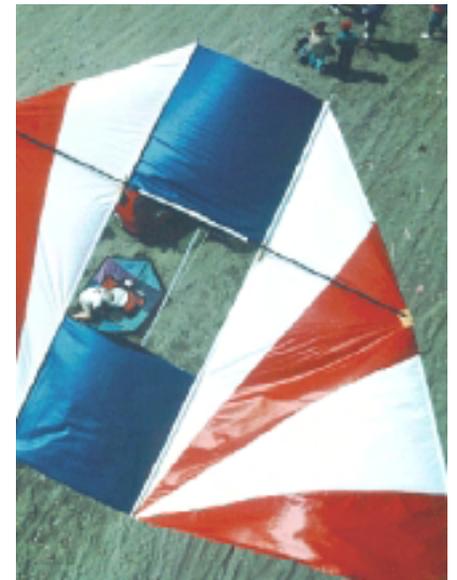
It showed ruins of the desert of Iran and was taken very simply. The photographer used a Jalbert Parafoil and a string-bag stretched with a cake-tin. Inside the string-bag he placed his reflex-camera and shot by self-timer photos from a height of nearly 150 feet. This was the never-forgotten ignition point for me to start with KAP.

Since then nearly 8 years have passed by and I may look back and report of aerial views I prefer. The number of motives [subjects] are too large to be pre-

sented here, but I think I prefer the view birds have when they fly at a height of 15 feet to 200 feet. Remember: When the camera is just 300 feet high, the horizon-line is about 36 km away. Little things become very small when the camera enlarges the distance. So I do like aerial views with the lowest reasonable distance to the object.

On kite meetings I try to use the kites themselves as a motif and I try to imagine that I'm a bird, just landing on the kite's head or looking through the kite whenever possible—or flying over the blooming fields and green forests, just looking on the roofs of villages or houses.

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## familiar subjects—novel view

by CHARLES C. (CRIS) BENTON, Berkeley, California

I find kite aerial photography compelling because it engages familiar subjects from a novel vantage point and in doing so requires the imagination of both photographer and viewer.

I am pursuing three general categories of photography subjects. They are differentiated not only by subject but also by level of skill required.

The first subject category is the natural landscape—parkland, open space, beaches and the like. The majority of my KAP photos fall into this category because they are the easiest to take—just right for a beginner. The natural landscape offers wide open areas, unobstructed winds, and fewer people to worry about.

The images of Pt. Reyes, the Marin Headlands, and the Berkeley Waterfront on my Web page belong to the natural landscape category. When flying in open space I can concentrate on the camera rig and photography while the kite tends to itself.

The second category is the built environment—our architectural fabric of buildings, plazas, and civic space. These generally urban settings represent a greater challenge as flying space is tighter, the lower winds are turbulent, and kite-eating objects (e.g.: trees, spires, power lines) abound.

I think the resulting images are worth the trouble and I aspire to take more images in this category. Over the next few months I will continue to explore this category with the University of California, Berkeley campus as a subject. [below and page 28]

The final, and I believe most challenging, category is the social landscape—images of people engaged in individual or group activity. The placement of KAP rigs above human subjects requires skill and confidence, particularly at the lower altitudes that capture human activity well. As is often the case with greater difficulty comes greater reward.

My sense in viewing the kite aerial photographs of other KAPers is that images portraying people at work and play are particularly engaging.

I'm still working toward competence in this category and have few images to show as yet.



## use cheap gear & take lots of chances

by HENRY JEBE, Douglas, Alaska

I like shooting photos of boats and other over-water shots, but I shoot quite a few over land too. I get the most satisfaction shooting photos that are from more difficult areas, as in situations where it is difficult to get a kite aloft in the first place. In these locations, it is necessary to



pick a good gust of wind and pop the kite up very quickly and high enough to get it above any turbulence near the ground such as trees, buildings or the superstructure of a ship for example.

