

BetterPhoto.com PhotoCourse: 4-Week Short Course: An Introduction to Photographic Lighting with John H. Siskin

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Lesson #2: Establishing Goals

Welcome to Lesson 2.

Norman 200B System

I have this friend, another photographer, who makes his decisions about equipment with his heart and not his head.

Consequently he has a large collection of gear that doesn't amount to much.

He's been doing this a long time: he used to have a Contax 645 and a Hasselblad 500c, both with 80mm lenses and neither had a Polaroid back for proofing. He had lights, but none of them worked together well.

Norman 200B System© **John H. Siskin**
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I think in terms of systems, and the strengths or weaknesses of the whole system. I also consider the costs of the system at the start, which helps me to decide whether to get started with a system. A case in point is the Norman System pictured above. I choose this system as a cheap, lightweight and flexible system for location lighting.

It took a long time to collect all this, but I probably invested less than \$750 in the whole system (did I mention that I try to be careful about spending money?). It has 6 heads, 4 power packs (2 AC and 2 DC) stands, reflectors, cases as well as other tools.

Since this was a second system for me I was able to spend years looking for this equipment, and, of course, it was useful as a partial system. Well be talking about this gear again in a couple of weeks.

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Perfume Bottles
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Establishing Your Goals

This is really pretty easy to describe: what pictures do you want to make with strobes? If you want to shoot studio portraits you will need at least 3 light sources. You may use them to light both sides of the face and the background, or one side of the face the hair and the background. You may want more lights. If you want to make product shots, again 3 lights for similar reasons. If you are going to shoot large product, say cars, you will need more light sources. Each light will have an important effect on the picture, creating light, shadow and texture. Please note I said at least 3 lights, this is very different from at most 3 lights.

If your goal is to shoot architectural interiors and you are an interior designer shooting for your portfolio you might want 4 light sources. If you are shooting architectural interiors, and expecting to sell them to interior designers you will want more lights, maybe 6 or 7. When I go out to do a magazine cover for a trade magazine (strictly low budget) I'll bring 3 or 4 lights; if I am working for a hotel I'll have 7 or more lights.

There are 2 factors here: one, how many lights to make the shot work and two, how many lights to impress the client. When I light an interior, I pay a lot of attention to the existing lighting in the space; hopefully, somebody designed that. If you work in a space with 30 light sources, you will have trouble duplicating that effect.

*Lights mixed strobe and Quartz. 4X5 Toyo
 Camera*

If you want to shoot better portraits in a church while doing a wedding, it's a whole new ball game. Now you might want 5 or more lights, BUT you don't have time to

rig them and how are you going to carry the lights?

So make a wish list of what we want, but we will make a final list considering what we can actually use and afford. I'm getting ahead of myself, but portrait lighting on location requires enough lighting to shoot the subject and the location.

Made for Mark David Levine
Designer

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You started a list last week that will help you answer questions about the equipment you really need. That list of the kinds of

photographs you want to make will be the basis of your equipment list. At the top of this new list is the camera or cameras you will use. This is important for a couple of reasons. First, it will help you to know how much light you'll need.

I used to make product shots with a 4X5 Toyo camera and a 210mm lens. In order to get enough depth of field (if you do not understand this term see www.betterphoto.com/photocourses/bonuslessons. I made photographs between f32 and f64.

Now most 35mm camera or a digital SLR. don't even have f32. But it's not much with 4X5. The bigger the capture area, the less depth-of-field you have at a given aperture.

Recently, I did a product job with my Kodak DCS Pro 14n and I used f11: plenty of depth of field. A 3 stop difference means I now need 1/8 as much light as I used to. If I had a larger capture area, say a Calumet Better Light Back, I would need all that light again. It's the size of the capture area that affects how much light we need, not film vs. digital.

This is a photo of a 4X5 Speed Graphic, a wonderful camera, but it needs a lot of light.

Another thing that is affected by the camera used is how you see the picture you are working on. An awful lot (stress the word - awful) has been written about the digital workflow.

