



The Aerial Eye

A quarterly publication by the Aerial Photography Committee
of the American Kitefliers Association

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About The Aerial Eye

This newsletter is produced by the Aerial Photography Committee of the American Kitefliers Association (AKA). It is our goal to publish quarterly, in February, May, August and November. Single copies and subscriptions (including back issues) are available to AKA members and non-members alike.

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Submissions

From the beginning, this publication has depended on two-way communication. It's a clearing house for KAP ideas, with the content for the most part provided by the readers. Submissions should be sent via e-mail or on 3.5" (9cm) floppy disk (Mac or PC). Text should be in ASCII format and diagrams should be in EPS, TIFF, PICT or BMP format. (We'll accept typewritten, neatly printed or hand-drawn works as well.) Photos may be sent on disk or via e-mail in TIFF, BMP or JPEG format, or as negatives, prints or slides. We can also read Kodak PhotoCD. Please scan your pictures at 200 – 300 dpi. We'll keep the prints unless you direct otherwise, but return all negatives, disks, CD's and slides – eventually. Send everything to Craig Wilson or Chuck Henderson at the addresses below.

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HERE WE ARE. THIS BEING MY first issue as editor I thought it might be a good opportunity to introduce myself. I'm the guy that, after a lot of begging, reluctantly came forward to take on the job of editor, and I hope that this works out for us. I have been a kite flier and builder since 1982 and started fooling around with lifting my camera in 1987. Like with many of you, my first camera system was very primitive. My first rig was a simple timer epoxied to the back of an old camera, and held to the kite line with some pieces of bent aluminum. I admired it so much and I was afraid to wreck it, so it sat on the shelf for at least 6 months before I worked up the courage to lift it with a kite. The results of my efforts with that early rig were not very impressive; however, I was motivated to continue because it was a hell of a lot of fun to explore the potential of the combination of kite and camera. Soon I discovered a level of creativity that I had never known to exist within my collected abilities and I began to make progress.

Working through some of the inexpensive and simple camera rigs I refined my skills and started making some good images, which to me, justified building more complicated and expensive radio controlled rigs. In 1990 I built my first radio controlled

rig allowing tilt, pan and shutter control. The very first roll of film was shot with that rig at a college football stadium. Images on that first roll produced a number one selling post card (See pg. 14) for a local card vendor, over a dozen uses in travel brochures and local magazines, and won me the KAPWA prize in 1992. When something that positive happens as a result of your creative efforts it becomes very addicting and very, very rewarding.

My only contact with other KAPers was my membership in the Kite Aerial Photography Worldwide Association (KAPWA) founded by Michel Dusariez in 1985. Their quarterly journal, written mostly by European KAPers, was my only resource to satisfy my curiosity.

Living here in the Midwest, I have from the start felt very isolated from other KAPers. It wasn't until 1994 that I finally met one in person (Brooks at Wildwood). I haven't decided yet whether or not learning KAP alone was indeed a blessing. If anything it forced me to figure KAP out for myself using tools and skills that I possessed rather than to try to copy someone else's efforts. Each step I took I always chose the material, or kite, or thing, that I felt most comfortable with and in that way I have always felt confident and free to create when I fly my camera. Æ

GREETINGS! AS YOUR NEW Production Editor, I'll briefly introduce myself by describing how I came to be involved with kiting in general.

A few years back, during the last few days before Christmas, I was just getting started on choosing gifts for my friends; last minute, as usual.

I've always believed that everyone should get toys for Christmas, no matter how young or old. So I was diligently seeking interesting, fun toys for 'kids' in their 20's and 30's, but not having much success. I began asking store clerks for suggestions: "What kind of toys do you like, and where do you get 'em?" I got more than a few funny looks, but one fellow (bless his playful soul) asked, "Have you tried the kite store?"

"Kites! That's *perfect!*," I shouted, and nearly bowled him over as I hurried out and hustled down the street to find the store. Once inside, I knew I'd found what I was looking for – toys for kids of *all* ages.

I left there with an armful of dual-line sport kites for my friends, a new hobby for myself, and the beginnings of a new friendship with the guy who owns the kite store.

I eagerly pursued my new hobby, initially with an intense focus on dual-line sport kites. To my untrained eye, the so-called 'stunt' kites seemed to offer the most

opportunity for fun and excitement. And that was surely true for a while, until I went to Ocean City, NJ for *The Flyin' o' the Green*, an annual St. Patty's Day related fun fly. There on the beach I met an old-timer named Ed who said to me, "Son, two lines are okay I guess, but most folks have all they can handle with just one."

Of course I wasn't convinced right away, but I did start thinking about a small diamond kite I'd had for some time but had never flown. I took it out, launched it, and promptly got the flying line tangled in powerlines over the boardwalk. I watched, helpless, while the kite continued to fly from it's new 'tether'. Occasionally, it would dive at people on the boardwalk, scattering them all, and then zoom back up, adding another wrap around the powerlines for good measure. I had no idea what to do.

Ed, noticing my predicament, didn't say a word. He just went to his kitebag and pulled out an old, beat up delta, launched and maneuvered it directly over my stricken diamond, then *captured* the diamond beneath the delta's wing and hauled both of them safely back down to earth.

I've been a dedicated, enthusiastic single-line kiteflier ever since.

Kite Aerial Photography? It has single-line kites, photography and radio-control, all rolled into one!

