

Audiovisual



Make things as simple as possible, but not simpler.

Albert Einstein



Audiovisual

What is it? program delivery devices that enhance presentations

Why do we do it? to increase understanding, facilitate message retention, and improve visitor enjoyment

How do we do it? employ multisensory encoding equipment



In our fast-paced world, technology seems to be driving much of what our visitors have come to expect.

Introduction

Some interpretive programs are enhanced by the use of audiovisual equipment (A/V). A/V presentations range from the very basic, such as using a flip chart, to much more sophisticated computer - and projector-integrated presentations. This module will provide a brief overview of the various tools that might help you to provide personal interpretive programs that appeal to the eyes and ears of your target audience. We will discuss their advantages, disadvantages, proper operation, care and maintenance, and some basic principles of photography.

California State Parks' *Access to Parks Guidelines* (Department of Parks and Recreation, 1993, p. 38) defines A/V programs as "...informational, educational, entertainment programs that are transmitted by auditory and/or visual means. This includes, but is not limited to, audio tape cassettes, sound systems, video tapes, films, slides, and interactive audio/video displays. Audiovisual programs shall be presented and available from integrated and accessible locations."

In our fast-paced world, technology seems to be driving much of what our visitors have come to expect. But do not be misled, the program styles that Enos Mills, John Muir, and Galen Clark offered over a hundred years ago are still very well received and appreciated. The same principles of interpretive delivery apply, but with A/V we can augment our presentations to make them more diverse and interesting for our present day visitors. Over 35 years ago Tilden said, "Gadgets don't supplant the personal contact; we accept them as valuable alternatives and supplements" (Tilden, 1967, p. 97).



While A/V equipment is designed to aid in various presentations, it certainly should not be applied in all situations. Visual aids should act as a supplement to your thematic program and not the driving force behind its creation. As we discussed in Module 6-Talk, visual aids add to the program, but all programs should be able to stand alone. Before you incorporate A/V equipment, ask yourself if it contributes to the understanding of the theme. Do the “bells and whistles” support or detract from your message?

Once again, it is your responsibility to know the audience, have an appropriate theme, and employ the suitable techniques that help convey the purpose of the presentation. As is the case with any sophisticated piece of equipment, it is critical that you familiarize yourself with its proper setup and operation well in advance of your actual presentation. Use of A/V technological gadgets is tempting, and most interpreters want to incorporate them into programs. As something more useful becomes available, we must be prepared to update or replace those aids.

With that in mind, while it is not the intent of this module to discuss specific brands and models of equipment, we will provide an overview of the currently available types of equipment and some applications in interpretive programming. Remember, the more technology you use in your presentation, the more care and time you will need to invest during the preparation stages. Now we will take a look at some types of A/V aids to interpretation.

Equipment

Cameras

The most underutilized piece of equipment in an interpreter’s arsenal is the camera; we simply do not use our cameras enough. As an interpreter, you are in a unique position to capture special “interpretive” moments that you can share in the future. Experience and practice will make you less preoccupied with the mechanics of the camera and more able to relate to the scene and the final picture. Experiment with the full range of controls offered by your camera, and you will soon become more comfortable with photography and more proficient at photo composition. Let us now focus on the two most popular types of cameras—35mm and digital.

35mm

There are many models of 35mm cameras available. The two basic types are single-lens reflex (SLR) and compact cameras (point-and-shoot). The SLR allows you to look directly through the lens at the intended subject. With most compact cameras, you view the subject through a view finder that is separate from the camera lens.

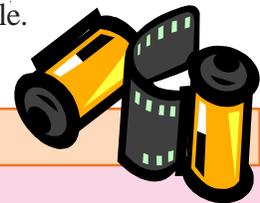
Compact cameras, which are relatively small and inexpensive, have become increasingly popular. They commonly include features such as automatic film advance and rewind, automatic exposure, automatic flash, and auto-focus. A compact 35mm camera is an excellent choice for casual photography. The point-and-shoot capability makes them extremely convenient and requires less technological knowledge regarding focusing, exposure settings, lens choices, and shutter speeds. In



Equipment

addition, because they are lightweight and compact, they are easy to pick up at a moment's notice. All of these features assist in taking pictures, but good photographic skills are still required for the best results.

Despite their more technical characteristics, SLR cameras continue to be very popular. In spite of the fact that they are larger, more expensive, and require more technical skill, they are favored for their interchangeable lenses and their ability to be fine-tuned by the operator. Those with photographic experience usually favor a SLR camera. When you focus on an image with a SLR camera, you are actually looking at your subject through the camera's picture-taking lens. Viewing the actual image formed by the lens is important both in terms of extremely accurate view finding and focusing, as well as allowing you to preview the precise effects of the vast range of accessories available.