Some of these places the only way is to send the rig up straight out of your hand; this can be very difficult. It is very

easy when you have the luxury of having enough room to spread out lots of line and tie it down, then wait for a gust and give the kite a push upward. With any luck the kite will shoot up quickly and clear all obstructions. I have had several times when it was necessary to extract my kite from a hemlock or spruce tree; fortunately I haven't torn my kite doing this as yet.

I shoot almost all of my photos by mechanical means rather than with R/C gear. I find satisfaction in getting good results this way. It is easy shooting shots where you are looking right down the line at yourself. It is much more difficult setting everything up before putting the camera aloft properly aimed at something to the side of your location.

With the use of my mechanical rigs and garage-sale cameras, I feel I can take greater chances with my equipment since my potential loss is less of a financial impact on me, and I do take lots of chances.

As to weather conditions, Southeast Alaska is a rain forest. It is generally a fairly wet climate meaning it is overcast a lot, it rains quite a bit and snows in the winter. The days are long in summer and very short in winter. It is nice to have the luxury of sunny weather so shutter speeds will be fast and contrast will be at it's best, but I have to take what I can get.



▲ *Rapeseed Field, Germany, by Michael Haugrund*

▼ *Schooner Restoration by Steve Eisenhauer*



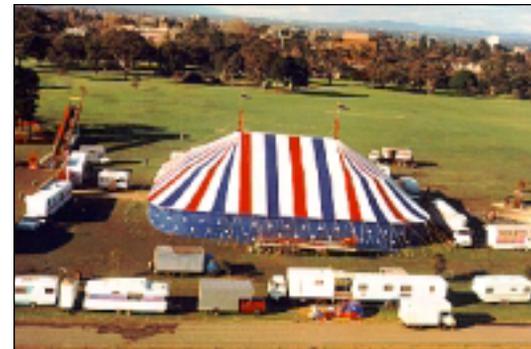
▲ *Alaska Sun by Brooks Leffler*

▼ *Gateway Arch, St. Louis, Missouri, by Randy Bollinger*



## aerial gallery

▼ *Circus Tent, Royal Park, Melbourne, by Arthur Coombs*



▼ *Lost in Space: Casey Wilson on Ice by Craig Wilson*



## kiteography

by WILLIAM S. WARNER, *Center for Soil and Environmental Research, Ås, Norway*

I don't know if anyone has coined the term "kiteography," but it's about time. People who work with maps know that virtually all topographic maps are made from aerial photos; but I suspect few kite photographers realize that they themselves can make topographic maps with their imagery. In fact, you can capture 3-D measurements directly from your photos with amazing accuracy.

The science of making reliable measurements from photographs, photogrammetry, has been around since the camera went airborne. I'm not going to labor on the geometry involved, but I will give you a thumbnail sketch of how it works. The heart of the subject is stereo-photography.

In stereo-photography we emulate our stereoscopic vision by taking two photographs

from different camera positions. Normally, the two adjacent photos, called a stereo-pair or stereomodel, should overlap about 60%. When the photos are aligned and viewed under a stereo-scope, you see a 3-D image.

Fortunately, you don't need a stereoscope to make measurements and maps. In fact, you don't need parallel photos with exactly 60% overlap. The system I'll explain is a PC-based analytical technique that uses numerical solutions to compute heights, areas, line lengths, etc.

In nutshell, this is how it works: Two overlapping photographs are mounted side-by-side on a digitizing tablet. This is sort of like a piece of electronic graph-paper that records the X- and Y- coordinates of any point on the tablet. Put the cursor on a point, hit the cursor button, and coordinates of that point are recorded and stored. The tablet is driven by PC-based software: *MDS* by Carto Instruments, Box 2379, Corvallis, OR.

The first step is to register the photos on the tablet, which simply means digitizing the four corners of each photo. A computer routine matches digitizer coordinates to camera coordi-

nates and determines any stretch or shrinkage of the prints. Photo coordinate accuracy is recorded in microns! (A human hair is about 10 microns.)