"Say, mister – can I try that?" Æ

I THOUGHT BEFORE ABOUT SENDING in some of my early KAP pictures, but seeing that lighthouses are such a popular subject, decided I really didn't have anything too worthwhile. Then I saw your call in the Fall '98 issue of *Æ* for material from newcomers to the hobby. I definitely fall in that category, so here are some of my better photos from what was about my fourth or fifth roll of KAP film.

As I am a devout lighthouse buff, West Point Lighthouse in Seattle was a natural KAP subject. Owing to its gingerbread charm and accessible setting, West Point is one of Puget Sound's most frequently photographed lighthouses, and is fairly typical of the region's numerous small island lighthouses built around the turn of the century.

My first KAP system has been the *Greens Pendulum Rig*, from the *Into the Wind* catalog. After a couple of rolls of film, I modified the unit with a Picavet suspension using a 7½-inch plywood "X" and the suspension line threaded through small screw-eyes – borrowed from *Brooxes Basic Brownie Box™* (*Æ* 4.2). I have since replaced the screw-eyes with model yacht microblocks and added an antenna/aiming boom. The camera is

the outstanding *Olympus Stylus Epic*, which I operate via shutter-only R/C servo (Futaba S3101) using a 220mAh receiver NiCd. I have been very pleased with the results from this simple, lightweight system, but admit I'm longing for the ease and efficiency of a full R/C HoVer rig. I find Brooks Leffler's *Monopost™ III*, outlined in *Æ* 4.3, very intriguing!

For lift, a *Sutton Flowform 16* has been my kite of choice for KAP-work, but with light wind being the norm in this region, I'm frequently forced to resort to an 11½-foot Double Delta-Conyne.

Like most starting KAPers, I suspect, my earliest attempts would rival spy satellite photos. After several rolls of film it became apparent that every soccer field looks the same through the eye of a wide-angle, point-and-shoot camera 300 feet up!

As I progressed, and KAPing was no longer just an extra-curricular activity while kiteflying at my usual venues, I learned that photos taken from the most modest altitude – that subtle variation in perspective – are often most effective. When compared to "ground" photography, or even other modes of aerial photography, it's the unique "bird's-eye" view that makes KAP so special. *Æ*



Above & Below: The West Point Lighthouse in Seattle, Washington



IN ANY ACTIVITY HAVING TO DO with kites and line, it will be necessary to know a few basic knots. Because we're dealing with what the old salts call "small stuff" rather than large heavy ropes, some of the basic knots we may have learned long ago aren't too useful, whereas a few of the more esoteric ones fill our needs exactly. Here are the ones I use most:

The Loop Knot. This one is very simple. It's just an overhand knot tied in a "bight", or loop of line. This one is just fine for such things as bridle knots on kites because unlike the overhand knot it won't come loose. It's not as easy to untie after tension as the Bowline (see below).

The Lark's Head or Cow Hitch. Everybody already knows this one, but maybe without these names. Stick a loop of line through a ring and pull the loop back down over the ring. It's good for adjustable bridles, although it can slip, especially if the line has a hard finish.

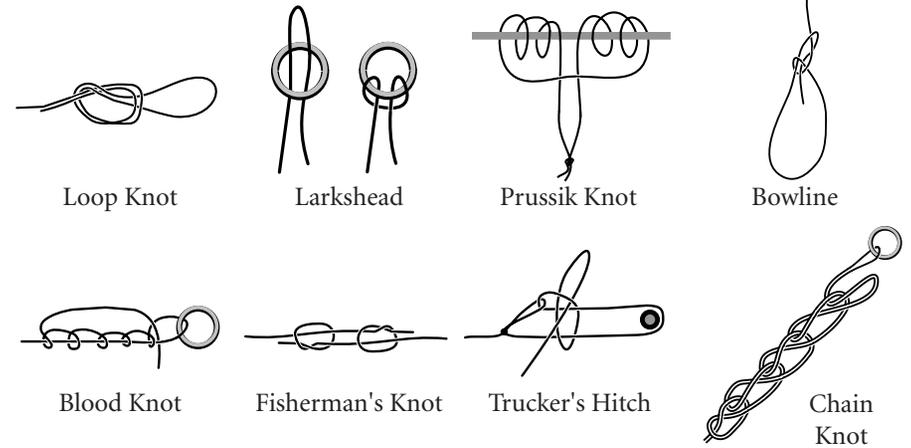
The Prussik Knot. This is just a Lark's Head times three, and can be used for bridle rings if you don't want it to slip. Most of the German KAPers use it in a knotted loop of light line to hang their Picavet suspensions from the kite line (where I would use a *brooxes hangup*TM). It is most effective where the differential between line sizes is great; that is, where the loop is made of much

lighter line than the flying line to which it is attached.

The Bowline (pronounced bolin). I've included this one just on general principles, because it's useful in lots of situations. Everybody should know this knot for the times when you need a secure loop but may not have a bight to tie it in, as with the Loop Knot, or where you want to untie it after it's been under tension. It's much better than the Loop Knot when that is the case.

The Fisherman's Knot. This one is very useful for repairing broken or cut kite line. Melt the broken ends with a match if possible, then simply tie an overhand knot in each broken end, over the "standing part" of the opposite line. Then pull tight. It is most secure if you take care to have the straight lines pass through the loops on the same side of each bight so they're flat and parallel.

