

4-Week Short Course: Getting Started in Commercial Photography with John H. Siskin

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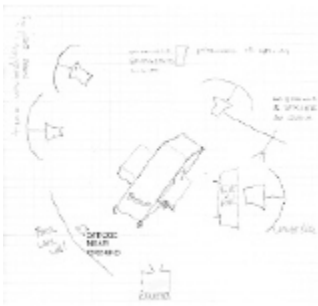
If you'd like me to critique your assignment you can arrange that at my website. Please visit www.siskinphoto.com/workshop.php. I suppose you could also make a donation at the site.

Lesson #2: Reflective Products

Welcome to Week 2! So this is a nightmare shot. When you have a reflective subject, be it a Delorean Motorcar or Bob the Bowling Ball, you have to light what the subject sees rather than the subject. If I had used an umbrella to light the side of this machine (it is for sterilizing instruments for surgery), the side would have acted as a mirror reflecting the things in the room the light illuminated. This means that in a black room you could light the product and still see no light on the product.



Belco Sealing Machine
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Belco Sealing Machine
Diagram
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The primary light then must create this controlled reflection. In this case, I made a wall out of a couple of pieces of foam core I had taped together. Then I used a strobe, one of my Norman Studio Strobes, to illuminate the foam core from a small light stand on the floor. This light had the full 2000 watt-seconds. This gives me not only lighting on the side of the machine, but also a gradation across the metal surface. Of course, if I change my camera position slightly, the part of the room the stainless steel sees changes.

This shot was made with a 4X5 Toyo camera so it required a lot of light. I could have done this with a digital system, it is an all strobe shot. Whenever you have a triangular pattern to your subject, like the way bowling pins are laid out, perspective movements on the camera will not solve your problem. You need the depth of field from a small aperture, around f32 in this case, if I had used digital I could have used a larger stop since I would be using a smaller capture area. I was able to use the camera to maintain the perspective of the subject. Usually I arrange my subject camera relationship first. There

are a couple of reasons for this: 1) I do not put a light where the camera belongs. 2) In a subject like this any change in the relationship between the camera and the lens changes the lighting.

The lights on either side of the subject provide a similar function to the foam core panel. Since these areas are not the large flat area like the front of the machine, we do not need anything as smooth as I did with the foam core; thus, I was able to use umbrellas. I spread about 3000 watt-second of strobe power between these three lights and the two lights I placed overhead to light the background and the top of the machine. The background light was placed on a rail system I have in the studio (I'll explain building this soon). The light for the top of the machine was on a boom. I did it this way because the boom is easier to move and the light on the boom was more important to place critically. Booms are long arms balanced with weights on rolling stands; they are called booms because that is the sound they make when they fall over. You need to be careful with booms and keep them in place with sandbags when they are in position.

I can talk about this quickly but it took forever to do. Sometimes a move of about 3 inches in a light made a large change in the subject. The most important principal in this image is that you light what the subject sees, rather than lighting the subject. This applies to any reflective subject; this is why people use a tent, a white smooth enclosure, to light jewelry or glassware. Really this is a big tent, if my subject had been rounder I would have had to create more of a literal tent with my lighting.

Boom

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Jewelry & Shiny Product

The principal is the same for most jewelry. This is why many people manufacture what are called tents, basically a translucent box with a place for the lens. The box is lit from the outside. If you are going to do a lot of this kind of product get one of these, you'll need it. The problem is that tents produce very flat light. Because of this, I more often use what I call a lean-to.

Lean-To Lighting
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This gives me two walls and a ceiling. It is very easy to set-up; I use a double clip to hold the panels together at the top. You could easily use gaffers' tape. I can add a back wall, by bringing in another panel. The simple two-panel set-up did this shot:



2 panel lighting
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2 Panel + 200B
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This works pretty well for metal, particularly when you throw in the back wall. If you look closely you can see how the two panels worked with the pearls in this shot, kind of reminds me of Bob. If you have faceted stones this does not work as well, as you'll notice in the blue stone in this piece. The stones become a little too flat. If the shot is all about the stones I will give up on the lean-to and try various small size softboxes. I will be checking the light source at different distances to try to get the right sparkle in the stone.