What I want to do now is to compare the capture path of film and digital (those of you who do not want to learn about film should skim this, but there are one or two useful things). When I want to

4X5 Speed Graphic Camera

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light a shot, I start in my head. I look at the shot, person, product or whatever and see it in my head. I then consider what sort of light I want on the thing, harsh, soft, dark, bright and direction. THEN I start setting up the shot.

Now I made some decisions about the lighting, so I set up the lights, based on the shot in my head. If I am using digital, I guess at the exposure and shoot. If I am using film, I meter the shot, consider any possible changes, maybe I don't have enough light, and shoot a Polaroid. With either capture system I evaluate the test. With digital, I look at the image on a decent sized computer screen and look at the histogram. Compared to this evaluating a Polaroid is like a gypsy consulting tea leaves.

Polaroid images have a different characteristic curve than film. They react to shadows and highlights differently than film and the sensitivity to light is different. (If you want more information on Polaroid, please send me a message.) The important thing to understand is that you will not be able to do complex lighting without a feedback system, either Polaroid or Digital.

Please *do not waste your time trying to do lighting with a film camera and no feedback*. You will either have to do the same thing every time or accept many bad results.

Ansel Adams used Polaroid, so should you, **if** you want to use film. It is possible to use a digital camera to predict what a film camera will do, but this requires some practice. To do this you want a digital camera with real apertures and shutter speeds you can set manually. You will also need to be able to set the ISO on your camera, and of course, connect it to strobes.

A third thing your camera type will affect is your trigger options. Some cameras do not have a PC socket, this function is designed to synchronize your strobes with your shutter.

There exist hot shoe adapters that allow most of these cameras to trigger strobes. You should find out whether or not your camera accepts a PC socket and develop another plan to trigger strobes if it does not. You will generally need to consult your instructions to get this information.

Polaroid test print of flowers

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I should take this opportunity to point out that the PC socket is a lousy design. I often need to tighten my sync cord as a shoot progresses. It is important to keep an extra PC cord. There were other systems to sync strobes, and you sometimes see them on old view cameras.

PC cord tip
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PC Socket
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Another problem with many strobe systems is the design of the sync terminal at your light. The design is identical to a wall socket plug, making it possible to plug your camera into the wall. VERY VERY BAD! This can kill, terminate and/or destroy your camera. Be very careful not to do this.

There are systems that use the head phone (guitar plug) plug to attach to your light; this is safer. There are two sorts of wireless systems to trigger your strobes. The first uses infrared light provided by a small flash, with an infrared filter, on top of your camera.

The infrared light will not affect your picture. Unfortunately your recycle speed becomes that of this little flash, often several seconds, making this a poor system.

There are also radio systems, these seem to be very good. A small transmitter attaches to the hot shoe of the camera and a receiver at the light. There are some very inexpensive systems available on eBay. I have used these with good success. Wireless sync is particularly helpful when you are shooting people - one less wire to trip on.

Household connector
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Guitar plug connector
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Back to the List

Next on the list are a couple of essentials. First, gaffers tape - the single most useful item for holding everything all together. This is similar to duct tape - but only better, because it is easier to remove. This tape is available from photo sources (Calumet or B&H on line).

Another item that is essential to lighting is called cinefoil. It is black aluminum foil. You can use it to manipulate a light source without worrying about the risk of fire. Many modeling lights are very hot and fire is a real risk. Other things that belong on this list are the essentials for your camera: lenses, film or digital capture media, perhaps a tripod. You get the idea.

Cine Foil and Gaffers Tape
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One reason for this list, beyond helping you to shop intelligently, is that the list can help you to make sure you bring the right things on location.

Metering

In teaching this class I keep trying to find ways to say that you have moved into the land BEYOND metering. When you use a strobe meter you get a response that tells you how to make a middle density, but it doesn't tell you how to make it look right. There is no automatic way to make it look right, only the application of brains can do that.

When I make a shot with strobes and a digital camera, the first thing I do is to put the camera on manual mode and I will pay no attention to the meter in the camera. The only things I pay attention to are the proof image on the camera back and the Histogram. More than metering, these two things tell

you about your image.