The Blood Knot. I'm not sure of this name – maybe it's the Half Blood Knot or something else – but it's the best way to attach a snap swivel to the end of your flying line. Thread a swivel on the line, make a loop around your finger next to the swivel, twist the loop five or six times, and put the end through the loop next to the ring. Slide the knot toward the swivel and pull tight several times. This one too is easy to untie after tension, and doesn't weaken the line as much as many knots do.



The Trucker's Hitch. This knot is very useful when you need to bow a spar or pull a line into tension, because it doubles your mechanical advantage. (It gets its name because it's very good for lashing a load to a truck.) Secure one end of the line to one end of the spar. Then tie a Loop Knot in the line several inches from where you intend the other end of the spar to be after it has been bowed. Loop the free end around that end of the spar in such a way that it will slide freely while staying attached to the spar, and pass the free end back through the Loop Knot. Pull the tension into the line, and secure the bow with a slip knot around both parts of the bight.

The Chain Knot. This is the one to use to stow complicated bridles (such as on foils or rokkakus) to keep them from snarling; it's also the best

choice to keep the eight lines of a Picavet suspension under control after your rig has been removed from the kite line. Start with a simple slip knot, and then pull a loop through the slip knot's loop, and then another through that loop, and so on until the line is used up. I prefer to start closest to the kite or the Picavet X and work out. When rigging the kite or Picavet, simply pull on the loose end and it will all come out. Take care, though, to keep the end from going through the last loop the wrong way or you'll have to untie the whole thing a loop at a time. For this reason, I prefer to secure the end loop to the rings of my hangups so it doesn't go astray.

These are the knots I've seen in use among kite fliers and KAPers. If you've got favorites of your own, let us hear about them. Æ

THIS ARTICLE DESCRIBES THE conversion of a "Point & Shoot" camera to remote operation and an intervalometer (timer) to fire the shutter at a preset interval, in this case every 30 seconds.

The camera I chose to convert was the Nikon "One Touch 100." This camera is very available and easy to work on, but these suggestions can probably be made to work on many similar "Point & Shoot" cameras. To convert the camera, it is necessary to open the camera and replace the normal shutter release button with a cable connecting the camera to an intervalometer that will operate it automatically.

To open the camera, proceed as follows:

1. Remove the battery and discharge the flash. If the flash stays charged it can give you a nasty shock even though the battery is out of the camera.

2. Remove the three screws from the bottom (note that the long one goes in the strap end of the camera).

3. Open the film door and remove two screws, one in the film take up side and a longer one on the film supply side.

4. Loosen the two screws on the flash end of the camera. Pull the bottom loose and peel the bottom and front up over the top of the camera. Be careful of small parts (like the film counter window) that may drop out.

When you get into the camera locate the contacts under the shutter button (fig 1).

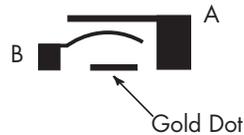
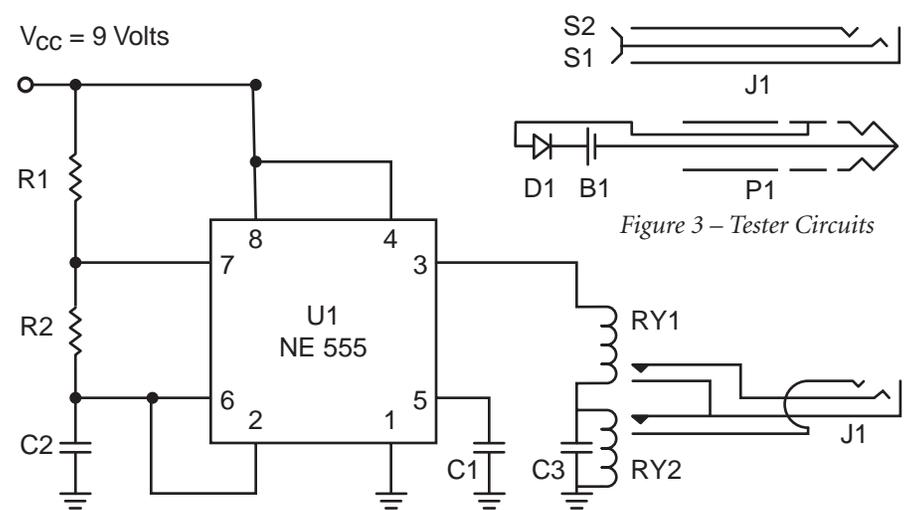


Fig. 1 – Shutter Button Contacts

They are two flat springs mounted over a large gold dot on the circuit board. When the photographer pushes the shutter button down, the first two springs (A & B) make contact. This activates the focus and exposure electronics. As the button continues down, these two springs are forced into contact with the gold dot which fires the camera. Cut the two springs off and solder a separate wire to each of the spring bases and another one to the gold dot. Next, remove the shutter button by squeezing the two side rods in and pushing it off. Drill out the shutter button center hole to 3/16 for the shutter wires. Push the wires through the hole where the shutter button was and put the camera back together. After closing the camera, make the following connections:

1. The top spring wire (from A) to the sleeve of a stereo mini-plug.
 2. The middle spring wire (from B) to the ring.
 3. The gold dot wire to the tip.
- Finally, drill two small holes in the



- R1, R2 = 220KΩ
C1 = .01μ
C2 = 20μ
C3 = 450μ
D1 LED = RS # 276-307

- RY1, RY2 TTL Relays = RS # 275-232
U1 NE 555 = RS # 276-1732
J1 Mini Stereo Jack = RS # 274-249
P1 Mini Stereo Plug = RS # 274-284
B1 Battery = 1.5V

Figure 2 – Intervalometer schematic & parts list. Part Numbers are from Radio Shack.

camera top for a loop of wire to be twisted down on the shutter wires for strain relief.

