

Beginner Photography by Fred Tullock

Basic Camera Controls

Do not think you need to be part engineer to be a good photographer. When it comes to creating an image with a camera, you only need to get two things technically correct, Focus and Exposure. Most everything else is up to your creativity, and is subjective.

Focus: Always choose your point of focus deliberately.

- For a person or animal that is normally the eye.
- Whenever items of various distances all need to be in focus, such as a landscape, choose your point of focus about 1/3 into the scene. Higher f-stops will help get everything in focus.

Exposure, Proper exposure can be achieved with many combinations of Shutter speed, f-stop, and ISO, each with a different creative influence. Poor exposure will give either dark, or washed out images. The camera can set exposure automatically, but it assumes every scene is “average”, and can give poor results. See handout “What is Automatic?”

- Shutter speed = how long the camera sensor gets light
- f-stop (aperture opening size) = how much light the camera sensor gets
- ISO = how sensitive your camera sensor is

Basic shooting

Tripod is always recommended whenever possible.

When hand holding the camera, left hand under camera, left elbow to chest

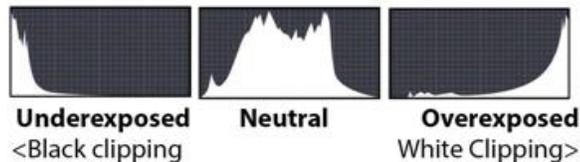
- Gently squeeze the shutter between forefinger and thumb, do not “push” the shutter.
- Shutter speed should be 1 / mm of lens, or faster when hand holding. 50mm lens = 1/50 (1/60) or faster.

The best light is normally the first and last hour of daylight.

Aperture priority is a good place to start for automatic exposure. ISO, use 100 when possible

Turn on “Blinkies”, to show white clipping alerts. Area that have no detail at all, may be OK if blinking

Histogram, learn how to read it on your camera screen:



Getting Creative with Camera Controls

How Shutter Speed, f-stop, and ISO creatively affect your image, in addition to affecting exposure. Remember if you change one, you need to compensate exposure with one or both of the others.

Stop of Exposure: Double or halving the exposure is called one stop. Each of these will increase exposure by one stop: ISO 100>200>400>800, f-stop 22>16>11>8>5.6, Shutter speed from 1/500>1/250>1/125>1/60.

Cameras often adjust exposure in increments of one third stop.

- Shutter speed
 - A slow shutter speed can make a waterfall smooth and silky (1/2 second)
 - A fast shutter speed can stop a hummingbirds wings (1/1000 second)
- f-stop (aperture opening size)
 - A small f-stop (f-4) can have just one rose in a bush to be in focus, while others are blur (called Bokeh)
 - A large f-stop (f-22) may allow everything from your subject to infinity to be in focus. This is called large Depth of Field (DOF)
 - Hint to remember: Big f-stop = big area in focus
- ISO
 - Not directly used for creative control, but to correct exposure if the other controls are changed for creative reasons.
 - High ISO may yield grainy images, but sometimes necessary in very low light (ISO 4000)
 - Low ISO gives cleanest images (ISO 100)

Choosing a subject

“Certain things capture your eye, but pursue only those that capture your heart.” Old Indian Saying,

“Photography is not about the thing photographed. It is about how that thing looks photographed.” Garry Winogrand

Finding the right vantage point for a photograph may be the most important part of the photography. -Peter Vanderwarker

Enjoy attempting to make extraordinary images of ordinary things

Slow down, be aware of what is around you; look up, down and behind you. See everything.

When a subject captures your heart, spend time with it, look deeper, look closer. Look, listen, feel, even smell. Capture the essence of your subject. Look deeper emotionally as well as physically. Look at your subject from every side, top, bottom and every angle.

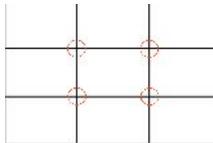
When photographing people, always strive to honor them. Ask permission, and offer to mail or email an image to them. Carry business cards with your email address. Photograph people with sun behind you, unless reflecting or providing light to faces. Or better yet, have them in the shade. Use shutter speed 1/125 or faster, as people tend to move.

Composing an image

Composition: Think of it as designing an image. Not “taking” a picture.

Rules for composing an image, good to learn and then learn when to ignore them, and follow your heart instead:

- Rule of Odds: Odd numbers of the same subject are better, three is often best
- Rule of thirds: Place most important elements on the imaginary lines, or intersections:



- Keep the horizon perfectly horizontal. But, influential photographer Garry Winogrand’s images rarely do.
- Avoid cutting off body parts below the knee and elbow
- Fill the frame
- Simplify
- Look For Symmetry/Patterns

Composing tools

- Have a strong subject, determine what the most important element is
- Observe contrast of tones or color for composition
- Create Depth by use of leading lines, foreground elements, or shooting from low angle
- Balance shapes and spaces with other shapes and spaces opposite them
- Include a foreground element, often bottom of frame, or forming a frame around subject
- Background blurred
- Get on same level as subject to show their point of view
- The eye finds the brightest spots first, so only include them intentionally
- Watch the edges for distracting elements
- Alter what & how you shoot, depending on the light. Midday light is harsh on many subjects, but might look great reflecting on water
- Quantity of shapes, most common 2-4, rarely exceed 6
- Light on object edges emphasizes shapes
- Don’t make composition too formal
- Abstracts can be great images