Let me suggest a plan for seeking the right exposure:

1. Set the shutter speed to the sync speed.
2. Set the aperture to your middle aperture, whatever that is on the lens you are using.
3. Take a picture. It will be wrong.
4. Move the aperture dial to let in more or less light based on test exposure 1, you can look at the Histogram to help determine how much to change the aperture, but the proof image should tell you if you need to change a lot or a little.
5. More test exposures and changes of light placement and light power until the strobes are right.
6. Change shutter speed to balance values between existing light and strobe light, this will require more test pictures.

This same technique will work if you are mixing strobes and daylight. This was why the Polaroid bill was so high with film cameras. But with digital, these test exposures are free, so we should not be afraid to make them.

This is the essential trick with strobes, to evaluate and change our images in search of the right levels for our lights and our exposures. With the Histogram and the proof image on camera or in the computer we have better tools for creating the right exposure than any meter could give us, but it does take repeated testing.

The digital camera also meters light color. This is what the White Balance is for. It is one of several ways to control color in the digital camera. For instance, if you are taking a digital image of a dramatic sunset on auto color the finished picture will probably be disappointing. If you manually set the color to the daylight preset, your camera has several presets; the sunset would have more of the color saturation you perceive. Of course if you shoot on Raw setting you have more opportunity to perfect your shot later.

The neutral gray card allows you to set the camera to the actual color of the light. So, for instance, I have set several gray card readings into my camera for the various strobes I own. This allows me to set my camera to my lights very quickly. If I am doing something with more complex light color, I take a shot of the gray card first, with the complex light. I will save this file and shoot my job.

When I am doing the post work, I will use this first gray card shot to balance

all of the images I did in this set. It is also possible to do a gray balance with the first shot in the camera and apply this balance to all the shots as I shoot them. This would reduce post work, but it does not improve my ability to control my shot.

Manufacturers now make warm and cool gray cards to give you additional control over color, but you would have even more control in raw. The standard gray card is an even flat gray, so it provides a neutral color response. The reflectance is not critical, but working in a middle density provides a better file than working at very light or very dark settings.

Slave Units

Getting your strobes to work together as a team is a neat trick. How do we get the rest of the lights to go off. There is a slave unit that is particularly handy for this purpose: an optical slave. These trigger a strobe when they are hit by another strobe. I use a lot of these to trigger additional strobes on a shoot. Slaves are generally a small package of electronics encased in solid plastic. They have different connectors for different strobes: pc, household, 1/4inch headphone style and hot shoe.

Optical Slaves
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The big problem is that slaves don't always work. Several reasons of this, first the slave may not "see" enough light. The simple way to deal with this is connect the slave to a sync cord and move the slave closer to another light. You can do this with a radio receiver also. You can also get slaves that are more sensitive; of course they cost more.

Another problem is that slaves and power packs, particularly packs that use the household connector type sync, need the plug put into the pack in a certain direction. The answer to this is simple: take the slave out turn it 180° and plug it back in. Sometimes a slave with a household connector will keep triggering. This means that the slave needs to be plugged into the pack in the other direction. Both problems with the household connector are a result of polarization in the sync circuit and the slave. Then there are slaves that stop working. I don't know why they do this but I check all my slaves every few

months to find out if they still work.

Lastly, there are situations when the strobe goes off when you don't want it to. If someone else uses a strobe it will trigger your optical slave, this is why optical slaves are not good at weddings. Sometimes other things will trigger slaves. I once had a problem with a flashing light on top of a forklift!

Optical slaves may be a little annoying but a handful of them will make impossible shots doable! This shot uses six lights!

Entry Way
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Hot Lights

This is a class about strobe lights, but I want to mention continuous lighting (lights that are always on). These lights were my most creative tools with film. Since film allowed for very long exposures, sometimes several minutes, and multiple exposures, hot lights were at their best. So a few notes about these lights are in order.

First, the names: *hot lights*, always on with a filament these lights get very hot. There are two kinds of hot lights: the first is **tungsten** (which is also a name for the group, same meaning as hot lights). This means a light that looks like a standard light bulb or slightly bigger. These lights do not maintain their color balance well; it can shift in less than 4 hours.