The intervalometer (Fig 2) uses an NE555 timer (RS#276-1732) integrated circuit which fires two 5 Volt TTL type reed relays (RS#275-232) every 30 seconds to operate the camera. Relay RY1 has the same effect as the shutter button in that it closes the two flat springs and allows the camera to focus and make a light reading. When relay RY2 closes, delayed by the time necessary to charge C3, it

connects the two springs to the gold dot like the shutter button used to do and releases the shutter to make the exposure.

The NE555 timer integrated circuit is programmed by R1,R2, and C2. Increasing the values of these components will increase the time interval between photographs. Changing the ratio of R1 to R2 will change the on/off ratio of the NE555 output. The on/off ratio is approximately 50/50 now which works well.

(See "Conversion," on Page 26)

THIS ISN'T EXACTLY AN ARTICLE about first KAP experiences, but one about mistakes. In an effort to save the newcomer from common beginner's mistakes, I've compiled a list of my own mishaps. Hopefully, you'll learn something from them or at least have a laugh at my expense.

The Bridle Failure! The standard bridle on a Sutton 16 (at least on mine) brings the 3 bridle lines together and ties off on a stainless ring. I left the ring in place, never thought much of it and used a clip on the end of my kite line to attach to the ring.

At AKA in Wildwood of '97, in a brisk NW wind, I was setting up for a KAP session of one of the boardwalk amusement piers. I was about 50 yards from the surf and had tied off my Sutton 16 on a piling in the sand.

Just as I was about to attach the camera cradle to the line, it suddenly fell limp to the ground. I looked up in horror to see the Sutton 16 collapsing and falling towards the surf. I sprinted off in pursuit and luckily retrieved the kite at water's edge without getting too wet and unofficially breaking the 100m Olympic record in the process.

An inspection of all equipment revealed that the Sutton bridle lines had pulled free from the ring – nothing had broken, the bridle “knot” on the O-ring just slipped free.

Lesson: Eliminate this potential point of failure by removing the O-ring or clip from the bridle of your kite and use a knot instead. Larkshedd your kite line to the bridle knot.

The Collapsing Winder! Do you use a common wooden winder that cranks the line around a wooden core with round discs on either side of the core to keep line on the winder core? If so, do you wind the kite down under tension? This used to be my standard operating procedure until disaster struck.

What happens is that over time, the tension of the line being tightly wound around the core has to release itself somewhere. Since the core is usually solid wood, this means that the crushing force of the line tension is redirected sideways and the discs on either side of the core finally give way and pop off the core.

Murphy's law dictates that this will occur when you have several hundred feet of line and a camera out in a strong wind. Once the sides pop, you can give up on winding since the discs will act as a brake against the frame of the winder. Attempting to wind any more line only freezes up the winder even more.

Not only do you have the problem of stowing the rest of the line, but when you later attempt to transfer the line to another spool or winder, it is likely to become a tangled rats nest

as the coils fall off the crushed winder.

Lesson: If possible, always walk down the kite and then wind the line in free of tension. Virtually all spools, winders & reels are subject to some type of failure if line is continuously wound in under tension.

Jammed! Early on when I was still using a de-thermalizing timer, I was flying in particularly tight quarters over the Intracoastal Waterway one day. I took the time to make sure the kite was flying smoothly over the water and then set about to attach the cradle and launch the camera.

I set the timer and spooled out the line waiting for the telltale pop of the timer triggering the shutter. Well, there was no pop and when I wound down the camera, I discovered that the timer was jammed. Lacking the tools to perform a field repair on the tiny internals of the timer, the whole session came to a screeching halt.

Lesson: Always inspect your equipment to make sure it is in proper working order before leaving home and recheck it again as you deploy in the field.

The Sailboat Mast Snag! While reeling the kite in, its easy to get complacent and not pay close attention to the kite itself - especially at the beach where there are plenty of distractions. One of the local beaches has a long row of Hobie Cat sailboats lined up along the dune. After a KAP shoot

of these boats, I was reeling in my Sutton 16 & its drogue tail and not paying much attention to the kite. Of course, Murphy and his laws were paying very close attention and decided to humiliate me by snagging the drogue lines on top of one of the Hobie masts. All the pulling, maneuvering and tugging in the world wouldn't free the drogue or break its lines, so I had to recruit a few volunteers to help pull the Hobie out & turn it on its side to free the kite.

Lesson: Always pay attention to your kite at all times and always walk down the kite if possible. Consider using a lighter weight line to attach your drogue tail, just in case.

