Cameras, Lenses, and Related Hardware

Cameras, lenses, light meters, strobes, filters and steadying aids are important tools for photojournalists. You must become familiar with your gear, but don’t become enamored of it for its own sake. It should never become a burden, or hinder your goal of communicating. A normal lens for a camera is one whose focal length—the length from its optical center to the film plane when it is set at the greatest distance at which it can be focused (termed infinity)—is roughly equivalent to the diagonal of a frame or imaging material used in the camera. Thus, for the 35mm camera, a normal lens is 40mm to 50mm because the film’s diagonal is 43mm. Different photojournalists prefer different focal lengths. As focal length becomes longer, the size of the subject on the film or digital imaging device becomes larger and the view becomes narrower. Likewise, as focal length becomes shorter and the view widens, the size of the subject becomes smaller. Subject size doubles when the focal length doubles.

Wide-angle lens is a short lens whose focal length is less than that of a normal lens. (Example: 17mm, 24mm). Wide angle can be used to 1) record panoramas 2) get physically closer to subjects 3) Emphasize or exaggerate subjects near the lens 4) obtain greater depth of field.

Telephoto lens (Example: 300mm) is used to shoot something far from the camera. The image will be larger. You can also use telephoto lenses to great advantage to emphasize relatively nearby subjects by blurring their foregrounds and backgrounds. You can shoot close-up images of people and animals without intruding on their personal space. A lens of 300mm or greater is very useful for “cleaning up” selected scenes because depth of field is much more limited than with other lenses, thus throwing objects in the foreground and background out of focus.

Zoom lens (Example 17mm-35mm or 70mm-200mm) is a single lens that allows you to shoot a variety of views. Before buying any sophisticated lenses, a photographer must make a decision about autofocus lenses. The letters AF (for autofocus) will be part of these lenses’ description. If your funds are limited, you can probably do nicely with an inexpensive normal lens and a basic 35mm single-lens reflex camera body or an equivalent digital camera outfit.

Light-Controlling Systems

However simple or sophisticated your gear may be, you should have two light-controlling systems: shutter speed and f-stops. The shutter speed system, typically located in the body of the camera, allows you to leave the shutter open for more or less time—to control movement of subject and camera and to help determine exposure and depth of field. The f-stop system in the lens works in tandem with the shutter speed system. F-stops allow photographers to control the amount of light passing through lenses by
creating smaller or larger openings in the lens. The f-stop system also allows photographers to control the amount of sharpness in front and in back of the point of critical visual focus, the point that is likely to draw the eye. This range of sharpness is termed **depth of field.**

**Light and Color**

Without light, photography is not possible. It is the key and fundamental ingredient. Light is a major composition tool. It will be your paintbrush and is a most willing tool in the hands of the one who studies it with sufficient care. Learn to appreciate light; it will be a key factor for creating.

Light is a small portion of the electromagnetic spectrum. It is the electromagnetic waves that the human eye can see. It is a fundamental force of the universe that adds luster and excitement to human existence. Electromagnetic waves that people cannot see include the gamma rays used in treating cancer, microwaves used in cooking food and transmitting signals, and radio frequency waves used to bring voices and pictures from far away. Our concern here is with only a few waves in the spectrum—those that people can see, the visible spectrum. These few waves allow photographs to be made and people to see them. Light truly is a blessing for photographers. Light and the way it strikes subjects—creating highlights, mid-tones and shadows, emphasizing or minimizing, creating an ambiance of tenseness or relaxation—is an aspect of composition that every photojournalist must study at home, at work, at play. Heightened sensitivity to light and its interaction with subjects comes with practice. Look for light and shadows and color.

**Picture-Taking Considerations**

**Point Source Light:** Comes from one primary source. The sun is an example.

**Front Light:** Plain vanilla describes front lights. It typically is not visually exciting, and can be “flat”.

**Side Light:** Comes from one side and leaves the other side of the subject dark. Intriguing, dramatic.

**Back Light:** Comes toward the photographer from behind the main subject. Don’t be scared of this light.

**Top Light:** Comes from above your subject, fluorescent, ceiling lamps.

**Diffused Light:** Reflects off one or more secondary objects or passes through a material that diverts and scatters it before it strikes your subjects. Creates a soft ambiance.

