

KITE AERIAL PHOTOGRAPHY PUTS YOUR EYE IN THE SKY

By Charles C. Benton

To take pictures from a kite, you need three things: a kite, a camera, and a special rig that attaches the camera to the kiteline and activates the shutter button on the camera.

Here's how to do it. >>

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HAVE YOU EVER WANTED TO TAKE PICTURES FROM THE SKY?

Kite aerial photography (or KAP for short) bridges the gap between taking pictures from a ladder and taking them from an airplane. Within this elevation spectrum, you can capture landscapes, objects, architecture, and people in entirely new ways.

In the pages that follow, I'll give you step-by-step instructions for building a very low-cost rig consisting of a camera cradle made of craft (popsicle) sticks and model airplane plywood, a shutter-button timer mechanism that uses rubber bands and Silly Putty, and a camera-stabilizing suspension.

Following the step-by-step section, I'll recommend some kites and other equipment you can use for the project, and then run you through your first flight with the rig.

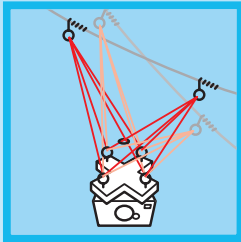
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KITE AERIAL PHOTOGRAPHY

is a low-cost way to take pictures from heights between 25 and 250 feet.

All you need is a kite, a camera (digital or film), a camera rig consisting of a cradle and a suspension system, and a fairly steady wind. The rigs can range from very simple, single-shot devices (like the one you'll make in this project) to complex affairs with wireless remote viewers, and remote control camera controls. (See sidebar, *Way to Go Pro*.)

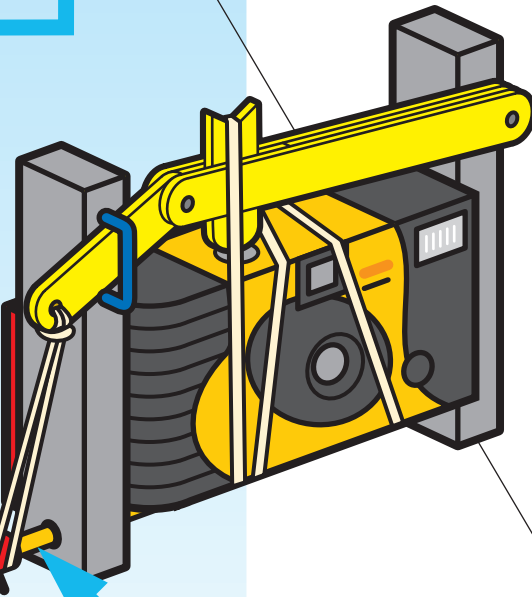
Use a high-quality kite with a kiteline rated at a minimum of 100LB test strength to avoid a mishap with a falling camera.



The camera hangs from a Picavet suspension made of kiteline or string, which adjusts for any sudden kite movements.

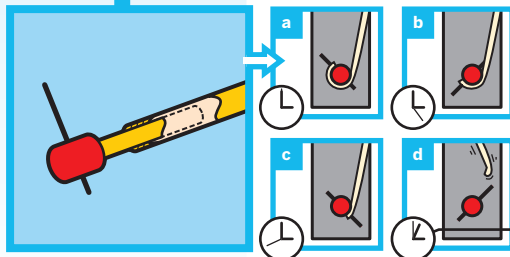
The double-lever shutter linkage uses two rubber bands: one to provide tension on the Silly Putty timer, and another to push down on the shutter button.

Silly Putty inserted in a tube makes for an ideal viscous timer. The rubber band pulls the pin, applying torque to a dowel in the tube. The pin rotates until it frees the rubber band, and ... click!

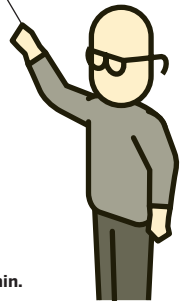


The frame, or "cradle," is used to secure the camera in place and to provide a structure for the shutter lever linkage.

This project calls for a single-use film camera, but the cradle could be modified to work with a digital camera (beware of crash landings if you're a beginner).



1 min.