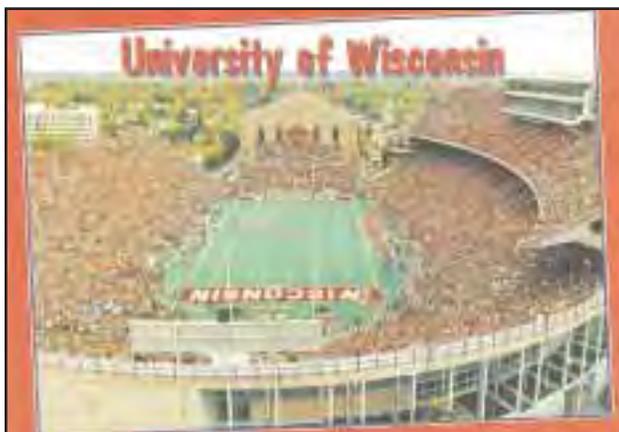
Anchors Aweigh! Here's a particularly embarrassing (and dangerous) stunt to pull in public. Since I usually fly solo, when it comes time to walk down the kite, I need to anchor it first.

Well (and I'm sure you can see this one coming), I was at Castillo de San Marcos (an old fort) in St. Augustine, FL when my anchoring skills provided ample entertainment for the tourist crowds.

I normally carry a length of heavy line with a carabiner to tie off my winder when necessary. On this occasion, a nice, sturdy tree was my anchor. I wrapped the anchor line around the tree, through the winder and hooked on the carabiner.

(See “Oops!,” on Page 26)

Aerial Gallery



Postcard
Craig Wilson



World On A String
Masami Nakajima



Yachts at Pier
Christian Becot



Bikes
Carl Hanson



Capetown Harbor
Glen Thomas



Bodie Island Light
Al Johnson

How High is My Rig?

Frank Louwers
Sleidinge, Belgium

IT IS ALWAYS INTERESTING TO KNOW the height of our camera and marking the line is a good first step. There are tables and formulas giving the height for a certain catenary length, but it always involves measuring or estimating an initial angle. So line length is only a crude measure.

Casio (and probably some other brands) have watches with an altimeter built in! They usually have a recording mode where they can store the altitude at given intervals (like every 15 minutes) and also remember the maximum altitude.

I have sent up such a watch with the camera and it works well. The drawback is that you do not have an altitude reading at the precise moment you trip the shutter, but let's not be too difficult...

Then again, Futaba Robbe sells something called a "Bordcomputer". It weighs 34 grams and is connected to a free channel on the receiver. It will accept various sensors, and one of them is a height sensor!

It weighs 16 grams. Whenever you activate the channel switch on the transmitter the tiny computer stores the values from the attached sensors. If a height sensor is attached, 40 values can be stored! You can plug this system into the same channel as the shutter trigger with a Y-connector, calibrate the sensor to height 0 on the ground and send the rig aloft.

Every picture taken now gets its height stored in the small computer. When the rig is hauled in, you can read out the stored values on the LCD of the device. The precision of the system is about 2-5 meter! Æ

Cabo Saõ Vicente, Portugal by Frank Louwers



KAP at Fort Worden

Brooks Leffler
Pacific Grove, California

BUILDING KAPERS WILL HAVE A chance to build and fly their own radio-controlled rigs at this year's Fort Worden Kitemakers Conference, March 19-21, in Port Townsend, Washington.

Participants will assemble kits designed to accommodate a variety of point-&-shoot cameras, using two-channel AM radio systems. Cradles will be made of aluminum and will allow either pan/shutter or tilt/shutter controls. A simple Picavet suspension will be included.

There will be two sessions devoted to rig-building; target assembly time is four hours. Class size will be limited to ten for each session. The kit price will be \$75.00 including radio; you provide the camera and necessary hand tools. (Unless I burn out building the kits for the conference, I will offer similar kits for sale in the spring for a bit more money; more about that later.)

The Fort Worden conference, now in its 16th year, is one of the most venerable winter kite retreats, attracting more than 100 eager kitemakers

from all over the country. This year, no less than 25 talented instructors from several countries will teach construction of contemporary and traditional kite designs.

The conference is held at a former army base at the entrance to Puget Sound; the film *An Officer and a Gentleman* was filmed here.

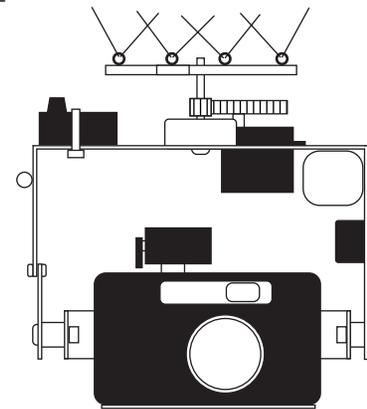
Accommodations are modest, with small private rooms and shared baths; meals are, as they say, institutional.

You must bring your own bedding.

For further information and registration costs, contact Bob Alford at (425) 888-2812 or Suzanne Sadow at (206) 624-6886 days, or email your postal address to:

**information@
ftwrndkitemakers.org**

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KAP in Poland

James Aber
Emporia, Kansas

BY PROFESSION, I AM A GEOSCIENCE professor with special interest in glaciation and glacial landforms. I have conducted field work on glaciation in many parts of the United States, Canada, Scandinavia, Poland and elsewhere.

So, I began to think of utilizing KAP for documenting glacial landscapes in some of these regions. My first successful KAP on the international stage was in Slovakia in 1997 (*Æ* 4.1, p. 16) and Norway in 1998, while attending scientific conferences. In these ventures, I carried only the most essential gear for my manual KAP rig, all of which can fit into one medium-sized backpack or suitcase. Successful results led me to plan a more ambitious KAP program in Poland utilizing the radio-controlled KAP rig built for me by Brooks Leffler.