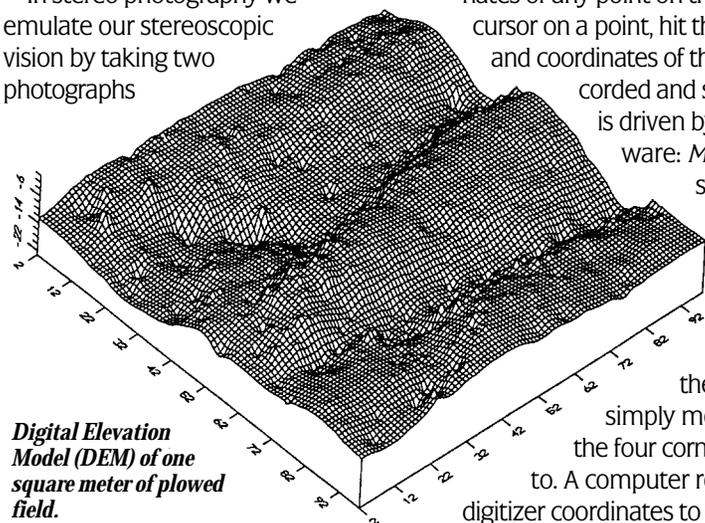
Then you determine how the photos were located relative to each other at the moment of exposure. It's a simple 10-minute task that's more difficult to describe than to actually do. That's followed by levelling and scaling the stereomodel to the ground. To do this you need some known ground coordinates. You can get these from maps; or if its a relatively small ground area, construct your own coordinate system by taking a few measurements in the field. A simple technique is to place an L-shaped rod—with clearly visible measurement marks—on the ground before photography.

Once the photos are oriented to the ground, you can begin collecting measurements. It's an easy task of digitizing an object on the left photo, say a rock, then digitize the same object on the right photo. Each time an object is digitized twice, its planimetric location and height is determined. Pepper your stereo-model with numerous

points (see below) and you have the data to make a topographic map or a digital elevation model (DEM).

These data are exported to another commercial software package, *Surfer*, by Golden Software (809 14th St., Golden, CO.). *Surfer* is compatible with Windows (95, NT and 3.1x). In minutes you can display a shaded relief map in color, print out a topo-map or a DEM on a laser

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**Digital Elevation Model (DEM) of one square meter of plowed field.**



*rise • from page 9*

would like pictures. Whenever you have people doing something, you have great potential for fine images.

I make up a list of "shooting assignments" for myself. The list of targets includes notes as to the preferred time of

day to get the right sun angles, preferred wind direction, other potential shots near the target site, and special events that may take place at the site which may be interesting to include in the photograph.

The list saves me from aimlessly driving around looking for a shot when conditions are good for photography. I can wake up, check the current weather and forecast, and then refer to the list for ideas that correspond to the atmospheric conditions.

I try to avoid going up too high with my camera and getting a view similar to that of an airplane. In this view, people-sized objects are lost, colors blend and fade, shadows are imperceptible, subtle patterns of things like cobblestones are lost, and it takes something the size of a farm field to fill the frame.

Using a kite as a lifter allows me to get my camera to unusual places for unique views of the world. I prefer to stay low enough with my camera to fill the frame with the patterns, geometric



*Olbrich Gardens, Madison, Wisconsin, by Craig Wilson*

shapes, shadows, colors, and textures of the ground.

I also like to include people in my photographs; it gives a sense of scale and more importantly, gives life and action to the image so the viewer feels connected and can relate to the view. If the camera is too high above the ground then these elements are weak.

I want images that puzzle you because you feel that you are viewing the scene from a place you should not be—eavesdropping on the world, looking down on a bridge or pier, or just above a picnic. This view can't be gotten from a ladder, an airplane, or a tall building; it's from a place only a bird or a bug or maybe a kite could be.