A DAY IN THE LIFE OF A KITE AERIAL PHOTOGRAPHER

It's a sunny Saturday morning in Berkeley, California. I check the Bay Area winds website and learn that a sea breeze is coming from the northwest. My kite aerial photography (KAP) gear is already packed and in the trunk of my VW Cabriolet. The remote control batteries are charged and ready to go. Around noon I head for the Aeroschellville airstrip north of San Francisco Bay. The owner of a Swift airplane wants me to take some photographs of his craft while it is parked on the ground, and he has secured permission from airport authorities to allow me to fly the kite at the airstrip. During the delightful, top-down drive north, I'm watching trees, water surfaces, and so on to get a sense of the wind.

After arriving at the airstrip, it takes less than a minute to clip the fuzzy tail to the kite's harness and to clip the kite's bridle to the kiteline. With a leather glove on the hand I use to hold the kiteline, I launch the kite, a Sutton Flowform 16, and spool out a quick 100 feet of line. Though the kite is behaving somewhat erratically, it has sufficient pull to lift the camera rig. It will be a challenge to avoid motion blur in the images. I would normally send the kite much higher before attaching the camera to see if I can find smoother air at 300 or 400 feet. But this strategy is not prudent at an airstrip, and besides, we would have to seek additional permissions.

It's time to rig the camera, so I clip the kiteline off to a carabiner tied to a post. From my KAP gear bag I pull out a Canon Rebel X, its 24mm lens, and my handbuilt, radio-controlled camera cradle. I spend a minute getting a fresh roll of film into the Canon and the lens-hood mounted on the lens. Then I complete a quick ground check of the remote control radio gear — used to control the orientation and shutter of the camera when it's in the air — by powering up the receiver. Convinced the frequency is clear, I turn on my transmitter and check the camera cradle's rotation functions.

Today's windy conditions invite the inevitable question, "How do you establish a stable platform that you actually trust your camera to?" Even though the

kite is quite active a hundred feet up, the movement at the Picavet is modest. This is partly due to the stretch of the Dacron line absorbing the load, but mostly it's just the geometry of having the Picavet within 15 feet of the kiteline's anchor point. When launching, I always attach the Picavet's "hangups" in a position that places the Picavet's cross just within reach — say about 8 feet above the ground. Even if the kite dives 50 feet, the camera will still be above ground level. So I proceed by attaching the camera cradle to the Picavet and making a final check of rig movement functions and the camera's settings: auto-exposure mode, focus on automatic.

Once the camera is hanging from the rig, I unclip the kiteline from the carabiner and gain a little working height by letting out kiteline. As stable as the launching arrangement is, I generally feel better when the camera is clear of the ground. With the camera rig about 30 feet above the ground, I work with the Swift owner to take a series of bird's-eye view and oblique shots of the airplane with the camera gaining no more than 40 feet of altitude



Photography courtesy of Charles C. Benton



(as monitored by the IR laser rangefinder I keep in my vest). The owner helps me sight the camera cradle's position downrange — something my twin sons usually attend to.

The camera cradle is bouncing around quite a bit in the gusty winds and my shutter speed is varying between $\frac{1}{250}$ and $\frac{1}{500}$ of a second (determined when the camera was on the ground). The trick in this situation is to patiently wait for the moments when the camera cradle becomes less active and shoot in these interludes. This I do, and when the rig is moving vigorously, I back away from the handsome Swift, lest something fail, and — bombs away. (I will knock on wood and say that in hundreds of flights, I've yet to drop anything.)

After taking my last shot, I tie the kiteline off to the carabiner again and walk the kiteline down to retrieve the camera rig. With the kiteline under my armpit, I easily handle the Picavet without putting tension on its lines. After removing the camera cradle, the kiteline is released and the kite flies from the carabiner while I move the camera rig out of harm's way (or, as I do on other occasions, change the film and then reattach).

With the camera tucked away, I walk the kiteline down again and remove the Picavet and then the hangups. These go back into their photographer's vest storage pockets. Next the kite is hauled in (by walking the kiteline down in this case) and kite, tail, and kiteline are stowed away. A final scan around the flying site for scattered gear is followed by stowing the larger items, including the photographer's vest, in the KAP gear bag. The session ends by taking a couple of ground-level context shots, thanking the Swift pilot, and exchanging business cards. The total time between hauling out the KAP gear bag and placing it back in the trunk is about 35 minutes.