I have considerable prior experience in Poland, having lived there for half a year during a sabbatical in 1993. In spite of my familiarity with Polish language and culture, I knew I would need local help to carry out a full-blown KAP venture. Early in 1998, I contacted colleagues at the Polish Geological Institute in Warszawa (Warsaw), Poland, in connection with a scientific conference that I was helping to organize and would attend in September (see GAGE meeting URL). Darek Galązka agreed to be my assistant in order to

learn the methods of kite aerial photography. Darek is a doctoral student in geology at the University of Warsaw and holds a research position at the Polish Geological Institute (PGI). Over the summer, we began planning our KAP venture in detail. I reserved a small rental car and prepared kite equipment. Darek made arrangements for local accommodations and support. We agreed to focus our KAP field work in east-central and northern Poland—regions with excellent glacial and coastal landscapes (Fig. 1).



Figure 1. Sketch map of Poland, showing major cities and numbered KAP field sites: 1. Chłapowo, 2. Władysławowo, 3. Milejewo, 4. Mława, and 5. Mrozy. Surrounding countries include Russia (RUS), Lithuania (LT), Byelarus (BY), the Ukraine (UA), Slovakia (SK), the Czech Republic (CZ), and Germany (to the west).

Most of the KAP equipment was transported in a padded *Rubbermaid* storage container, which proved to be an excellent means to protect equipment from the ravages of airline baggage handling. Long (rigid) kites went in a padded “rifle” case, and I took my personal effects in a carry-on bag.

When I arrived at the Warszawa airport on Sept. 19th, 1998, the rifle case was missing. It was finally located in the baggage area. The rifle case raised some concern at the customs desk; however, upon showing the *latawiec* (kite in Polish), all equipment was cleared for entry. Darek met me at the airport and drove us to his home in a village some distance east of Warszawa. The name of his village, Barcząca, refers to a wild bee hive, similar to Barcelona, Spain.



Figure 2. Village of Mrozy, east-central Poland. Many of the residents in this village commute via train to work in Warszawa. Photo date 9/98.

The next day, after getting a good night's sleep to overcome jetlag and waiting for early-morning clouds/fog to clear, we acquired our first successful KAP at a soccer (football) field in the nearby village of Mrozy (see Fig. 1, site 5).

News of our activities spread quickly and we gathered a group of interested spectators. We flew a large 13-foot Delta-Conyne kite in relatively light wind (10-15 mph). Tall trees surrounded three sides of the soccer field, but fortunately the open end of the field was in the upwind direction, so there was enough breeze at ground level to lift the KAP rig above the trees. We took a series of panoramic shots of the village and surroundings in order to test operation of the radio-controlled KAP rig (Fig. 2). (Continued on next page)

Following this, I took off for a week to attend geological conferences at Poznań and in Warszawa. In the mean time, Darek had the Mrozy film developed; the color slides turned out quite good, as usual with the *Olympus Stylus Epic* camera (Leffler 1997). We met again the next week in Warszawa and rejoined our efforts to collect KAP at various sites in northern Poland.

The main portion of our KAP activities was centered in the Gdańsk Bay and Baltic Sea coastal region of northern Poland. We drove a rental car from Warszawa to the PGI branch office at Sopot (near Gdańsk), where we had accommodations for the week.

Now for the uninitiated, driving a vehicle in Poland is quite an experience. Under the Communist regime, there were very few cars or drivers in the country. Also good road maps were not available to the public. While in Poznań, I had purchased a new, detailed road atlas for Poland. This atlas proved invaluable for navigating the country lanes, for which road signs are often inadequate.

Since Poland achieved independence in 1989, the number of cars and drivers has increased many times over, but highway improvements are few and far between. The result is a dangerous mix of antiquated roads, numerous vehicles, and many inexperienced drivers. Pedestrians, bicy-

clists, and horse-drawn wagons share the two-lane highways with old diesel buses, slow-moving cargo vans, big trucks, BMWs, and other high-performance cars. We had no difficulty in our small Ford rental car. However, the wheels/tires were really too small for the rough roads; we lost one wheelcover, but there was no charge for it when we returned the car.

Our first couple of days in the Gdańsk-Elbląg region showed us the raw side of Baltic autumn weather with cloudy/rainy skies and a strong north wind off the sea. We spent most of our time scouting sites for later KAP work. We attempted some KAP under heavy cloud cover using a manual rig, in which the *Samsung* camera is triggered by an intervalometer. We obtained fair success in spite of the poor light. On the third day, we woke to partly sunny sky with continued strong northerly wind. We drove directly to the northern coast at Władysławowo, where we conducted KAP with the radio-controlled rig at two sites (see Fig. 1, sites 1-2).

Władysławowo is located at the base of Hel Peninsula, a long sand spit that extends partway across Gdańsk Bay. This region is very popular for tourism during the summer, but few tourists remained at the beginning of October.

This region also is known for its

strong winds, as marked by modern wind turbines nearby. The day we visited was no exception—northeasterly wind blew off the sea at 25-30 mph. We utilized our smallest kite, a *Sutton Flowform 8*, to lift the KAP rig. Even with such a small kite, we had our hands full controlling the equipment, so we put out only about 500 feet (150 m) of line, which is half the normal length used. The strong wind pushed the camera rig well off center, so many of the pictures were tilted. Nonetheless, we were pleased with the sharp quality of most pictures (Fig. 3).

The most serious problems working on the beach at Władysławowo

were blowing fine sand and salt spray, which quickly covered and invaded all exposed equipment and clothing.

