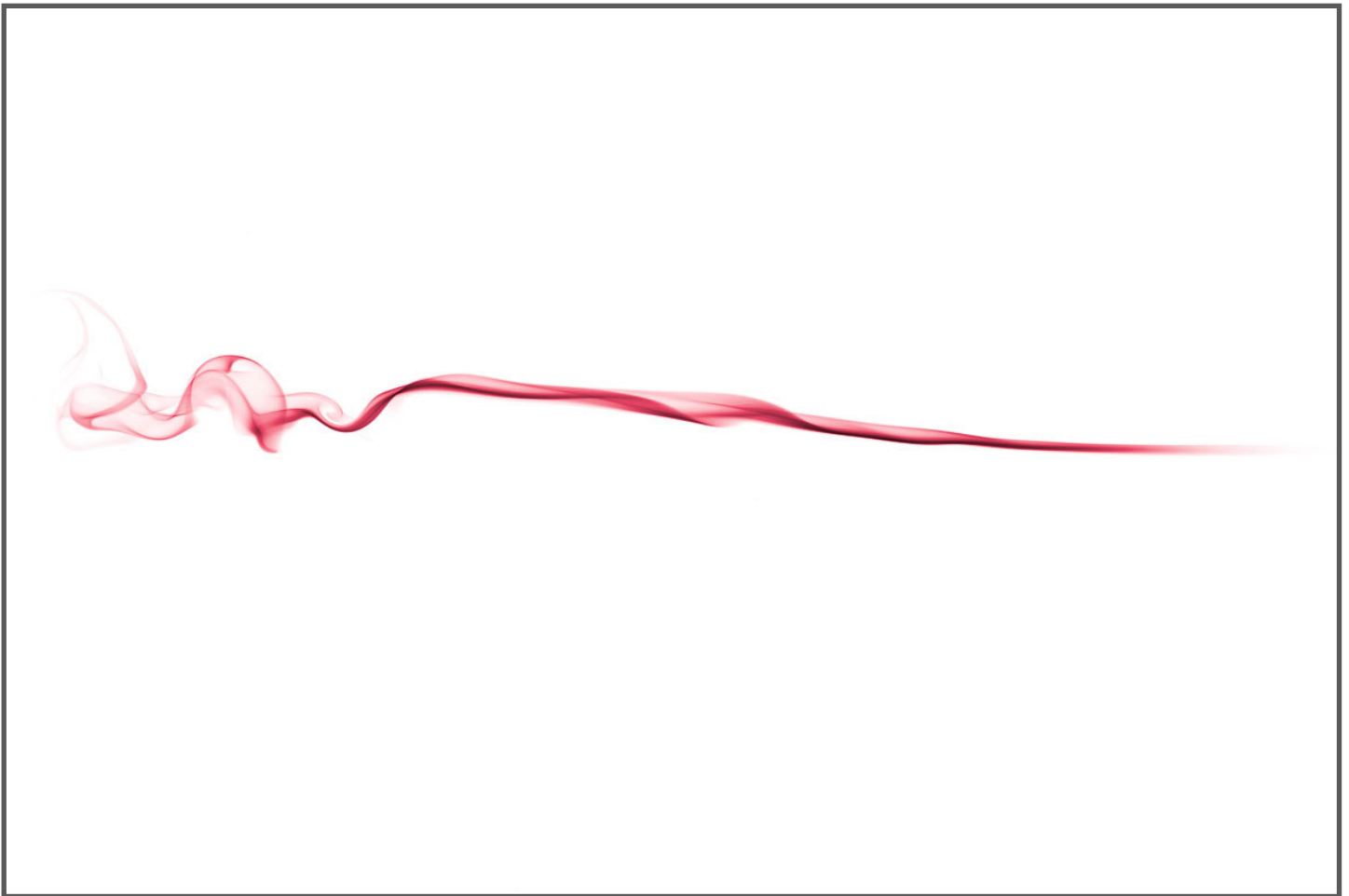


Smoke Photography

Capturing Delicate Wisps of Smoke



Smoke Photographed in a Studio

Getting Started

For first timers, photographing smoke can be an extremely frustrating experience! Capturing delicate wisps of smoke is as challenging as it is rewarding. The key to success is having a basic understanding of the overall setup; that is, the camera in relationship to the lighting and background. Fortunately, you don't need a lot of expensive photography gear to capture exceptional shots. In this guide I walk you through the process of setting up a mini studio to maximize your time while getting great shots. I also offer several ideas for processing your images in Photoshop to give them a polished look.



Using the Right Equipment

Let's start by taking a look at the basic equipment. You will need incense sticks and a lighter, a single flash or strobe, a snoot, a white reflector, black background, tripod, remote shutter release, and of course, a DSLR camera. You also need a way to fire your strobe remotely. The ideal method is a

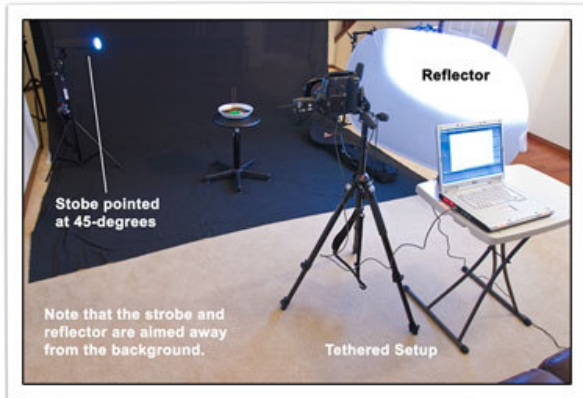
wireless solution (e.g. infrared or transmitter). You can connect a strobe directly to your camera if you have a long enough sync cord; plan on at least 10-15 feet. I use two Pocket Wizards to remotely fire a single Canon 580EX Speedlight.