The other type of light is called a **quartz light**. These use the same filament as a tungsten light, but runs hotter in a fused quartz bulb. These are little bulbs that run very hot. If you want to make images out of separate photographs, fusing them in Photoshop, these might be a good choice. You will need a working area in which you can exclude all other light sources, or they will screw up your color. Quartz lights are usually too hot for portraits and hard on your model. But they can work great for product. If you have a digital SLR that has a capture problem on long exposures, these will not be good lights for you.

I used to use timers and multiple exposures to control these lights. The

timers are still a good idea. Multiple exposures will still need to be married in Photoshop.

I used dimmer boxes or timers to control hot lights. This was a very creative way to go light, but the variable long exposures don't work well with digital systems.

Smith-Victor quartz light
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Monolights

These are self-contained lights, they plug directly into the wall. In an average set-up you'll have one head wired to the camera and the other lights will be triggered by a slave. Perhaps the most important thing we'll see on any light is power, measured in watt - seconds.

Next we hope to see some control over that power output. Older units have switches that work and change the output in large amounts. Newer units usually have a continuous dial that can make very small changes. I think that most current units have a built-in slave to remotely trigger the strobe.

Monoblock units rarely show up in the used market, they haven't been on the market as long. That doesn't mean they are never on eBay, but certainly less often.

One important point here, if you mix and match brands, you will be mixing and matching color. Digital cameras, while able to balance to any one color, are not always tolerant of mixed color. Consequently, it is preferred to get lights from the same manufacturer so that the lights have the same color.

A couple of quick explanations: recycle is how long before the unit is ready to shoot again and tube color is a measurement of the expected color of the output. In theory, two units with the same color temperature will have the same color, so you could use them together. In practice, this is generally true. I am going to feature only one light from a manufacturer. It will have a power output near to 750 watt-seconds as possible. Every one of these manufacturers makes more products; you should visit their websites.

Manufacturers

In no particular order.

If I think it's worthless, I didn't list it.

Paul C. Buff, several different lines of lighting equipment including **Alien Bees**. These are the most recent offering from Buff. These seem to be another nice product. Most important thing to realize with equipment from this company: they believe their equipment is more efficient than others with the same watt-second rating. Consequently they provide more information about light output than their competitors. But of course you can't compare since their competitors don't provide the same information. I think they are probably right about the efficiency of their equipment. The website is at www.alienbees.com it has all the information about the lights. I am providing information about one light the B1600, 640 watt-seconds, 2 second recycle, weighs 3.7 lbs, built in slave, takes a grid spot, tube color 5600° and continuously variable light output over 5 stops. There is an external battery available for this system. Cost \$359.95.

The UltraZAP UZ1600 also from Paul C. Buff under his White Lightning brand has similar specs. The differences include an aluminum housing rather than a polycarbonate housing for the Alien Bee. Also 20 more watt-seconds. There are several more units at the White Lightning website: www.white-lightning.com. These units should have a high level of compatibility with the Alien Bee units.

Bowens has made monoblock lights for a long time, I have a couple that date to the 70's. Their new lights are very nice products, but the cost is higher than some of the competition. I am looking at a 1000 watt-second unit and the price \$993.50. It has a built in slave and a recycle time of 2.3 seconds. Recycle time tends to go down as power goes up. It has a continuously variable power circuit over a 5 stop range. The strobe has a color temperature of 5600°. Bowens also makes the Calumet Travelite, this is better value, and we'll discuss it in a minute.