Our final day of field work proved to be ideal for KAP—completely clear sky with moderate wind and temperature. We packed up to head back toward Warszawa. On the way, we stopped at Milejewo (see Fig. 1, site 3) and collected KAP of the agricultural countryside. This region, near the Russian border, is a glacial upland that stands nearly 200 m (650 feet) above sea level (Aber and Ruszczyńska-Szenajch 1997). It's one of the most beautiful and largely unspoiled parts of the Polish Baltic region. (*Continued next page*)



Figure 3. Władysławowo, northern Poland. Agricultural fields occupy a drained marsh area on the south side of Hel Peninsula. Part of the city is situated on higher land in the background. Photo date 10/98.



Figure 4. Agricultural landscape around the village of Milejewo, which is visible in the center background. Note intricate mosaic of small agricultural fields. Near Elbląg, northern Poland. Photo date 10/98.

We flew a large *Sutton Flowform 30* kite on a northeast wind at 5-7 mph. The resulting pictures revealed the typical patchwork pattern of small fields surrounding country villages (see Fig. 4).

As we drove south toward Warszawa, we paused near Mława in the afternoon (see Fig. 1, site 4). The good weather was holding, although wind had increased to around 15 mph and clouds were beginning to move in from the south. Mława is the site of a well-marked glacial end moraine, which consists of undulating hills and depressions. It makes a strong contrast with the flat lowland topography to the south. This region is the area of Darek's geological

research. We quickly located a fallow field from which to launch the *Sutton Flowform 16* kite. We found that cool temperature (40°F or 5°C) had drained power from the ultralight batteries on the radio-controlled KAP rig, so we switched to the manual rig. The photographs depicted the morainic hills and adjacent lowland (Fig. 5). As we drove southward from Mława, we encountered more and more clouds. The day ended in Warszawa with the onset of blustery north wind and rain.

To the best of our knowledge, this was the first systematic attempt to practice kite aerial photography in Poland. We were quite pleased with the initial results, which suggest that



Figure 5. View southeast toward the city of Mława, north-central Poland. The flat agricultural area in foreground is part of the central lowland district; forested hills in left background mark the end moraine. Photo date 10/98.

KAP may be utilized in different situations to acquire low-height, high-resolution imagery for various applications. The modest cost of KAP is also appealing in a country with limited financial resources for scientific research. Based on our experience, we offer the following suggestions, which may apply to other regions besides Poland.

- Weather varies on daily and regional bases. Effective KAP must be “scheduled” in such a way that fair weather conditions can be utilized when and where available. In other words, the KAP equipment should always be ready for use, and the KAPer should be prepared to alter his/her work schedule accordingly.

- Preliminary scouting of possible KAP sites is an effective way to utilize periods of unfavorable weather. Knowing where to go and how to set up quickly make for more efficient work when good weather comes.

- There is *no* single kite or camera rig that is best for KAP. A suite of large and small kites, both airfoils and rigid types, is recommended to take advantage of a wide range of flying conditions and various kinds of KAP rigs.

- Although forest and other obstacles are common, good KAP sites can be found almost everywhere in Poland. Fallow fields, beaches, parks, and other open areas are suitable for KAP. *(Continued next page)*

Electronic Additions

In general, “trespass” regulations are less strict in Poland than in the United States; however, access restrictions do apply in certain national parks, around military areas, etc.

Our seasonal timing for KAP in Poland turned out to be just right. We were able to take advantage of the last days of *babie lato* (Indian summer), when autumn tree color is optimum. The dismal rain at the end of our KAP venture signaled the beginning of harshly cold fall weather (while North America enjoyed an extended warm autumn) of a La Niña year. The return flight to the United States proved routine, and the rifle case went through U.S. customs without even a cursory look! By the way, always take film in carry-on bags; never put film in checked

luggage, which is subject to “hard” x-rays during inspection.

For the kite flyer who wishes some adventure, we can recommend Poland and Slovakia. The Baltic coast is especially favorable during the summer and early autumn months, as is the montane region of southern Poland and Slovakia. These areas are not for timid travellers, however. English is spoken by very few people, beyond the major tourist centers, and even there don’t count on it (German is more common). The levels of accommodation, food, and travel service are quite variable, and cultural expectations are often rather different from the United States or western Europe. For the kite enthusiast, however, Poland and Slovakia, are well worth the extra effort to visit, and the cost is reasonable. Æ

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I THINK THE MOST SENSIBLE addition to our rigs is a device that counts automatically the pictures taken. In the heat of the moment I always forget how many I took, and bringing down a camera thinking the film is full to find out that there are still a few frames left is silly. It can be outright terrible to find out that those fantastic last pictures can't be printed because there simply were no frames left anymore to be exposed, and of course you only discover that the next day at the photo shop...

I discovered an electronic counter at Radio Shack (P/N 277-302, or RSU 1024528) that solved this problem, as it automatically counted one up whenever I pushed the stick that triggered the shutter on the camera! I mounted this LCD counter in the transmitter top where it was always visible.

I connected the leads to a microswitch that I fixed inside the transmitter in such a way that it made contact by the trigger stick at the same moment as the camera shutter was triggered. I also included a tiny buzzer so I would have an audible control, and I mounted a three-position center-off flip switch.

Cabling was such that pushing the switch one way would reset the counter to zero, and pushing it the other way would just add one to whatever number was in the display.