Shooting Tethered

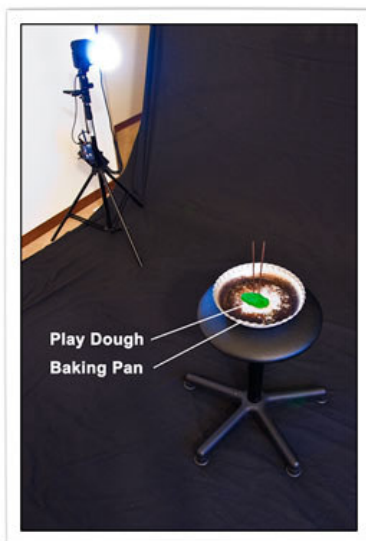
Although not entirely necessary, shooting tethered to a laptop allows you to see your photographs in real time. Instead of shooting a string of images, snuffing out the incense stick, transferring the photographs to a computer and then checking your results; shooting tethered allows you to see your results immediately and make changes to the lighting and exposure as you go. This is a real time saver and speeds up the learning curve.

Setting up the Studio

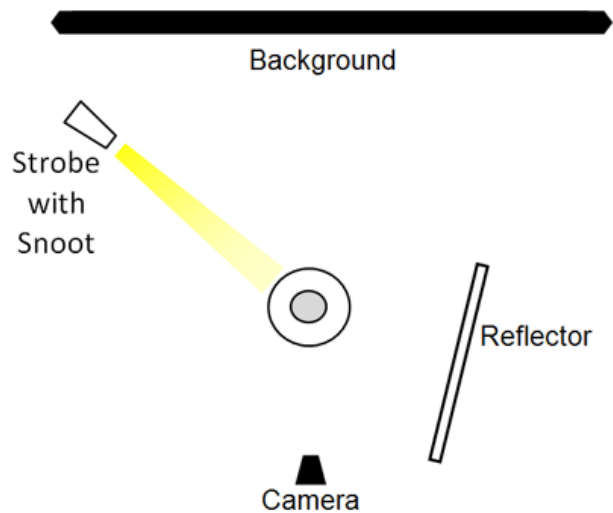
Since smoke is naturally light grey, you stand a better chance capturing it is against a black background. You can invert the background later on in Photoshop and change it to white if you wish. The basic idea is to direct a narrow beam of light through the smoke plume without splashing any light onto the background. The background must be underexposed so that it remains completely black. This is where a snoot comes into play. A snoot allows you to narrowly focus your light through the smoke line without contaminating the background. Let's take a peek at the setup I use:



I use thick muslin fabric as a background. The muslin hangs on a portable Bogen stand held into place with clips. You could substitute muslin with a black, cotton sheet (I recommend doubling it up if you decide to use a thin bedsheet). Next I stick a small piece of play dough into the bottom of an old baking pan. The play dough holds the incense sticks so they stand straight up (hey, it works!) while the baking pan catches hot ashes falling off the incense sticks. I place the baking pan onto a short, no-back chair four or five feet in front of the background.



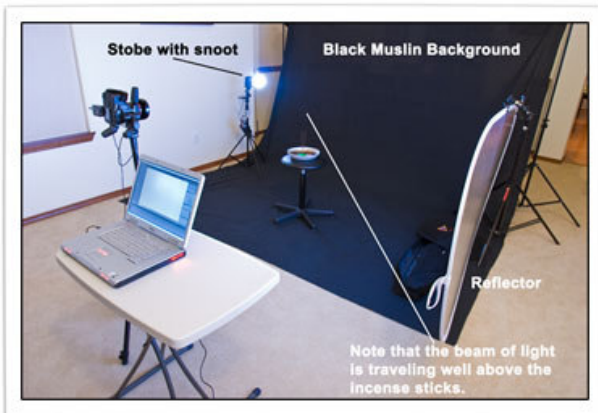
The main strobe (fitted with a snoot) is situated camera left several feet behind the incense sticks. The strobe should be pointed to the area just above the incense sticks and directed 45-degrees toward a reflector. It is important to note that the strobe and reflector should not be pointed (or reflecting) toward the background. Here is a diagram that shows the relationship between everything:



I fashioned a snoot for a Canon 580EX Speedlight using flexible rubber foam that I picked up at a local craft store. A snoot simply directs light into a narrow beam so that none of it spills onto the background. Barn doors or a soft box could be used in place of a snoot as long as you can control the light. The idea is to direct the light through the smoke and away from the background (remember that the background needs to be underexposed).

A white reflector helps bounce the light back through the smoke trail. If you don't have a traditional reflector, you can substitute a piece of white cardboard or Styrofoam. Be sure to adjust the reflector so that it's not bouncing light onto the background (I can't say it enough!).

I get the best results shooting in a completely darkened room at night. Turn off heaters, air conditioning units and fans so that the room is perfectly still. If you place two incense sticks side-by-side, the heat created from each stick causes unique swirling patterns in the smoke.



Set your camera on a tripod several feet from the incense sticks. Set your focus point (focus on the tips of the incense sticks) and then readjust your composition so that you are capturing the area just above the sticks. Consider zooming in fairly tight on a very small area where you know the smoke plume will be. You may also want to turn your camera vertically so that you can capture as much of the smoke trail as possible

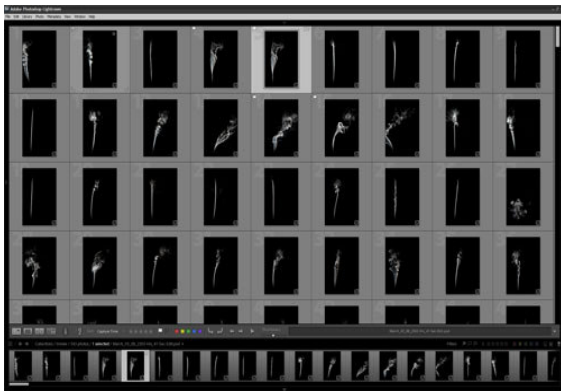
(you can switch the image to a horizontal composition later on if you wish). I recommend capturing the smoke immediately after it leaves the incense sticks. You will find that the smoke begins looking more and more chaotic the farther away it drifts from the sticks. Don't forget to turn off the auto focus on your lens so that it doesn't attempt to hunt around for focus points after you turn the lights off.