**Silhouettes and Shadows:** Exposing for front lighting when the subject essentially is back lit produces an image with little no detail in the part of the subject that is toward your camera. Take care not to aim the lens directly toward the sight source, unless you want a star effect. Silhouettes emphasize form rather that detail. Shadows can convey messages in a clear an eye-catching way.

**Intensity:** How strong is the light source?

**High Key and Low Key:** Light tones are termed high key. Dark tones are low key.
Ratio: Lighting ratios are important in expressing ambiances and can affect reproduction.
Natural Light: Emanates from the sun or reflected from the moon.
Artificial Light: Emanates from a manufactured source.
Existing Light: Present at scene without photographer supplying.
Imported Light: Derives from one or more sources supplied by photographers.
High Intensity: Enough light for an exposure shorter that 1/60 at f/8 using ISO 400 speed film.
Low Intensity: absence of enough light to allow an exposure shorter than 1/60 at f/8 using ISO 400 speed film.

Composition and Other Points to Consider

Composition is an integral part of the fabric of images. Composition helps convey messages and becomes part of them. It also significantly affects how closely photographs approach or deviate from real life. At a minimum, composition is the putting together of two or more elements of a scene so they support each other, thereby enhancing your message.
But it’s much more complex that that.
Composition means using all available techniques in pursuit of storytelling images that conform to the photographer's fundamental approach.
Photographers must be lookers. Before they can put an image together, they must know what there is to put together. This is the ability to recognize that which others often miss, commonly termed photographic seeing.
It is part of the photographer’s job to see more intensely than most people do. The photographer must have and keep inside something like the receptiveness of the child who looks at the world for the first time, or of the traveller who enters a strange country.
Photojournalists must constantly look at things far away, close up and in the middle distance. Be aware of the way light strikes subjects, the way is rounds or flattens them, enhances or diminishes them. They study shadows—the way they fall, and the way they relate to the light that helped create them. Photojournalists must know how colors change from early morning to late evening. Photographer Henri Cartier-Bresson said: “the photographer’s eye is perpetually evaluating.”
See with intensity and purpose. It must be a way of life. Learn to hone your people-watching skills.
The concept of composition is entwined with the concept of creativity. You can learn to cultivate your creativity. One definition of creativity is “the ability to transcend traditional ideas, rules, patterns, relationships, or the like, and to create meaningful new ideas, forms, methods, interpretations.” Another way to put it is to be different and to make that difference count by producing out-of-the-ordinary eye-catching, truthful images.
**Techniques**

Techniques tend to overlap, but let’s divide them into categories that correspond to their origin: photographer-based, equipment-based, and subject-based. Photographers must always consider nuance. Little things, such as moving to the left or right, bending down or stretching up, waiting a moment more, or moving ahead, make all the difference between superb images and mediocre ones. Two composition techniques are so important, light and color (more on them later.)

**Photographer-based techniques:** Approach; One way for photographers to approach truthful essence is to avoid interjecting themselves into the situation being photographed. Try to develop the secret atmosphere of the invisible eavesdropper who watches. **Distance:** Select the distance for the main subject that best tells your story. Far, close, and in between distance must be considered. **Position:** Learn to cherish unusual position. Go high, get low; bend those knees. The result will be eye-catching, intriguing and exciting. Look for the odd perspective. Become a giraffe or a worm.