Attaching my camera to my kite is for me an adventure. It is a journey, discovering the creativity that lies within my soul and the beauty and harmony that is the world.

*kitography • from page 17*

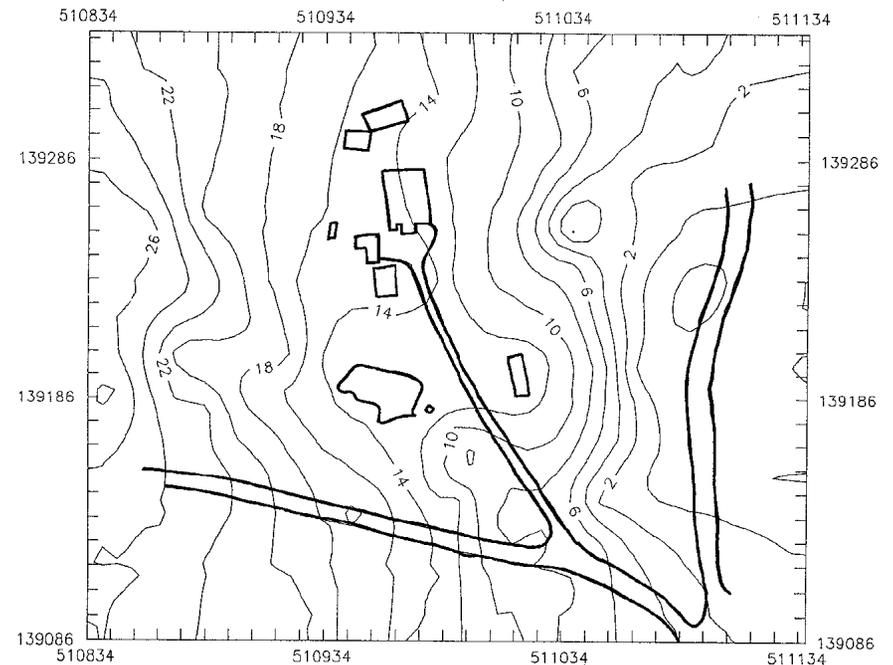
printer, compute volumes, calculate flow direction, etc.

Shown here are two products from a hand-held 35 mm camera. The first example (*page 16*) is a DEM of one square meter of plowed land. I generated it from two photos taken while standing on a step-ladder. Height accuracy is 2 mm! An article detailing the process was recently published by yours truly in *Soil & Tillage Research*, 34 (1995): 187-197.

The second example (*below*) is a topo-map of a farm in Vermont. I photographed the rolling landscape (*see page 17*) late in the afternoon, hence the deep shadows. My platform wasn't a kite,

but a biplane, which shows that visual obstructions, such as cables, do not necessarily erode the quality of photo-measurements. Note the photography is more oblique than vertical. And overlap is produced by taking pictures from convergent angles rather than a parallel flight-line. From an elevation of 500 feet, measurements on the ground were accurate to within one meter.

*Small-Format Aerial Photography*, by Warner, Graham and Read, has just been published by Whittle Publishing Services, Scotland. The fully illustrated, 600-page book devotes a major section to mapping and measuring. Too bad "kitography" wasn't coined before it went to press.



## same place, different image

by STEVE EISENHAUER

Places are like children: every day, every minute, they can wear a different expression.

Their mood varies from cheerful clear sky midday to reflective long-shadowed evening to invigorating snow-covered brightness to somber steel-gray bleakness. Each year they grow and mature. They age.

The sun, sky, vegetation, season, and the presence or absence of people or animals can drastically change an aerial photograph. Some places I've revisited many times, and plan to go back again.

At one place, I've taken over 500 aerial photographs in two years while standing within a 30-foot radius. A large harbor is to the west, a causeway and draw-

years to come.

I often revisit places in search of a common artistic progression: a photographer first



takes pretty pictures, then takes pretty pictures that include interesting people or animals, then includes a symbol recognizable to people of many nationalities and backgrounds.