However with the piece above I just wanted to add some harsh light to the diffused light that was working pretty well. So what I did was to add a Norman 200B to the shot above, perhaps you can see it in the set-up shot. I set this light on just 50 watt-seconds, while the power pack lights were on 500 watt-seconds each. This just added a few little harsh highlights to the shot, but I think it has a good effect on the diamond like stones as well as the blue stones.

You could also use a small quartz bulb; this would put a warmer sparkle back into the stones. One more thing I have done to add sparkle is to use the slide projector to put sparkle back into a stone. The projector allows me to place a very small spot very carefully. I did this in opal shot.

Both the opal and the diamond would be dead in this shot without the Kodak Slide

Projector.



Opal and Diamond Pendant
on Quartz

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Tents

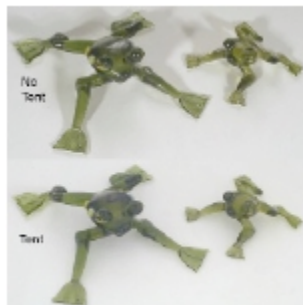
Tents go one step further, but they also go one step flatter. There are several different styles of tent. Basically the idea is to get a directionless shadowless light all around the product and still get the lens where it can take the picture. In this shot, you can see that 3 lights surround the tent and that each light is bounced out of an umbrella. This makes the light even smother.



Light Tent for Product

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This is a pretty large tent, which means that you have more area for product. The real problem is that the images are very flat, less information about texture and reflectivity. Sometimes a metal will look like a ceramic, because there are no greys or blacks. This shot is a before and after, the product looks better before, the background looks better after.



Acrylic Frogs with and
without tent

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I wanted to include links to couple of tents I don't own, but I'm sure they work well. I've used the clothes hamper from Ikea, above, and that does work well. And, of course, you can get this stuff at all the regular places: Samy's B&H and Calumet. Here are some tents:
www.bhphotovideo.com/bnh/controller and
www.bhphotovideo.com/bnh/controller and
www.bhphotovideo.com/bnh/controller.

Of course there are more. You can probably tell that tents are not my favorite lighting tools, but when you really need a tent nothing else will do.

Copying Artwork

When I started my photography business a few decades ago my commercial client was Bagdasarian Productions. They made the Chipmunk animated cartoons, with Alvin, Theodore and Simon. They were working on a full-length movie about the adventures of the Chipmunks. One of the keys to animation, back in the eighties was high quality painting for backgrounds. Those paintings were done here in Los Angeles and then shipped to Korea for the character animation. My job was to make high quality copies of the backgrounds so that the background painters would be able to refer to them in order to maintain accurate color and style. Since then I have done copy work for businesses, artists and galleries. Copy work is pretty simple but it must be done very carefully in order to get the best results. I often do copy work in the living room, since I keep my equipment at home.



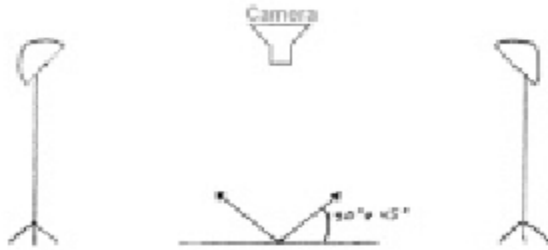
Hand, Solarization
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Set-Up
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The basic layout of a copy job is to have the camera back, whether film or sensor, parallel to the subject. The lights need to be between 30° and 45° from the plane of the original. In this range they light the original but you don't see reflections of your lights in the original. You can even shoot through glass! The lights need to be far enough from the original to even out

the lighting. In the example with this article the lights are about five feet from the center of the original. You need the lights further away from a larger original. The reason for this is that if the distances from the light to the corner of the original and to the center of the original are significantly different you will not be able to even out the light. The amount of light that makes it to the original goes down as the distance to the original increases. So if the distances to different parts of the original are very different you will not be able to even out the light. In the example the difference between the light on the center of the shot and the corner is 1/10th of a stop, pretty small.



