

Video Equipment and Video Shot Composition¹

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This publication about video equipment and video shot composition is the third of a four-part series on developing effective video production practices. This series also covers video production, scriptwriting, and video editing.

Introduction

You should become as familiar as possible with the video camera you plan to use and how best to use it in creating effective video shots. For a basic video shoot, the minimum equipment requirements are a video camera, a microphone, a light source, and a tripod. Composition refers to the types of video shots you will shoot. This publication provides an overview of equipment and composition techniques.

Video Equipment

VIDEO CAMERA

Video cameras come with a wide variety of features. Most come with color viewfinders that can extend from the video camera. Some will shoot well in dark areas with minimal lighting. All have a microphone built into the camera, but some have an audio input for an external microphone. All video cameras also come equipped with a zoom lens, which smoothly changes from a long shot (wide shot) to a close-up view without moving the camera or the object you are shooting.

Video cameras shoot in one of two **aspect ratios**, which are the width-to-height proportions of television sets. The aspect ratio for a standard television screen is 4 units wide by 3 units high (4 x 3). For widescreen video, the aspect



Figure 1. Artist and videographer Stephen Poff beta tests a movie slate app for his iPhone

Credits: Photo by Stephen Poff (CC BY-NC-ND 2.0) <http://flic.kr/p/7vZTuH>

ratio is 16 x 9. Almost all new video cameras can change between these two aspect ratios.

MICROPHONE

Sound may be the least-thought-about component in a video shoot, but it is just as important as the visuals that are recorded. Good sound gives your program that “little extra.” How many times when you watch home movies have you heard a lot of wind noise because the microphone was on the camera and the person who was talking was 20 feet away? Use microphones that can get close to a person’s face.

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Microphone types include *lavalier* (also known as lapel or clip-on microphones), *hand-held*, and *shotgun*. Lavalier (pronounced LAH-vuh-leer) microphones have a very limited range and are small so they are not easily seen in a video shot. They clip onto shirts and ties. Hand-held microphones are used in everyday video production, especially for television news for “person-in-the-street” interviews. Shotgun microphones are very sensitive and can pick up sound over a great distance. Shotgun microphones are usually very long and slender and often are seen attached to video cameras at sporting events.

Keep in mind that many inexpensive consumer-grade video cameras do not have places where you can connect external microphones. Cameras with microphone inputs usually cost more, but the cost is worth it if you want the audio to sound good. If you do not have external microphones, such as lavalier, hand-held, or shotgun microphones, all you have to record audio with is the internal microphone on the camera. For some purposes, that microphone will be fine, but if you want to record narration or an interview, you will pick up a lot of wind noise with just an internal microphone.

LIGHTING

A *light source* also needs to be taken into account. If there is not enough light, you will not be able to see a picture in your video camera’s viewfinder. If the video program is to be shot outside, then you will use natural lighting. *Natural lighting* is any non-manmade light, such as sunlight or moonlight. In sunlight especially, you will have to contend with harsh shadows at various times of the day and cloud cover. You may need a *reflector* (a large silver screen) to direct sunlight to fill in shadows on people’s faces.

Lighting provided by any non-natural source is called *artificial lighting*. If the video program is shot indoors, you likely will need portable lights, especially if you are going to shoot an interview. Regular indoor lighting, such as lighting from fluorescent bulbs, usually does not provide enough illumination for interviews. Portable light kits (a light, light stand, and a light kit case) can be purchased at most photography or video equipment stores. If you use a portable light kit, you should bring extra extension cords as well.

Lighting also can be categorized as to the strength of the light. *Directional light* produces a sharp beam of light, resulting in harsh shadows. Examples of directional light are direct sunlight and strong artificial lights. *Diffused light* refers to wide, indistinct beams of light, which produce soft

shadows. Examples of diffused light are light on a cloudy day and fluorescent lamps.

If at all possible, use a tripod when interviewing a person, panning the camera (moving left and right), or tilting the camera (moving up and down). The shots will be much smoother and much less shaky. You also may wish to use a one-legged monopod for video cameras that do not weigh much.