This symbol may be a person walking alone on the beach, a lighthouse, or the symbolic cliché of all time, a sunset. The symbol may be interpreted in different ways, but it always brings out a strong emotion or feeling. It is the relationship of this symbol to the people, animals and/or pretty picture that determines the photograph's artistic quality.

The top photograph shows the late-evening sun catching me on a picnic table and my daughter at the apex of her swing:



bridge to the north, a resort town to the south and an ocean beach to the east. I hope to take a thousand more photos here in the

nice snapshot, with the playground (a symbol) and people, but the photo's not particularly artistic.

The photograph just below shows a small boat coming back to harbor under the setting sun: the sunset's the symbol, the boat is the people component, but the boat is just not big enough to be readily identified, so



again, the photo's not quite complete.

The photograph at left shows the drawbridge in late evening, with an interesting shadow on the water: nice photo but something's missing.

The photo to the right shows the same scene with the drawbridge up and sailboats passing through: again, nice photo but something's missing.

I'm really looking for a photo with the drawbridge up on a clear evening with interesting shadows, with a line of cars stopped by the drawbridge, and a small pod of boats starting to pass through. Or maybe I'll wait for a frigid winter day when ice has formed on the shoreline and a single fishing

boat is passing through the drawbridge. Or maybe I'll just keep coming here and wait for some unforeseen combination to present itself.

Other reasons I visit this playground are: my kids like it, it's only 2 minutes from my Mom's house where we visit on Sundays, the sea winds are steady, interesting people pass by this beach access point, and I can interact with my kids while flying.

Only after flying here a few times did I begin to see all the photographic possibilities. I now shoot a 36-exposure roll of film each visit, and always leave feeling refreshed and anxious to return. If a remarkable photo doesn't result, there's always next week or next year.

You don't have to travel far to find good aerial photography subjects. Think of how your favorite places change



with the seasons and with the time of day. The wind usually dies by late afternoon, but

• continued on page 22

## US Federal Aviation Regulations summary of sections pertaining to kites

1. No person may operate a kite in a manner that creates a hazard to people or property. §101.7
2. No person may drop an object from a kite which creates a hazard to people or property. §101.7
3. Other regulations apply to any kite that weighs more than five pounds. Such kites may not be flown:
  - within five miles of the boundaries of any airport.
  - more than 500 feet above the surface of the earth.
  - less than 500 feet from the base of any cloud.
  - from an area where the ground visibility is less than three miles. §101.13
4. The FAA requires that notice be given to the nearest Air Traffic Controller facility when kites over five pounds are flown more than 150 feet above the surface of the earth. Notice should include your name and address; size and weight of the kite; date, time and duration of the flight; and height and duration of the planned flight. §101.15
5. When kites of more than five pounds are flown at more than 150 feet above the surface of the earth, visual warnings should be attached to the kite and mooring line, as follows.
  - Between sunset and sunrise, lights should be attached to the kite and line.
  - Between sunrise and sunset, colored streamers or pennants should be attached to the line at intervals of not more than 50 feet. §101.17
6. Waivers from these regulations may be granted. §101.3

### *perspective • continued from page 5*

Oblique angles of 60 to 90 degrees off of horizontal maintain a strong elevated look. Oblique angles of 40 to 60 degrees off of horizontal take on a more formal look.

Low-angled views of 40 degrees or less off horizontal can be useful for exclusion of buildings or vegetation, or for landscapes, as buildings can benefit from a slightly elevated camera platform.

Oblique angles allow flexibility that either ground-level or vertical perspectives can't match, allowing the aerial photog-

rapher more choices for creating traffic-stopping photos. Isn't that what it's all about? —creating a statement—you feel good, and other people notice.

• æ

### *same place • continued from page 21*

on that day you feel it still blowing strong as the sun is sinking, revisit your favorite site and catch the sun on the horizon from 300 feet of elevation.