Switch to Manual mode when you have your camera properly setup. I usually use the following settings with a Canon DSLR and a 580EX Speedlight:

- ISO-50
- F-7.1
- Shutter-1/250 (sync speed)
- Focal Length-105mm

I prefer to shoot RAW images for the additional flexibility it provides in processing. Your camera settings may differ slightly. The general idea is to balance the ISO and aperture so that the shutter speed sits right around 1/200 or 1/250 of a second. Setting the shutter speed as high as possible (within the limits of the sync speed for your flash) will ensure that you are properly freezing the smoke. I leave my flash in TTL mode set at full power. As I mentioned earlier, I use Pocket Wizards to wirelessly communicate with the flash.

Now is the time to tether your camera to a laptop. This step is totally optional. Canon EOS Viewer (bundled with most Canon DSLR cameras) allows remote shooting. If you shoot with a Nikon, you will need to purchase Camera Control Pro. Both programs transfer images from your camera to a computer as you shoot. You can setup Lightroom to automatically import the images so that you can view them in real time. If you haven't tried shooting tethered before, what are you waiting for!?



Shooting Tethered in Lightroom

Quiet on the Set!

Once everything is setup and ready, light the incense sticks and turn off the lights. Give the incense sticks a few moments to really start burning. Start out by taking a few test shots using a remote shutter release. Closely examine your composition and histogram. The black background should be totally underexposed. You may need to adjust your strobe so that it is hitting your smoke plume in just the right place. You may also find it necessary to make adjustments to

your composition. It is important to work quickly because the smoke will fill a small room in ten or fifteen minutes creating a haze that can affect the quality of your photographs. Once the lighting and composition are setup appropriately, you can sit back and fire away.

It's a Numbers Game

Photographing smoke is a tricky affair. My experience has been that you will have to shoot a lot of throw-away images to get a few exceptional ones. Every tenth or twentieth image may be a keeper. Feel free to experiment to see what kind of interesting smoke plumes you can create. I prefer to sit motionless and allow the heat from the incense sticks to create subtle, unique patterns rather than attempting to manipulate the smoke (with a spoon for example). The simple act of getting up and moving around tends to blow the smoke all over the place. With a shallow depth of field and tight composition, subtle disturbances in the air wreak havoc on your chances of capturing decent images.