Speaking of pricey, next I get to mention **Broncolor**. Made in Switzerland by people for whom perfection is not quite good enough. A 600 watt-second monoblock is priced at B&H at \$1992.50. This gets you better color consistency across different levels of strobe output. I'd like to tell you that you get something outstanding with this unit, but it's the same stuff, variable power over a 5 stop range, 2 second recycle, 5500° color temperature and so on. Broncolor website: www.bron.ch

Calumet, which I mentioned above. I own a Calumet Travelite, though not the current version. Cost of this unit is now \$569.99. I am discussing the 750 watt-second version of this unit. 2.1 second recycle and a 5 stop continuously variable range. Mine has a color temperature of 5600°; the current version doesn't list a color temperature. Weighs in at 7.5 lbs. Takes all kinds of accessories including a grid spot. I really like these lights; if I didn't have so many studio lights and packs I would get more of these. I

suppose that the other lights I'm discussing are very similar to use, but this is really a lot nicer than my Norman power packs. The Calumet website is at www.calumetphoto.com.

Comet, about all I could find out about this manufacturer is that they are available through B&H and the prices. The prices are not attractive. No unusual features are mentioned.

Dyna-Lite makes 2 monoblock heads, but the most powerful is only 400 watt-seconds. We'll look at more of their equipment when we get to studio strobes.

Patterson Stellar has a monoblock with 1000 watt-seconds. The usual accessories including variable power output over 5 stops; fast recycle between 1 and 2 seconds. Reasonable price at \$559.00 at B&H Photo, they say they are accepting orders for this, so support in U.S. may be weak. I have had some students with this gear who like it. More available in Europe and Australia.

Elinchrome, boy I'm so happy to say this company has a unit with a feature I haven't seen in the other lights, automated 1/3 stop bracketing. Of course I could change my aperture in the camera or use camera raw in digital to accomplish a similar thing. As I think about it this might be nice to show me how one light relates to another in the same set-up by varying only one light. Anyway a creative tool we haven't yet seen. Swiss made, so you know it is precise and pricey, \$1595.00 for the Micro 750, at Calumet They have some more reasonably priced units, but they don't have an extra feature. The website for Elinchrome is www.elinchrom.com.

Hensel. They have a website which lists some interesting products, 6 stop variable range and very large modeling lights, but I didn't find anyone who carried much of the line. B&H only has 2 units, Calumet none and Samy's none. Can you imagine trying to find a replacement tube? Anyway here's the website: www.hensel-studiotechnik.de/

Multiblitz, priced at \$849.95 at B&H for a 600 watt-second. The only thing that separates this from the class is a projector spot available for the unit called a Varispot. Check it out at www.rtsphoto.com/html/.

Norman has a 600 watt-second offering that fits this class. I want to cut to the chase here, after all I've looked at a lot of equipment today, and this light is not special. Priced at \$615.00 at B&H. I can make a case for this unit; IF you own Norman studio strobes (I own a bunch of them), then this is probably a good color match. Also it is compatible with Norman accessories, which is nice if you already own them. Norman website: www.photo-control.com.

Photogenic equipment, we might as well start with the website:

www.photogenicpro.com/. Something to keep in mind with this company is they have a reputation based on a very long time of providing strobe equipment to photographers, particularly people doing portraiture. I have heard a lot of people discussing the quality of the reflectors; they are reputed to be smoother than most manufacturers. With a 1000 watt-second available for \$756.00 at B&H their prices are not outrageous. These units have an 8 stop range that is a significant change from what I have seen so far. A 5400° color temperature is just a hair warmer than what we have seen. One problem with understanding the offerings of this company is that they make 3 different 1000 watt-second units; well at least they are committed to monolights.

B&H Photo sells an SP-Systems 640 watt-second light that has the virtue of reasonable price at \$349.95. This includes a light stand and an umbrella, such a deal. Unfortunately I can't find much information about this light. Variable range of only 4 stops, but this is done with a switch; it's not continuously variable. Slow recycle time, up to 5 seconds. It is 6lbs 9 oz which is pretty reasonable. One important thing to keep track of the sync voltage is 9 volts, which may be a little high for some digital cameras. Accessories are available for this unit. Basically you get less and you pay less. I would feel better if I could look at one and the slow recycle would bother me.