On a breezy day after a big snowstorm, revisit it again. At the very least, get photographs of the four seasons from the same

### *textures • from page 7*

dropped to the ground unharmed when a row of trees was fast approaching.)

#### THE NEED FOR WIND

The other acute limitation of kite photography is the need for wind. Amazingly, it took a while for this need to sink in. Where we are located, there are good winds virtually every day in the summer. Only when bringing the rig along on business and vacation trips did we suddenly realize how generally unreliable wind conditions could be. The FlowForm 16 is a marvelously well-behaved kite, but it requires roughly 8 mph of wind to carry the rig up to useful altitudes.

When pursuing KAP for sport, kite aerial photographers can simply put away their kites for better days. Alas, when facing business deadlines, there are pressures to produce. The first attempt at solving the problem of low wind was to obtain a large (10') delta-Conyne kite. However, the combination of the awkwardness of trying to travel with a stick-built kite and the overhead of assembly and disassembly time proved the D-C unsuitable.

So we decided to stay stickless, and got a FlowForm 60 kite. The goal was to fly in 4 mph of wind. There is some theory that

says that for half the wind, one ought to have four times the surface area on the kite, so from the 16 square-foot model we went to the 60. The FlowForm people made us a custom kite out of Icarex, a material lighter than nylon, and also a drogue tail to save launch weight. The bigger kite has been a good solution; it flies well in light winds, and has let us capture photos that would have been otherwise impossible.

A kite that large can pull hard enough to pose safety problems. The FlowForm 16 never gave us trouble, even in stiff winds, but the larger kite simply cannot be used in more than light-to-moderate winds.

Fortunately, our company staff is composed of engineering types who are smart enough to take the safety concerns seriously. We always send two people on a photo mission; we also made a home-video training tape to help orient new people to the procedures.

We've come a long way in understanding kite aerial photography. It has worked well for our application. We intend to keep on with the effort, albeit at a slower pace now that our immediate contract has been satisfied. There is much more to learn.

• æ

aerial perspective; the comparison is always interesting.

Ansel Adams and Vincent van Gogh may be squirming in their graves over my musings about artistic progression, but neither of them knew much about kite aerial photography.

It's absolutely necessary to get your kite aloft as much as possible with your camera ready for the right moment. Wait for the sun to break through the clouds, or for those sailboats to maneuver into the right position. You simply can't get kite aerial photographs with your kite and camera on the ground.

• æ

in the summer issue:

## KAP TECHNIQUE

*What techniques do you use for launching, shooting, & retrieval?*

*Do you work alone or with an assistant?*

*What tricks have you discovered to make KAP easier?*

*What special safety measures do you employ?*

**COPY DEADLINE  
MAY 1, 1996**

*challenge • from page 8*

conditions are not as good as they should be.

As a young boy my hobbies were aviation and spacecraft. I built and flew a lot of model aircrafts. And kites, too.

I have flown sometimes in (real) helicopters and small planes. This feeling is great! And I like the bird's view. It is fascinating. I'm out in the nature. I don't pollute nature with my hobby. I'm using the natural element—wind—to work for me.

KAP gives me the possibility to get small puzzle pieces from this view. I stay on the ground and I take picture after picture with a self-developed, self-built rig. Under my control every now and then I capture small, two-dimensional frames of our world in the box. And I can look at them every time I want to. That's all satisfying for me.

Why do I shoot what I shoot? It's my eye in the sky.

• æ

*cheap gear, lots of chances • from page 13*

The wind can be light to nonexistent for several days; these are great opportunities to shoot from a boat underway.

Oftentimes the wind quickly builds from none to 20 or 30 knots requiring a kite that is stable in these conditions.

There are a couple of places I have been trying to photograph for several years. All my tries in these locations have been near disasters and didn't produce very good shots either.