Video Shot Composition

Shooting video consists of more than just pointing a video camera at a person or object and hitting the record button on the camera. To become a better videographer, you will need to understand and implement the techniques of video shot composition presented here.

Video shot composition consists of camera shots and angles, shot sequencing, camera movement, framing, and continuity. Video shot composition is an extremely important skill to learn. The more you practice, the better you get.

Camera Shots, Camera Angles, and Shot Sequencing

Camera shots are named for how much of the object of interest is in the video screen:

- The widest shot possible and zoomed out as far as possible and showing the object of interest in its surrounding or setting is called an *establishing shot* or an *extreme long shot*.
- A *long shot*– also called a *wide shot*– is a fairly long (or wide) shot of the object of interest.
- A *medium shot* is usually a shot of a person that extends from below the waist to a little over the head.
- A *close-up* is usually a head-and-shoulders shot of a person, and an *extreme close-up* is a super-tight shot, such as of the mouth, nose, and eyes. Try not to overuse such dramatic shots. Save them for a few times when you want maximum impact.

Camera angle refers to the different angles at which you can hold a camera in reference to the object of interest:

- Most of the shots you will shoot will be *eye-level shots* because that is what people are used to seeing. Video interviews will almost always be shot at eye level (also called a *flat-angle shot*). Rather than always holding

your camera at an eye-level shot with the person you are shooting, try putting your video camera on a tripod, table, ladder, or the floor to get some of the other camera angles described next.

- You can get close to the ground and shoot up at your subject. This is called a *low-angle shot*. A low-angle shot looks up at the object of interest, creating a dramatic look, where everything looks magnified.
- Holding the camera high and shooting down is called a *high-angle shot*; everything in the shot looks minimized or diminished.
- To give your viewers a sense of identification with your main subject, use a *point-of-view shot*, which simulates the view the actor sees as the actor moves about. You simply walk or move your camera as if you were the actor.

Shot sequencing is how you organize the different types of shots and angles. You should always try to shoot a series of long shots, medium shots, and close-ups. Use different-angle shots sparingly. For example, you first could shoot a long shot, which shows the object of interest in its surrounding or setting. Then shoot a medium shot, where you have zoomed in closer on the object of importance. Finally, shoot close-ups, where the object of importance fills the entire screen. This way, you draw the viewer into the video program. Shooting in a shot sequence structure also provides you with more shot choices during the editing process.

Avoid jumping from a long shot directly to a close-up, unless you want to startle your audience. Instead, use a medium shot to gradually draw your viewers into the dramatic close-up. A sequence might go like this: long shot, medium shot, close-up, close-up from a different angle, medium shot, close-up, another close-up, medium shot, long shot.

Camera Movements

The next aspect of composition is camera movements. *Camera movement* refers to physically moving the video camera left or right, up or down, or to the zooming in or out of the video camera's lens. A **tilt** is a vertical movement of the camera. A tilt points the camera up or down. Tilts are usually used to show an object's height. A **pan** is the horizontal movement of the camera. A pan moves the camera left or right. You should practice panning or tilting at various speeds until you find the speed that works best for you. A **zoom** is not an actual physical camera movement, but it is placed in the camera movement category

because the camera's lens is moved, even though the camera itself does not move. A zoom is a change in the focal length of the lens. When you "zoom in," the shot gets tighter on the subject. When you "zoom out," the shot gets wider.

Only use a camera movement when it is necessary. Do not use a pan, zoom, or tilt with every shot. This is a characteristic of a novice videographer. Use zooms, pans, and tilts only when you want to draw attention to a part of the video camera frame. Instead of zooming, panning, and tilting, first shoot a long shot. Then stop the recording. Adjust the shot to a medium shot, then start recording again. Refer to the discussion of shot length in the "Other Video Considerations" section later in this publication for more information on how long your camera movements and shots should be.

Framing

Framing refers to the way the various elements within the video screen are arranged. The videographer must decide what angle to shoot from and what portion of the scene to include in the shot.