Speedotron only makes two monolights, a 500 and 1000 watt-second unit. If you happen to be using a Speedotron system already, these will look pretty good because your accessories all fit. Now it should be said that the best deal for power and quality in strobes is probably a used Speedotron studio system. By the way, studio system doesn't mean you can't use it out of the studio, for me it's a short way of saying "power pack and separate heads". So at \$748.95 these might make sense to expand a power pack based system. Speedotron's web site is www.speedotron.com. 5 stop range and 1.5 second recycle and 12 volt sync voltage I'd be careful of.

Sunpak has 5 units and they are priced to get attention. The 800 watt-second unit I looked at only costs \$334.95 at B&H. Recycle time is not particularly fast at 3 seconds, but quicker than the other discount head we looked at. The website for Sunpak is www.tocad.com/sunpak.html. The tube is rated at 5600° so it has color that might be similar to other units. This unit also has continuous power settings that is terrific, and variable over 5 stops. I have had reports from students about the Sunpak units that were less than positive.

Visatek, this looks like a very strong unit, but who knows? I just didn't find out much of anything about it on line. Cost is 559.95 for a 600 watt-second unit. Output is variable over a four-stop range. Available from B&H Photo. If you find a web site let me know.

Balcar, I've placed this near the end just to make sure this list doesn't turn out to be alphabetical. The website for Balcar is www.balcar.com/. A 750

watt-second unit is 699.99 at Calumet Photo. The only problem is the Balcar website lists all monoblock heads as being currently unavailable. They are updating their offerings in the monoblock line.

JTL is probably not the last supplier of monoblock heads I could find. But it is the last supplier of 600 watt-second or more equipment I did find! I have actually used some JTL equipment at a workshop I gave at Freestyle Photographic in Los Angeles. Output can be controlled in either .5 or .1 stop units. This has some interesting remote features. 5600° flash tube colors on the 800 watt-second unit I was using. This thing can be controlled from a computer keyboard, if you had all the system accessories to do this. 6.6 lbs for the 800 watt-second unit. \$659.95 at KEH www.keh.com/OnLineStore/, this is a reasonable deal for a little more technology, but I don't know if you'll need it. The fancy controls may not do you a lot of good except in the studio.

I think I have reviewed almost 20 strobe units here. Whew. What do I think about all this, well if money is the key to your decision look at Sunpak, but beware. However I think your best way to save money is to buy a used studio strobe system, we'll be there next week.

So then the question is what is a good value that is a combination of price and quality? I would be interested in the Alien Bee or the Calumet Travelite. Lots of my students have the Alien Bee and are happy with it. Really, the Travelite is in there because I have experience with it and I know it is a good unit.

Your Assignment: Light the Wig Head

First, post your equipment list to the Campus Square Q & A (with "Equipment List" in the title of the post). Remember, this is a list of the equipment/materials you plan to own, not what you've got. While you're in this class you should upload the list every time you make a change in your list. You will find that looking at others lists can be helpful. Remember to check what their goals are, it will help to understand their decisions.

Back to the wig head. Take pictures of your wig head, I call mine Wiggy, with a large light modifier. Please use an umbrella and or a light panel if possible, but you can bounce light off a wall if that is the only thing you have. The light panels I showed in the first week are really good tools, I use them a lot. Shoot the set-up as well as your image, like last week.

I want to see 2 wig head shots - the first with just a large light modifier (soft light) like the umbrella of light panel. This is pretty easy to do. The second wig head shot should use soft light, from a large light modifier and a second hard light. The hard light could be the clamp light alone. You can use regular aluminum foil to control the spread of the lights. The really difficult part of

this shot is to balance the amount of light from the soft and hard sources. You can do this by moving lights closer and further from the wig head and by blocking light with foil.

PLEASE keep in mind that the clamp lights can get quite hot. If you have strobes, you can do this assignment with them. It's good if the soft light can be the dominant light source and the hard light just used to accent the wig head. I also want to see a shot of your set-up on each shot. Please upload whatever information you can. Submit your **4 images** to the Campus Square by Wednesday, October 23, 2013.

If you'd like me to critique your assignment you can arrange that by payin \$25 on my website.

Please visit www.siskinphoto.com/workshop.php

I suppose you could also use it to make a donation.

Have a good time.

Thanks!

John

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