Lighting Diagram
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Metering

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This is the one area of digital photography where I still use a light meter. When I set-up a copy job I put the lights an equal distance from the center of the original. I also point the lights at the original. Then I use the light meter to move the lights into the most advantageous position.

As I mentioned above, in this case I was able to get the lights to almost perfectly even. It is very difficult for the eye to see differences of less than 1/3rd stop, so if you can get your lighting even to the 1/3rd stop level your light will be even on the copy. I also use diffusion domes over my lights to make them more even.



This is a Norman LH2 with the glass diffusion dome
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Set-up with umbrellas

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You might need these if your lights are close to the original, as you move the lights further back, they don't matter as much. I generally use them, but then I already have them. I will usually use the lights directly, to reduce the chance of reflection. If I am photographing a piece of art with an irregular surface I will probably use umbrellas to reduce the shadows on the irregular artwork. If I am including the frame in the copy I will also use the umbrellas to reduce the harsh light on the frame.

The kinds of lights for copies are also important. The easiest lights to use are strobes. Strobes have a color balance that is the same as daylight; this is a big advantage if you are using film to make

copy slides. You can use strobes in a room that has existing light; the room light will be so much less than the light from the strobes (if you have reasonably powerful strobes) that the room light won't affect your shot. If you can remove existing light from your location (including daylight) you can shoot with quartz lights. These lights are designed for photography and they have the qualities to make good copies. I would avoid the tungsten photo bulbs that look like regular light bulbs; they change color too quickly. I would not use any fluorescent lights for copy work, although digital cameras can balance for them reasonably well, they do not have a continuous spectrum. Consequently you will probably have problems achieving accurate color everywhere in your image.

Whatever light source you decide to use you will need to do a color balance if you are using a digital camera and a color test if you are shooting transparency film. The key to doing a good balance with a digital camera is to use an accurate grey sample. I use a GretagMacbeth ColorChecker, to keep things accurate.



GretagMacbeth ColorChecker

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I use the grey samples on this card to set my balance on the digital camera and the whole card to test my film. Getting the color set accurately is a very important part of copying, so it will be important to check the best way to do this on your digital camera.

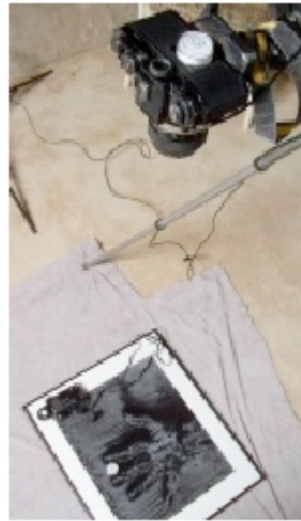


Side Arm Covered With
Duvateen
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There are popular copy stands for doing small copies, say 11X14 at the largest. These are faster than using than my tripod set-up. If you are copying a large amount of originals from 4X6 inch to 11X14 inch you should check these out. However, if you are doing larger originals or doing copy work less often you should consider a Side Arm attachment for your tripod. I use a Bogen/Manfotto 3059 with my Gitzo tripod; you can mix and match in this area. The side arm mounts on the tripod legs and then the tripod head mounts on the

side arm. I cover the side arm with black Duvateen fabric when I am shooting products under glass or very glossy originals.

There can be enough light spilling onto the side arm for it to reflect in the picture. The key to keeping your copy square is to be able to get the original parallel to the camera back. Before you do the leveling, get the camera into about the right position, because if you have to move the camera you may have to level it again. I use two surface levels to make the camera parallel to the original. I place one on the original and one on the camera back. This is generally a part of the procedure that requires some patience. The object is to get the two bubbles in precisely the same place.



Surface Levels
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I have used several different types of levels over the years, these little round levels work pretty well. The key is to not be in a hurry, and to double check if you move the camera. Remember you can move the original as well as the camera. If you are copying an original mounted on a wall, then the levels won't help you. The way to get your camera positioned is to make the original square in the frame by moving the camera. This also requires patience.