One of my goals in a small boat or canoe is to shoot photos while running the boat to create my own wind on a windless day. There are several narrow inlets that I would like to photograph, mostly to see navigational hazards before taking a larger boat through. Of course it would be helpful to have an assistant to run the boat while I handle the kite and shoot the photos—that's been my biggest problem.

I shoot most of my photos just for fun or to get a better perspective of an area of recreation, an intended project or just for fun.

I was once asked why I do KAP. The person thought photos from the ground had the ability to be dramatic enough, that KAP is a lot of bother. I later thought of asking him if he ever had dreams of flight. I think that is some of what inspires my photo sessions.

The elation I feel when I get good photos under difficult conditions is immense. Good photos that are easy to get are less satisfying I think.

• æ

## creepers & ice screws

by CRAIG WILSON

Some of us live in areas where during the winter months, new kite fields emerge that were not accessible during the summer months.

From the end of December till around the middle of March, I can walk on frozen lakes near my home, which gives me some exciting photo opportunities [see page 15]. With proper clothing and equipment, I am quite comfortable kite flying on near-calm days in winter and my big delta just loves it.

I learned early on that a large kite pulling on you makes it hard to stay put on ice. From my local sporting goods shop, I

purchased a pair of "Creepers" for around \$20. These are sharp spikes that you can strap onto your boots to provide traction. I also found Ice Screws

[left] in a mountaineering store. I paid around \$10 each and they are a must for set up and retrieval of equipment, because you are not going to find anything to tie off to on a frozen lake.

Don't think of winter as a time just to sit around thinking about kites and cameras. Get out there and shoot up some film. Being outside in the cold not only builds character, it builds your portfolio.

• æ

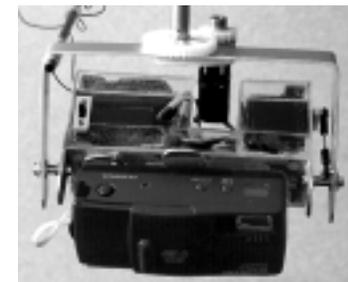


## ralf's very compact hover-rig

by RALF BEUTNAGEL, Braunschweig, Germany

All R/C equipment except the pan servo is installed in a water-resistant plastic box behind the camera: easily dismantled, low wind-resistance.

Camera is either Minolta AF-1 or Rollei Pre-go Xenar. Graupner radio, Graupner C-507 pan servo modified for 360-degree rotation; HiTec HS-300 tilt and horizontal/vertical (hover) servos.



Cameras have been fitted with electronic shutters. Batteries are 4-cell 700 mAh. Suspension is my carbon-style Picavet typ Rendsburg [see æ 1.4].

Weight with Rollei is 865g (30.5 oz); with Minolta 950g.

Smaller, lighter, more functional than my old cradle!

• æ

## aerialletters

### FAR BETTER THAN EXPECTED

I just shot my first roll of film this past weekend from a disposable camera on my 8' Delta Conyne. The wind was rather gusty and I thought I was going to get a lot of blurry shots... but thanks to the wealth of information I had to work from, the pictures came out far better than I expected—very few were blurry (I do need to work on my aim though).

My setup was the 8' D-C, an exhaust donut/o-ring (from "Braking Wind," *æ* 1.4), wood hangers modeled after "brooxes hangup™", a poor man's Picavet (washers & screw eyes soon to be replaced with PeKaBe blocks), and a cradle based on Cris [Benton]'s "low-cost approach" Web pages. I can't wait to get out and shoot the next roll and start refining my setup.

This work stuff between weekends can really spoil all the fun.

Bob Pebly  
Boca Raton, Florida

### THEY COTTON TO LARRY

I just received the latest of **the aerial eye** (2.1). Boy, the articles are constantly getting more interesting, great photos too! The article by Larry Cotton was interesting; I especially liked the bit about pendulum winding rig.

Henry Jebe  
Douglas, Alaska

I got goose bumps reading about Larry Cotton's evolutionary week of KAP [*æ* 2.1]. I especially was impressed with the pendulum/pawl film advance mechanism. Isn't this just the greatest activity anyone ever thought of for experimenting with human creativity and ingenuity?

