



Creating Digital and Streaming Video

An MDS Quick-Start

If you do not understand a process or term, please ask us, or refer to the *MDS Complete Guide to Digital Video*. Also, since technologies and procedures can change frequently; please see our web site for the latest version of this document:

<http://www.multimedia.calpoly.edu/ims/media/helpfiles.html>

What you (and we) absolutely need to know before you begin shooting:

1. Who is your audience; and how will your video be distributed and viewed?
2. What size image do you expect to be viewed on the screen?
3. Do you have a software preference for players?

Know the process:

4. Organize your project (very important!);
5. Shoot the video;
6. Edit the video, if required;
7. Encode the completed video and move it to the server(s) for viewing access.

1. Who is your audience; and how will your video be distributed and viewed?

Will your viewers be on campus, or accessing your video via modem? Will they need to download the entire video for playback, or do you intend to have it streamed via web site? There are trade-off's for each. These questions help determine whether you will be offering smaller, individual video clips, or a larger edited work. Off-campus viewers will require the video to be encoded at a lower frame rate, and with a significantly smaller viewing window and reduced resolution.

Gary says:

There are 3 types of compressed video that we use, MPEG-1, Real, and Quick Time. MPEG-1 is for Intranet use or for T1 or faster connections. Real can be used for all types of connections. We recommend Quick Time for faster-than-modem connections at this time, until we upgrade our encoding software with Variable Bit Rate encoding or if you are doing a talking head video.

2. What size image do you expect to be viewed on the screen?

Refer to MDS' online examples of streaming video to compare how they play on your computer:

<http://www.multimedia.calpoly.edu/ims/media/samplevideos.html>

Also compare the screen window sizes shown on the rear of this guide.

3. Do you have a software preference for players?

Digitized video requires users to have a particular player installed in their computers, such as a *QuickTime®* or *RealNetworks®* player; which again affects the technical quality and size of each video. Videos are encoded for the *lowest common denominator* (the minimum system requirements and connection speed) the providers of these presentations expect their audience to use. Some players may work better on a PC than on a Mac, or vice-versa.

4. Organize your project

Creating any video project begins with a vision inspired by your perceived need or desire. In order to organize what you want to communicate, you need to prepare some type of content outline. This can be as simple as a storyboard on 3"x5" cards; but it's very important that you are organized.

Content outlines may include an introduction, learning objectives, topics of instruction, detailed examples of what it is you wish your viewers to learn, and a summary or conclusion to help reinforce the message and direct your audience to additional information and ideas.

Once you've completed your content outline, you can begin writing the script. A script is your sequential guide to the program you wish to produce.

Your script may include a narration, visual descriptions and screen direction depending on what you need to tell or show in your video. In most cases, the images you select are only there to support the audio narration! One approach to writing a script would be to follow your content outline to guide you through writing the narrative and visual descriptions of the images you wish to show. If you aren't planning to have a narration, you'll still need to describe the images and how they relate to one another. You can also include notes about locations, items (props) and talent (people who appear in your video).

Regardless of how detailed you get, you'll need your script or storyboard at hand to remind you of all those details you may otherwise forget when it comes time to begin videotaping. Once you've completed your script and storyboard, only then is it time to assemble the hardware you'll need for production and begin shooting.

5. Shoot the video

The basic equipment you will need for production includes:

- ✓ Your script, of course;
- ✓ a video camera (digital or analog);
- ✓ tripod;
- ✓ lighting equipment (if necessary);
- ✓ additional sound equipment, such as an external microphone that can be plugged into your video camera;
- ✓ enough videotape stock to record everything you need for your program. It is very common for folks who have not prepared a script or storyboard to have to shoot more than four times the amount of video that will actually be required in their final program, "just in case."

Henry says:

- ✓ READ THE MANUAL that comes with the camera;
- ✓ Test-record about a minute of video and audio, then play it back to be sure your mic and camera are operating properly.

The use of a tripod is critical for rock steady shooting. A camera mounted on a tripod to record a scene with a static background requires much less video processing during playback than a scene with a constantly changing background. Film and analog video will blur when the camera is moved; digitized video, when moved, usually yields unstable, jerky looking video.

Be aware of your camera's focus. Auto-focus cameras are constantly adjusting in and out. When shooting digital, the entire image is forced to be reprocessed whenever the background goes out of focus and the image quality suffers on playback. If the distance from the lens to your subject is not changing during a shot, use manual focus.

A tip about lighting:

Additional lighting may be needed if you are shooting indoors, depending on your needs and how sensitive your camera is to light. If you do not already have experience using supplemental lights, it would be a good idea to practice using them beforehand so you know what you can expect for the particular shooting situation you would be in. Ask us for help. Lighting kits are available from MDS if you require them.

A tip about the use of sound in your video:

If you plan to record a commentary or narration at the same time you shoot, you should use a separate microphone, which is plugged into your camera's mic input. Even though your camera is already equipped with a microphone, the quality of sound it produces is usually not acceptable for anything other than background sounds. When on-camera microphones are used to pick up sound, this may include the mechanical and handling noise from the camera itself, or even your own breathing. If you plan to add music or sound effects, do so at the time you edit your program together, so that you can more closely control the quality and level of the audio.

6. Edit the video

Unless you are serving up raw video clips directly as you shot them, you will need to schedule use of a digital editor. Henry France, and the folks in the **Media Resource Center** [756-7199] will orient you in the use of the Casablanca digital editing systems. These systems are in heavy demand, so it is important that you use your editing time wisely.

Ask Henry for the **Guideline for Video Presentations** which has many more additional tips. You can also download it from our 'web site.

7. Encode the video

Call 756-7197 and speak with Pete to schedule an appointment for encoding your videos and storing on the servers.

Remember, we'll need to know:

- ✓ Who do you want to see your streamed video?
People on campus? People at another campus?
People off campus?
- ✓ Do you have a preference as to what format to use?
MPEG-1? RealNetworks? Quick Time?
- ✓ What size video picture do you want to have?
- ✓ How do you plan to archive your encoded video?
CDROM? ZIP? Server? DV Tape? Other?
- ✓ Will your video require additional editing?

**A screen window of 320x240dpi (4.25" x 3.5")
only works for a LAN (on campus)
or DSL connection.**

**A screen window of 240x180dpi
(3.25" x 2.5") is intended for a 56K
modem connection or faster.**

**A screen window of
160x120dpi (2.25" x 1.5")
is intended for a 28K modem
connection or faster.
Pretty small, huh?**