You can use any lens to do copy work, but if you want to have a high quality copy some lenses are better. You should probably avoid zoom lenses, they do not focus on flat objects as well as fixed focal length lenses, and they often do not focus close enough. One inexpensive alternative is 50mm lens. The best lenses for this work are macro lenses; they are designed to shoot a flat field. I use an older Nikon 55mm f3.5 macro lens. It does not have any

automatic features when I use it with my camera, but those features don't do me a lot of good with copy work. I have exposure information since I used the meter to set my lights.

Auto focus often doesn't work well on artwork, since there may not be enough contrast to focus on, and I don't want to reposition my camera to focus. I usually place a coin or other object on the original to focus on and focus by eye when I use the macro lens. I can check my focus on the computer. Of course when I am using a film camera it is a little easier to focus, since the viewfinder is designed for manual focus. One of the other problems with focus is that I have to stand on a stepladder to focus. I wouldn't have to do that if I shot the original mounted on a wall, but it is much harder to get the sensor parallel to the original!



Framed Artwork
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The key to doing good copy work is to have enough respect for the original to want to do a good job, and to be careful with the work.

What Is A Studio?

Basically a studio is a place where the photographer has control of what happens with the light. I need to be sure that extraneous sources of light are under control, such sources may be daylight from a window or light sources that overpower my strobes or quartz lights. Another problem is reflections, you would prefer not to see a TV set reflected in your models eye.



Sax with Seamless
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One of the ways I can control both these problems is by making walls. I usually do this with seamless paper or with light panels.

The panels are one of my basic studio tools, they let me diffuse light, bounce



Studio Set-Up
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light and block light. All this is accomplished by changing the fabric cover of the panel. Usually I would use a black cover, probably Duvateen to kill the reflections; however with the sax shot above I should have used a large white panel, or a roll of seamless. These are easy to set up and put away, so they work well in the temporary studio. I can build a whole room within a room from the panels.

If you are outfitting a garage as a studio, or making a permanent home studio there is another choice. You can mount rolls of black seamless paper onto the ceiling and bring down the paper as a wall to control reflection. This is quick and easy, especially if you use a chain drive on your paper roll. Bogen, also called Manfrotto, has a nice chain drive for raising and lowering the seamless.



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Even simpler is to buy a roll of black seamless and staple it to your wall. Seamless is available in widths of 4.5, 9 and 12 feet and lengths of 10 meters, 50 meters and 100 meters, those hundred meter rolls are really heavy. Another way to go is to hang brackets and put up a curtain. Of course if you did use white here you could use it as an oversize light panel! Any of these ideas can be adapted to your circumstances to bring your location under control.



The Magic Arm is mounted into a super clamp.
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Another concern is the area above the shot. My ceiling is not in very good condition, so I do not bounce off it. If I need an overhead bounce I will either put up a light panel or pull white seamless along the ceiling. I have a set of rails mounted on the ceiling that make either possibility more practical.

I have mounted two 10ft. poles to the ceiling using all thread and expansion bolts. Then I have two more poles that run between the original ones. This second set of poles moves. I am able to hang lights reflectors and props from these poles, very handy! I admit that this wouldn't work in most living rooms, but it would fit in a garage studio pretty well! Everything should be

available from your local Home Depot. This rail system also holds lights. The next photo is a Norman head mounted on a Bogen Magic Arm.

Of course it is critical to be able to mount backgrounds in the studio. In addition to the brackets shown earlier, there are temporary ways to hold seamless or other backgrounds. It is easier to set up smaller backgrounds; in fact you can hold a small roll of seamless or a light background with two regular light stands and a top made of PVC (just like the top of a light panel, but wider). For bigger backgrounds you can buy a set of background stands, but you might be better off with a set of C-Stands. C-stands are critical around the studio. They are like light stands on steroids! If you use two C-stands and a couple of extension arms you can easily hold seamless or other background.