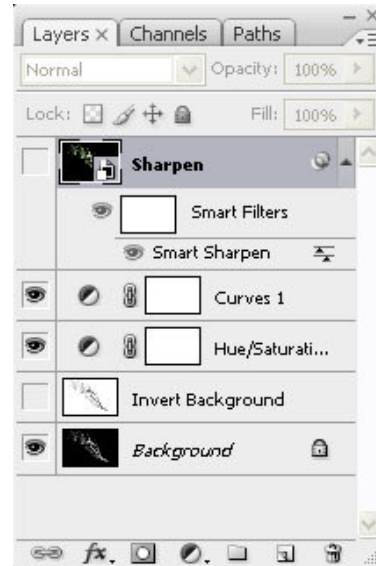


Processing Your Images

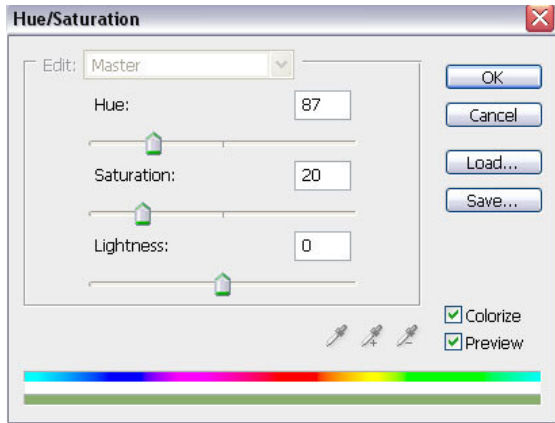
When you finish in the studio, it is time to take your photographs into Photoshop. I import my images onto my main desktop computer and sort through them using Lightroom. I start out by deleting all the rejects. This includes out-of-focus shots and those where the smoke plume drifted outside of the composition window. Next I narrow the images down to the best-of-the-best. Out of several hundred images I may only pick four or five to move forward and process in Photoshop. Before going into Photoshop, I neutralize the color temperature so that the smoke is colorless. You can adjust the color temperature in Lightroom or Camera Raw. I have found that setting the temperature slider to right around 6900 works well.

Processing is a cinch! Take your favorite shots into Photoshop and start by creating a duplicate layer from the background layer. To do this, go to the main menu and select Layer -> New -> Layer Via Copy. You can also drag the background layer to the new layer icon located at the bottom of the layers pallet. With the newly copied background layer selected, press CTRL+I (PC) or COMMAND+I (Mac) to invert the image. Inverting the duplicate layer allows you to see the smoke against a black and white background. Simply click on the little visibility eyeball next to the inverted layer to see both versions of the image. In some cases you may find that you

like the black background while other times you may prefer a white background. It comes down to personal preference and taste. Creating a duplicated layer to invert the background provides you with some flexibility to change your mind later on.



Now create a new adjustment layer for Hue/Saturation. Check on the Colorize box in the Hue/Saturation dialogue window and move the sliders back and forth until you are generally satisfied with the color of the smoke plume and click OK. Keep in mind that you can go back anytime to fine-tune the hue and saturation. Also remember that you have the flexibility to view the color you chose for the smoke against both black and white backgrounds - just click the visibility icon on the inverted layer to view the smoke separately against black and white backgrounds.



Hue/Saturation

You are almost done! Create a new layer and clone out any stray bits of smoke that seem out of place (you may not need to do this with every image). Next create an adjustment layer for Curves and bump up the contrast to suit your taste. The last step is to sharpen the images ever so slightly. To sharpen, press the SHIFT+CTRL+ALT+E (PC) or SHIFT+COMMAND+OPTION+E (Mac) keys. This will create a merged (or stamped) layer from the layers below. Feel free to turn this into a Smart Filter if you have Photoshop CS3. To do this, go to Filter -> Convert to Smart Filters. Now go to Filter -> Smart Sharpen (or Unsharp Mask) and sharpen the image. Since you are dealing with delicate wisps of smoke, I recommend going light with the sharpening. I usually set the Amount to 100 (or less) and the Radius to 0.8. You want to apply just enough sharpening to tighten up the edge of the smoke. Finally, you can rotate the image so that it is horizontal by going to Image ->

Rotate Canvas. You're finished! Processing images of smoke usually takes just a few minutes and the effort pays off in polished looking images. After looking at your images, you will find people asking, "How did you do that?"

There are very few practical reasons to photograph smoke; however it's fun to shoot something new and unusual. Besides that, not very many people are doing it! Give it a shot - I am sure you will be happy you did!

Want More?

Watch the companion video (Flash required)!

- Watch the Standard Definition Video - 800x500 (12.8Mb Flash Stream - 10:30 Min.)
- Watch the High Definition Video - 1280x900 (18Mb Flash Stream - 10:30 Min.)

About the Author

Steve Paxton lives with his wife and two children in the Seattle area. Steve has been a photographer for over fifteen years. His experience ranges from wedding and portrait work to landscapes and crime scene photography. You can find more of Steve's work at www.paxtonprints.com and www.paxtonportraits.com.