Craig Wilson  
Madison, Wisconsin

### THE PERFECT RIG

Enjoyed reading the last edition of *æ* very much. It's fun to spend some of the winter dreaming about "the perfect" aerial rig. I'm learning a lot about what to consider from reading all the articles in the AE. I've also been reading a R/C newsgroup to learn a bit about servos and rc controls etc.

There's a lot to learn about; thanks for putting so much good info together for us.

Karen Gustavson  
Santa Barbara, CA

### WARM BREEZE IN WINTER

I have received my subscription and back issues of the magazine. I am very pleased. I have started construction of a remote control cradle. The pictures and ideas are wonderfully helpful. Working on this is a great way to imagine flying a kite and taking pictures on a nice breezy summer day. It is currently 15 degrees F.

Mike Heider  
Shorewood, WI

### NOCH EIN AUG-FLIEGER

Thanks for the [last] issue of **the aerial eye**. Very good, indeed. Thank you for the Eye Fliers list, very helpful to find some contact into the email-world. . . I'm a fan of Picavet, too.... Works well and if you arrange some things, it is as fast and easy to handle as a pendulum. . . I'm working with an Olympus AF-1; my most-used film is negative material. I don't like microvideo-systems because it is too much "killing high tech" for a few more well-chosen aerials.

Congratulations [on] the article on pages 3 and 4 from Steve Eisenhauer: I'm searching (at the moment only in my mind) for the Ultimate Cradle he looks for.

Michael Haugrund  
Uelzen, Germany

### EIGHT MORE FOR A NON-KAPER

Your **aerial eye** is so good, I'm extending my subscription for 8 more issues instead of just 4. Thanks also for including the subscriber directory with the last issue. I found it interesting that many of the people listed, like myself, are not actual aerial photographers. I was surprised how many of your subscribers I know.

Charlie Sotich  
Chicago, Illinois

### FACES WITH NAMES

Many thanks for another great job on **the aerial eye**. The look and feel is very pleasant. Font choice is super. *[Bit-*

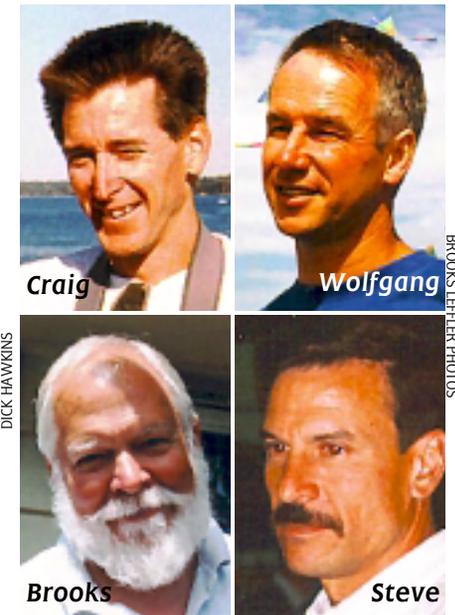
*stream Amerigo for text, Monotype Ellington Bold for headlines —bgl] [Until Acrobat! —bgl 2001]*

Since you included Craig's picture in this issue (1.4), is there any chance of getting pictures of Steve, Brooks, Wolfgang or Anne in any future issues?

Phil Salisbury  
Newport Beach, CA

*Thanks to all for the kind words. Phil's idea is a good one—faceless names are a penalty of the email age. I couldn't find a photo of Anne Rock. She has resigned from the committee, alas. Anne has contributed much to *æ* and to the presence of KAP on the Internet, and we are very appreciative. Come back, Anne, when you can, and meanwhile, send us a pic! —bgl*

• *æ*



DICK HAWKINS

BROOKS/LEFLIER PHOTOS

Craig

Wolfgang

Brooks

Steve