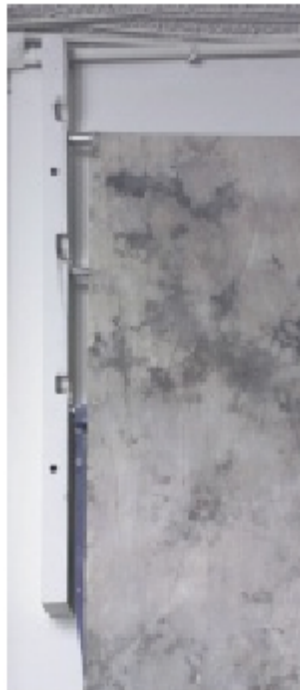


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You can also use them to hold lights or to hang things in the shot. These are really heavy duty! Another permanent method is to make wall brackets out of 2X4s.

This works well, as you can have several backgrounds set up at once. However the Bogen background rollers will work with the U-brackets and won't work with the wall brackets.

Of course with all these lights you will want to design some extra power outlets into your studio. We usually need extra power to use strobes or quartz equipment. Also it is important to keep the power cords from going all over the studio; you don't want anyone to trip!



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Paula's Studio #1
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I have seen a lot of home studios and I have identified one major problem: home studios become home storage areas. Of course it starts out with storing photographic stuff and suddenly everything that has no other place is in the studio, take a look at this studio.

This kills your ability to do work in the studio. Actually storage is a problem every studio faces. I have a large

number of things I keep as props, as well as an 8X10 inch enlarger. My studio is in a commercial space; I have almost as much space dedicated to storage as I do to shooting. Of course it's important that your clients are not able to see your mess! The alternative is to clean out the studio every time you want to use it. This would be an energy trap.

The studio in this shot is very space efficient.

This is a smaller studio space than the garage, but maybe because of this a great deal of thought has been put into storage. The thing I like is the stand storage along the sidewall. This is a great use of space, but it is even better because of the curtain that covers all of this storage. The curtain is placed here so that the gear on the sidewall does not create a reflection issue. Another thing you want to notice in this shot of the sidewall is the trashcan. It's not a trashcan at all but umbrella storage. I use trashcans in my studio also. I use one for umbrellas and light panels and another for light stands. Trashcans are the best light stand storage I have seen. I am adding a picture of the back wall, because you will want to note that it is also devoted to storage, this is a very efficient little studio!



Tom's Studio, Overall
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Something I like to have in a studio is a rolling cart filled with supplies. I can put my laptop on top of cart, or film holders and a loupe for the view camera. You can see a cart in the previous picture and you can see my cart in the next picture.

Underneath I have such things as clay, cleaning products, reflectors and all those little things that are often critical to a shoot. I really like to use my digital



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camera tethered to the computer, this is a great way to keep the computer close to the shoot.

Of course the most important thing is to be able to manipulate light. There are a huge number of tools available to do this in the studio, but there are just a few that I use most of the time: umbrellas, softboxes and light panels. I use light panels all the time, not always for lighting. As I mentioned at the beginning of this article I use them to block light also.

Since I use so many of them, it's a good idea to build them myself. I save a lot of money that way.



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One More Thing...

Being a business means being responsible. So there are probably city or county licenses you should have. Of course, I can't tell you what is required in each locale, since people take BetterPhoto classes from Canada to Argentina. But what I do want you to do - at least in the United States - is to get business insurance.

We live in a litigious society, which is a good reason for insurance, but there are other reasons too. First, someone may steal your gear; I've had this happen, and it's not fun, even though I had insurance. Second, something bad could happen, whether my fault or not, and insurance will help to make things right. I've had good experience with State Farm, but I am sure the other companies are good also.

Your Assignment: Photograph a Shiny Metal Object

Shoot a shiny metal object with your lights, with and without diffusers, play with this long enough to get a feel for how the tools work. Jewelry might be a good choice, but so would a refrigerator. As always these images should be something you could use to show your capability, or it would be something you want to work on to be that good. Upload samples with and without light modifiers, and with a shot showing how you did each set-up.

Have a good time.

Thanks!

John

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