

Camera Controls

1. What basic parts do cameras with lenses share?

- 1) a light-tight box or body
- 2) an aperture or lens opening to control light reaching the film
- 3) shutter to control length of time that film is exposed to light
- 4) trigger to release shutter
- 5) viewfinder to look through and frame pictures
- 6) winding mechanism to advance film through camera

2. What are the six basic systems of focusing found in different types of cameras? List and describe each one.

1) fixed-focal — no device on lens to control focus. As long as subject isn't closer than 5 feet, the image is sharp.

2) estimation of distance and “zone focus” — A camera without a device to see actual focusing, it is pure guesswork to “zone-focus” scale on the camera.

3) rangefinder — An opto-mechanical device that produces two images in the viewfinder of camera. To bring camera into focus, rotate lens until two images coincide with each other.

4) twin-lens reflex ground glass — used in some larger roll film cameras. These cameras have two lenses, one for focusing and the other for exposing the film. The lenses are attached to the camera so they move simultaneously.

5) single-lens reflex (SLR) — Most popular — allows photographer to view and focus a subject through the actual picture-taking lens. Photographer sees same image that the film records.

Name refers to single lens which forms image that you view and image film records.

6) automatic focus — Most recent technological development in cameras. Three types of automatic focusing systems are the 1) sonar autofocusing used by Polaroid instant cameras;

2) infrared autofocusing used with most 35 mm point-and-shoot cameras; 3) phase-detection, or phase-contrast, sensors are used in most single-lens reflex cameras.

3. What is parallax? All cameras except SLRs and view cameras have viewfinders that are separate from the actual picture-taking lens. The distance may only be one or two inches, but it creates problems. You see one image through the viewfinder and the camera lens sees it at a slightly different angle. This increases as you get closer to the subject. This causes heads to be cut off in pictures!

4. How do some viewfinders counteract parallax? Some viewfinders are marked off with corners called parallax correction marks. The image you want should fall within those marks. Otherwise, the photographer must be aware of the problem and compensate for it by moving further away from the subject.

5. Discuss overexposure and underexposure?

Overexposure results when too much light has been allowed to reach the film.

Underexposure occurs when too little light comes through.

6. What is the f-stop?

The different size aperture openings are the f-stops. The f-stop ring is located around the lens of the camera. It regulates the amount of light that passes through the lens and determines sharpness of the image from foreground to background. It is the same as aperture.

7. What is the shutter? A shield that uncovers the lens to allow light to strike film and then covers it to keep out the light.

8. What does the shutter control? Shutter controls the length of time the film is exposed to light and is the major factor determining whether moving subjects will appear sharp or blurred in a picture.

9. List the shutter speeds ordinarily found on today's cameras. 1,000, 500, 250, 125, 60, 30, 15, 8, 4, 2, 1, and B

10. How much more light is admitted by selecting 1/125 instead of 1/250? Twice as much light is admitted.

11. What is the B setting and how is it used?

The exception to shutter speed times is the B setting. It is a variable speed. Also known as "bulb" position. The shutter remains open for as long as the shutter-release button is depressed. This position is used only for long exposures.

12. What do faster-moving subjects require to "freeze" the action? They require faster shutter speeds.

13. The farther away a moving subject is from the camera, the slower the shutter speed needed to freeze its motion.

14.. What is panning? Panning helps create the impression of speed or movement in a photograph, by tracking the movement of a subject by swinging the camera in the same direction as the subject. It allows you to make sharp images of very fast action subjects at relatively slow shutter speeds such as 1/30 or 1/60, although the background will probably be blurred.

15. How do you avoid blurred images caused by camera movement? Discuss fully.

Blurred images are usually the result of camera movement during exposure. To minimize blurring, the camera should be held as steady as possible during the exposure by using tripod at shutter speeds of 1/60 and slower or keep arms against body (not in midair).

16. What is the aperture? An adjustable opening made by a diaphragm inside the lens. The aperture has two main functions: it controls the amount of light that passes through the lens and determines the sharpness of the image from foreground to background (depth of field).

17. What are some common f-stops? 22, 16, 11, 8, 5.8, 4, 2.8, 2, and 1.4

18. How much more light is admitted by using f/2.8 instead of f/4? Twice as much.

19. What is depth of field? The zone of apparent sharpness that extends ahead of and behind the subject on which the camera is being focused.

20. The smaller the aperture, the greater the depth of field.

21. What is focal length?

The distance between the optical center of the lens, when focused at infinity, and the focal point, where the image is in focus in the camera. The film in the camera is positioned at the focal point, also known as the focal plane.

22. What three factors determine depth of field?
1) lens aperture 2) distance to the subject 3) focal length of the lens
23. How are film speeds expressed? Speeds are expressed in terms of ISO numbers. These numbers appear on the film carton and on the cassette, cartridge, or backing paper.
24. The higher the speed, or ISO number, the more light sensitive or “faster” the film. The lower the speed, the less sensitive or “slower” the film.
25. The selection of an aperture and a shutter speed will always work together to determine exposure.