This is handy when your camera counter is not at zero when you start your KAP session. The counter is powered by an AA sized battery.

I have now found an even smaller counter that fits my new transmitter which has less free space! It can also be found at Radio shack (P/N RSU 11907219). It is powered by a tiny lithium button and costs \$12.99. I mounted it in the same way with a microswitch, etc... as described above.

Another device which I found useful is a small part that mounts between the receiver and a servo lead. It is a tiny circuit that slows down the turning speed of a servo (there is an adjustable screw on it). This is recommended for the 360° panning servo if you use just a normal, unmodified servo with 2 gears on it.

The ratio will be about 1:4 or 1:5 with the larger gear on the servo and the smaller gear on the suspension axis. This means that the rig will turn very fast, generating quite some inertia that can damage the internal gears of the pan servo. Slowing down the speed eliminates this!

I have found this device in the European Futaba/Robbe catalog but I suppose it must be available in the USA as well. (*Tower Hobbies has a device called McDaniel Go Slow model 875J, Tower's PN MCDM3876, for \$34.99. — bgl*) Æ

The intervalometer was tested with a battery reading about 8.5 volts and it works well. Capacitor C1, a 01 μ disc ceramic, is a noise reduction bypass. Raising the value of C3 will increase the closing delay of relay RY2.

To operate the instrument, place a roll of film in the camera. Close the camera door and plug the camera into the intervalometer. First turn on the power to the camera, and then the intervalometer. The NE555 will close RY1 and RY2 and this will load the film. In about 30 secs the camera will fire taking the first picture. Firing will continue every 30 seconds to the end of the film, when the camera will automatically rewind. If the camera is left on, the intervalometer will

continue to trigger the shutter and the counter will continue to advance.

Figure 3 shows the circuit of a simple tester that can be built in a mini-box that can be used to check operation of camera and intervalometer in the field. Plug your camera into J1 and close S1. This should cause the camera “ready” light to come on. Hold S1 and push S2. This will fire the shutter, and can be used to take a picture. LED D1 is rated for 1.7 volts but will work with a 1.5 volt battery. Plug P1 into the intervalometer. If everything is OK, D1 will light for about 15 secs and then turn off for 15 secs and repeat. This indicates that the intervalometer is working. Æ

Well, at least that was my plan, when something slipped and suddenly the winder was bouncing across the open lawn towards the bay. Another sprint towards the water with a diving tackle (or two) until I finally snagged the winder provided more than enough humiliation for the day.

Fortunately, I didn’t have the camera cradle on the line (I was maneuvering the kite between rolls of film), otherwise, it could have been quite a disaster as the cradle came crashing down. The National Park Service probably isn’t too keen on the idea of a camera crashing from the sky into a national monument.

Lesson: If possible, have an assistant hold the line when you need to walk down the kite. If none are available, make sure your anchor point is a good one.

Well, enough about my mistakes. Hopefully, these lessons help newcomers avoid making some common mistakes and gives the veterans a chuckle as they recall similar incidents of their own.

Luckily, in my case, I can safely say that despite these mishaps, I’ve never crashed or lost a camera and I’ve never caused any physical damage or bodily harm. Hopefully, Mr. Murphy doesn’t read the *Aerial Eye*. Æ

LET’S HAVE A ROUND OF APPLAUSE for Brooks Leffler. That’s right, a big round of applause...

During the past few months as Craig and I have worked together on our first issue of this magazine, I’ve developed a keen appreciation for Brooks’ efforts as Editor-in-Chief. Taking over his chores has been *much* more difficult and time-consuming than I thought it would be.

Having gained this sudden appreciation for the level of skill involved in publishing *The Aerial Eye*, I can only hope that my efforts will achieve the same level of consistent high quality that Brooks has taught us all to take for granted.

And speaking of ‘consistent,’ you’ve probably noticed that this issue is – well, a few months late! (Did I mention that this was more work than I thought?) Brooks, Craig and I have discussed the situation and determined that the best way to get back on-schedule is to skip the Winter issue. We’ll make this issue (Spring) the first issue of 1999 and number it Æ 5.1. There will be two more issues this year, Æ 5.2 (Summer) and Æ 5.3 (Fall).

All subscriptions that would expire with Æ 5.4 or later will be extended by one issue.

For now though, our first issue is finally in your hands. We hope you enjoy it, and look forward to hearing from you.

Chuck Henderson

ONE OF THE REASONS THIS ISSUE is a bit late is that Chuck and I have had a lot to absorb to get up to speed producing this journal. After setting a deadline and receiving only a few submissions we had to search through a file of older material that had not made it into past issues. Not that there aren’t good, substantive stories in the old material we got from Brooks, but we had hoped to have more current material to select from to make as good a first impression as possible.

For the last three issues both Brooks and I have asked, and now I am *begging* you to help us continue this journal by submitting something for publication. This will be the last time I grovel for material! **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.**

I am very certain that the topic of “Great KAP Adventure” for the next issue most assuredly includes everyone that has ever lifted a camera with a kite. You cannot have flown a kite and camera and not had an adventure to write about somewhere along the way. For myself, I have had many adventures—one such example would be the time I made photos on Robbin Island near Cape Town, where Nelson Mandela was held prisoner. I will tell you about that one next time.

Craig Wilson



Above: Canoe, by Steve Eisenhauer

Below: Bridge, by Andy Kraushaar