Make sure that you properly compose your shots so that there is an appropriate amount of room above the person's head. Usually, this is just a little space between the head and the top edge of the screen. This is called **head room**. Objects or a person's head near the top edge of the frame tend to seem crowded. Allow a bit of extra space above a person's head to avoid this appearance.

When actors face left or right, it is a good idea to position the video camera so that there is a little more space in front of them than behind them. Do not put them dead center. You also want space in front of them if they are walking. This space in front of a person is called **lead room**. If the shot is a close-up of someone's head, this space also is called *nose room*. If you are recording something that is moving, such as a bicyclist or a speeding car, provide enough lead room in front of the bicyclist or car so that it does not look like the bicycle or car is running off of the screen.

Another aspect of framing is to watch your backgrounds. A telephone pole in the distance can appear to grow out of a person's head if the shot is framed incorrectly. Brick walls are busy-looking backgrounds. Try to avoid using plain white walls as backgrounds. Most important, find backgrounds that relate to the topic being discussed. If a person is talking about cattle, then try to interview the person with cattle in the background rather than shooting the interview in an office.

Continuity and Jump Cuts

Continuity means that each shot in your video logically flows from the one before it. It is fairly easy to explain continuity mistakes. For example, have you ever watched a movie where an actor had a drink in one hand and it mysteriously switched to the other hand in the very next shot? Or have you seen a television program where an actress had her arms crossed in front of her in one shot, and in the next her arms were at her side? This is called a *continuity error*. The two shots do not flow logically. To avoid this simple mistake, assign an assistant who can follow along on your video shoot to ensure that continuity is maintained.

Another way to maintain continuity is to make sure your actors are moving in the same direction from shot to shot. For example, if you are shooting a cops-and-robbers chase scene, make sure everyone is going left to right (or right to left). If the cops are going right to left, and the robbers are moving left to right, you will confuse your audience when you edit the shots together. It will look as if the cops and robbers are about to collide.

Similar to a continuity error is the **jump cut**. A jump cut occurs when a shot shows the same prominent person or object in different angles or different locations in back-to-back shots. This makes the two shots appear to “jump” because of the way the shots are framed in relation to each other. You create a jump cut when something in the scene has changed positions since you stopped and restarted the video camera. To minimize jump cuts, shoot several shots that do not contain the prominent person or object.

The easiest way to avoid continuity errors and jump cuts, though, is by shooting cut-ins and cutaways. A *cutaway shot* is a reaction shot showing another actor or subject in the scene, usually reacting to the main action. If you shot an interview sequence, a cut-away shot would be of the interviewer nodding. In sports, it could be cutting away to shots of cheerleaders or the crowd after your team scores.

A *cut-in shot* is usually a close-up shot designed to bring the view in closer to the subject. In essence, a cut-in shot is the same concept as the cutaway, except instead of “cutting away” from the action (such as a shot of fans cheering at a basketball game), you “cut in” to the video. For example, if you were recording a person looking into a microscope, you could *cut in* with close-up, individual shots of the person’s hands adjusting the microscope’s lens, the person’s eyes looking into the microscope, and the microscope slides.

When it is time to edit your video, you can cover your jump cuts or continuity errors by inserting the cut-in or cutaway shots. Cut-ins and cutaways are not just for covering jump cuts. Use cut-ins to draw emphasis to a subject, and use cutaways when you want to show reaction.

Other Video Considerations

The following tips do not fall under video shot composition, but they should be considered as you develop your educational or promotional video programs:

- *Shot length* – One problem many amateur videographers have is recording video shots of two to five seconds in length. When they watch their footage later, they realize how little they actually recorded. Short shots are difficult to edit. A good rule is to record at least 8 to 10 seconds per shot. You can always shorten the shots later in the video editing process. When recording camera movement (pans, tilts, zooms), it is best to record five seconds of video, and then start the camera movement. Stop moving the camera at the end of the pan, tilt, or zoom, and then record another five seconds before hitting the record button to stop the recording.
- *On-screen text* – When shooting, you will need to consider where words will be placed on the screen. If you are shooting an interview, about the bottom one-third of the screen will be used for a person’s name and title. If you have zoomed in too closely, then the person’s name will appear over the person’s mouth or nose. In addition, if you are shooting video that will be placed on the Web for general viewing purposes or downloaded onto a mobile video device such as an iPod or smartphone, the text will need to be much bigger, so keep that in mind if you want words to be included below someone’s face.
- *Logging video* – It is a good idea to create a written catalog or “log” of the video that you shoot. This way, you have a reference of what shots are on each videotape or hard drive. Include a description of the shot and the length of the shot to make editing faster and easier.
- *White balancing* tells the camera what combination of red, green, and blue light it should perceive as white, given a particular lighting condition. When a video camera is white balanced, it adjusts the red, blue, and green color channels inside the camera in such a way that a white object looks white on-screen, regardless of whether it is lit by reddish or bluish light. Most video cameras have automatic white balance features, but this feature can sometimes get “confused,” particularly if you are shooting

a scene that features a single dominant color or includes different types of light (e.g., sunlight streaming into a room lit with fluorescent lamps). Should this occur, you may need to adjust the white balance manually.

- *Backlighting* occurs when you have a person or an object in front of a bright light source, and the person or object looks dark. For example, you may have positioned someone so that a window is in the background. The sunlight coming through the window backlights the person, resulting in the person being in silhouette. Reposition the person so he or she is not in front of the window in order to avoid backlighting.
- *Steady shooting* – If you are not a steady shooter and do not have a tripod, shoot *fewer* close-ups. The tighter or more close-up the shot is, the shakier your shot will look. Shoot wider shots or physically move yourself and your camera closer to the action.
- *Audio* – This component of video production is very important. When you record narration for your video, find a quiet location. Not only should the written script be conversational in style, your voice should be conversational in tone. *Background noise* or *natural sound* (“nat sound”) can add “flavor” to the video, but if there is extraneous background noise that you do not want to record, you need to plan for this. For example, if you do not want ringing telephones or hallway noise to spoil the interview, then disconnect the telephones in the room or place signs in the hallway to let people know that recording is taking place.

Video Releases

Finally, if the finished video is going to be used for profit, such as in an advertisement, it is a good idea to get a *video release form* signed by everyone in the video. A video release gives you permission to use the video in ways that you specify (e.g., in an advertisement, in an educational program). **Table 1** shows an example release form.

If you are shooting video of a classroom, you will need a signed release form from all of the students in the classroom. For persons under 18, a parent or guardian would need to sign the video release form. Be clear that failure to provide you with a **signed release form** will result in their automatic exclusion from participating in the video shoot in any way. You may have them move to a different part of the classroom while you shoot the video. Additional restrictions may apply.

Additional Information

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Table 1. Sample Release Form

I, <u>(INSERT NAME)</u> , hereby grant permission to <u>(INSERT ORGANIZATION'S NAME)</u> to utilize my appearance, the use of my work, or the use of my music by photograph, digital reproduction, videotape and / or audio tape in the program(s) listed below. In doing so, I agree to release <u>(INSERT ORGANIZATION'S NAME)</u> from claims made by me or any third party in connection to my appearance / works and give <u>(INSERT ORGANIZATION'S NAME)</u> the right and permission to publish and republish this audio and / or visual material in print, film, tape or any other media.
I warrant that any and all material furnished by me for the program(s) listed below is either my own or is authorized for such use without obligation.
I agree to the use of my name, likeness, voice, work, and biographical material about me for the program's publicity and organizational promotional purposes.
PROGRAM TITLE(S): _____
PRODUCTION DATE(S): _____
Signature: _____
Name Printed: _____
Current Address: _____ _____
Age (if under 18): _____
I represent that I am a parent (guardian) of the minor who has signed the above release and I hereby agree that I and said minor will be bound thereby.
Signature: _____
Name printed: _____
For <u>(INSERT ORGANIZATION'S NAME)</u> : Name: <u>(OF PERSON IN ORGANIZATION WITH AUTHORITY TO SIGN)</u> Date signed: _____