More composing thoughts:

- Three Elements of a Photograph: Composition, light, and the moment
- Choose your distance from your subject, that determines your perspective, then choose your lens focal length

Design elements:

- Line, shape, Perspective & Texture
- Lines create shapes, and divides the image

Accessories

- Tripod is not only good for slow shutter speeds, but after viewing the image, you can make small changes to it for the next image. Avoid tripods with spreader between the legs, you can't move legs separately, as needed on rough ground
- Tripod head, ball type is smaller, lighter, and faster to use than pan/tilt head. Quick release: either Arca swiss style (Available from multiple manufacturers) or Monfrotto 200PL
- Cable release or wireless remote, so you don't shake the camera when clicking the shutter while using a tripod. Could use delayed shutter instead. For mirror cameras (DSLR), also use mirror up to lessen camera shake while using tripod.
- High quality Clear filter to keep on lens as protection
- High quality Circular polarizing filter, to cut reflections, reduce white cast on foliage, and add contrast to sky if 90 degrees from sun. Remove the clear filter when using it.
- Second battery, and have it charged and with you when shooting.
- Second memory card, more if traveling
- Micro fiber lens cleaning cloth
- If you shoot many vertical images, a custom "L" camera bracket of Arca-Swiss style is extremely helpful
- Water shoes or Muck boots, if shooting rivers and ponds from the banks, you could miss the best vantage point
- Rain gear and waterproof shoes; rain, mist, dew and fog often support great images

Resources

Keep shooting, for motivation join a photography club, such as Litchfield Hills Camera Club www.Lithillsc.org which meets in Harwinton.

Look at other peoples photographs, what do you like about them? Try to figure out their technique

<https://digital-photography-school.com/>

<https://kelbyone.com/>

www.johnpaulcaponigro.com/

Editing Software: Photoshop \$10 month, Photoshop Elements \$80 purchase

For Future Reference

Know your equipment. Suggest sitting down with your camera and manual, and just play until you know what many of the controls are. Know how to control focus and exposure, then go out and create some images. Fluency allows you to express easily and well.

Backup your images: Keep copies of images on two separate drives at home to protect from hardware failure, and a third drive off site to protect from theft or fire.

Any Camera can make a great image. Any Camera can make a lousy image. You make the image. However many types of images do require a higher end camera, for example in low light such as night sky.

jpg settings: If you only shoot jpg images, make sure you are set for largest number of pixels, and highest quality setting. If you set your camera for RAW, you have much more ability to get detail in the darks and highlights if you manually process them, you can later export as jpg. It is not practical to share RAW files. Most camera have the option of shooting both RAW and jpg.

Analogy: Shutter speed, f-stop, and ISO

- Shutter speed = how long the camera sensor gets light
 - If you were filling a sink with water, it is how long you run the water
- f-stop (aperture opening size) = how much light the camera sensor gets
 - If filling a sink, it is how much you open the facet
- ISO = how sensitive your camera sensor is
 - If filling a sink, it is how big the sink is.

Depth of Field (DOF): Controlling how much is in focus

Everything in focus

- More likely at high f-stop, (small aperture opening) such as f22
 - Hint to remember: Big f-stop = big area in focus
 - Most lenses are their best at about f8, but use any f-stop to meet your vision.
- More likely when everything is about the same distance from the camera

Very little in focus

- More likely at small f-stop (Large aperture opening) such as f4
 - Hint to remember: small f-stop = small area in focus
- More likely with some objects much closer to the camera than others in the same scene
- More likely when magnifying tiny objects
- More likely when using a long focal length to magnify objects far away
- More likely with larger camera sensor

hyperfocal distance: The closest focusing distance that allows objects at infinity to be acceptably sharp. Objects at half the focus distance will also be acceptably sharp. There are charts that provide these distances.

What are the mm numbers on a lens about? The human field of view is often said to be equivalent to about a 50 mm lens on a camera with a full frame sensor. If your sensor is smaller, look at your camera & lens specification for “35mm equivalent”. What that means is:

- 100 mm lens will make the subject twice the size, 300mm will make the subject 6 times the size.
- 25mm lens will make the subject half the size, and include twice as much background

Sensor size, when choosing a camera, this is one of your first decisions to make.

- A “full frame” sensor is the same size as the negative of an old style 35 mm film camera.
 - Cameras and Lenses are expensive, large and heavy
 - Best format for extreme wide angle images
 - Best format for very narrow depth of field
 - The most light sensitive format, best for Milky Way or other low light images
- Crop sensor cameras such as offered by Nikon and Canon have crop factor of about 1.5
 - Cameras can use “full frame” lenses, or smaller, lighter, less expensive lenses made for that format.
 - More Depth of field than full frame cameras
 - A 300mm lens acts as a 450mm lens, helpful for bird photography
- Micro Four Thirds format, has a crop factor of 2
 - Lenses are interchangeable between Panasonic and Olympus, and also lens manufacturers such as Sigma
 - A 300mm acts as a 600mm lens, even better for bird photography
 - Best format for wide depth of field images
 - Cameras and lenses are even smaller and lighter than the 1.5 crop factor systems