**Equipment-based techniques:** **Angle:** Learn to vary the lens you choose to use. Try a wide angle, or a telephoto lens for different results. Which lens to use for any specific situation is a decision that photojournalists make regularly. This decision alters the reality presented to viewers. A wide angle can give a sense of participation and involvement. Telephoto will allow you to get close without actually being there. **Focus:** What you choose to make tack sharp will be a major tool for emphasizing or isolating part of scenes. It is particularly effective with telephoto lenses. You can blur out an entire background with long glass. **Frame Location:** The location of the elements of the image in the frame can help or hurt your message. The Rule of Thirds mandates that the main subject not be in the center of the frame, and ensures that they are not near or on the edges. Main subjects in the middle of frames usually are static and therefore boring. However, there are no absolutes. Lines, objects, space, animals or people can be used to guide viewers toward you main subject, and are effective composition tools. The S Curve can be one such line. The eye follows the curve, ultimately reaching the main subject. It can be a very pleasing way of framing. **Juxtaposition:** combining two or more main subjects in a scene so that the resulting messages differs from one conveyed by each alone can be very effective. It can also be very risky. **Panning:** This involves movement and getting across the idea of movement in a still photograph is a cool trick. The “safe” way to picture movement is to use an extremely short shutter speed so that you are assured of stopping all motion. Try taking more of a risk and put the illusion of motion in your image. Try to coordinate the movement of the camera, set a relatively long exposure time, with the movement of the main subject. Success depends on many tries, and yields a relatively sharp
main subject with other area being not sharp and implying sweeping movement. This is good, for example, for something like a bicycle race. Try shooting at 1/15 of a second and move the camera with the riders in the same direction.

**Subject Based Techniques**

**Balance:** Equal volume or weight on each side of the center of the picture. Symmetry means both side may be more or less a mirror of each other. Asymmetry is unlike but equal.

**Expression:** Work to capture the inner feeling of your subjects. Get beyond clichés don’t assume anything. Here are some inner feelings and how they may manifest: Joy, happiness, amusement, embarrassment, nervousness, or futility = **Laughing** Sadness, joy or futility = **Crying** Disapproval or unhappiness = **Scowling** Approval, happiness, amusement or nervousness = **Smiling** Never assume what people are feeling. Ask them!

**Form:** Always be mindful of the acronym KISS—“Keep it simple, Silly!” This does not mean images may not be complex. It means to discard everything that does not support your message. The message should be as simple as possible, even if it is complex in nature.

**Irony:** Try working the unexpected or the unusual into your frame, with a dash of humor of low-key sarcasm.

**Lines, Shapes, and Directions:** This list is almost endless. Here are five important lines, shapes and directions to consider: 1) **Vertical** implies action, conflict 2) **Horizontal** implies rest, relaxation, serenity. 3) **Diagonal** implies movement, dynamism. 4) **Curved** implies pleasantness fulfillment. 5) **Leading,** actual or implied, of any direction guides viewers to the point of focus.

**Shutter Speed System**

Shutter speeds common to most camera bodies are 1,2,4,8,15,60,125,250,500,and 1000. All are fraction of a second except 1, which is a full second. For example, 4 is one fourth of a second. For photographic purposes, 1/30 is a long period of time, and 1/1000 is a short period of time. Your camera probably also has a bulb, or “B” setting that allows the shutter to remain open as long as the shutter release is depressed, and a time or “T” setting that allows the shutter to stay open until the photographer presses the shutter release again.

**F-Stop System**

F-stops allow you to vary the amount of light that passes through the lens. A series of metal leaves works to vary the size of the nearly round opening in the lens. The leaves are known collectively as the diaphragm and the opening made by it is the aperture. A classic f-stop numbering system is 1.4, 2, 2.8, 4, 5.6, 8, 11, 16, and 22. The larger the number is, the smaller the opening in the lens.


**Systems Working Together**

Photographers use the shutter speed and the f-stop systems together for two purposes: to control the amount of light striking the film (or sensor) and to literally or creatively interpret the scene. For example, by freezing or implying motion, making everything in the picture appear sharp, or making everything except the main subject appear blurred. Bracketing help ensure that proper amount of light strikes the film plane. The second purpose of using shutter speeds and f-stops together is purely creative. For example, should the background be blurry? The foreground? Or both? Should focus, movement, or both help create the intentional blurriness? You can use depth of field and movement to make creative images that reflect your individual interpretation. Shutter speeds and f-stops are easy to use. The amount of light striking the film is double or halved from one number to the next. Imagine an empty bucket and a water faucet. If the faucet drips for a long time, the bucket becomes full. If the faucet is opened wide, the same bucket fills with the same amount of water but in a much shorter time. Essentially this is how shutter speed and f-stops work, except that instead of water, photographers use light, and instead of a bucket they use film or digital recording devices.