35mm film

- **Film for both the SLR and compact cameras is available in three different types** – color negative (print), color transparency (slide), and black-and-white negative (print).
- **Film has different speed or sensitivity ratings.** Faster speed film captures action and is better in reduced lighting situations. Slower films are good for very sharp pictures in bright light. You can determine the speed of the film by the ISO or ASA number located on the package. An ISO/ASA of 25-64 is considered slow, 100 to 200 medium, 400 fast, with very high speed film at 800+.
- **Film quality measurably degrades over time, so take note of the expiration date on the packaging.** In addition, film is adversely affected by extreme heat and humidity.
- **Unexposed film will remain good for six months to a year if stored in a refrigerator (or freezer) until shortly before it is used.**
- **Shoot lots of film! A National Geographic photographer on a short assignment will shoot as many as 400 rolls of film!**

Digital

Outwardly, there is very little difference between a digital camera and a 35mm film compact camera. They look similar and have basically the same options: automatic exposure, automatic flash, and auto-focus. Light coming through the lens is recorded on film in the 35mm camera and on a charge-coupled device (CCD) that senses the incoming colors electronically in the digital camera. The data from the CCD is written to electronic memory. In the field, instead of changing a roll of film, you change to a new memory stick or disk. So how do you decide if one camera is better than another?

Equipment



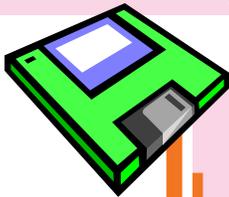
That is like asking if a knife or pair of scissors is better. For some jobs, such as chopping carrots, the knife is better. Scissors are better for other jobs, such as cutting cloth or clipping hair. So, too, a film-based camera is better for some jobs. Film is best for really detailed pictures, especially those you want to enlarge. A digital camera is better in other ways. Digital lets you instantly see your images, which are easy to manipulate and share electronically, and there is no cost for film or processing. Currently, several things, including resolution, the knowledge to operate a computer with appropriate software, and the cost factor prevent digital cameras from replacing film cameras.

Information is “captured” when you take a picture. An average digital camera’s memory may record several million bits or pixels of information. The silver-halide crystals in 35 mm film record hundreds of millions, even billions of bits of information! A digital scan that captures equivalent data or resolution of a 35 mm slide, will create a digital file of over 40MB. Now that is resolution! The more details that are captured, the more realistic the image, and the better your ability to enlarge the photograph without losing quality.

Digital cameras approaching the higher film resolution are currently very expensive, as is memory. Some of the more sophisticated software employed to manipulate the digital image is also very expensive. As technology continues to advance, the trend is certainly pointed toward higher resolution chips, increased memory, and lower overall costs.

zoom in

To ensure you have the best picture quality, you should always get as close to the subject as possible. Cropping a digital photo takes away valuable image data important to printing.



You need 300 pixels-per-inch (ppi) for a printed image to maintain “photo realistic” sharpness. Photos displayed on a computer screen need 72-75 ppi to achieve similar clarity.

Photography is the process of capturing images. With film you have the slides, negatives, or prints that can be scanned. With digital you have images that can be electronically transferred, printed, or made into slides. So what are some of the advantages and disadvantages?



Equipment

Digital photography



Advantages

- **Instant gratification**
- **No film or processing costs**
- **Easy import into computer**
- **Increased image manipulation**
- **Easily stored**
- **Resilient—won't fade, crack, or peel**

Disadvantages

- **Longer time needed between shots**
- **Memory is expensive**
- **Equipment is expensive**
- **Dependent on the computer**
- **Resolution not as great**
- **Image can be accidentally deleted and lost forever**

So, which camera?

There is no right camera for every job. Sometimes film is the only medium that will provide the best photograph and other times digital will give you exactly what you need. What makes digital photography so exciting is that it opens a whole new environment to explore, with opportunities that are parallel to, not substitutes for, your regular film-based photography. In this electronic age, the challenge is to learn what digital photography has to offer.

Lens

One of the most critical components of any camera is the lens. Since the lens plays a vital role in determining what the camera can do for you, knowing how to take full advantage of the various types of camera lenses pays dividends in terms of better, more exciting pictures. The ability to accept interchangeable lenses is a feature that greatly adds to the versatility of many cameras.

There are four main types of lenses: normal, zoom, wide-angle, and telephoto. Each lens has its particular uses. The normal lens provides a natural perspective and an angle of view similar to the central vision of the eye (45-55 mm). A zoom lens offers all the focal lengths that fall within that particular zoom range (35-135 mm). A wide-angle lens offers a shorter focal length than the normal lens with a greater angle of view (28-35 mm). A telephoto lens provides a narrower angle of view, making distant objects appear a great deal closer (100-200+ mm).

- **Opportunities for interesting photos are greater when you employ a variety of lenses.** Changing from a normal to a telephoto lens brings in distant subjects. Changing to a wide-angle includes more of the area surrounding your subject.
- **A macro lens will allow you to focus on objects as close as one to two inches from the camera.** This is a very useful lens for photographing wildflowers and insects. It also works well for copy-stand work.



Copy stand

The primary use of a copy stand is to photograph pages from books, photographs, and other small, flat objects. If you take these pictures with slide film, they can then be directly incorporated into your slide program. Granted, digitally scanning these items may be a possibility, but digitally scanning and then converting to a slide for a slide projector program is a longer, more costly process and you may lose quality. Also digitally scanning bound manuscripts, or fragile or oversize items may be difficult with the common flatbed scanner.

Think of a copy stand as a specialized tripod holding a camera that allows you to precisely photograph still objects. At the basic level, a copy stand is very simple to use and consists of few moving parts. There is a base, a column, and an attachment on the column that holds the camera. A copy stand may or may not have lights.

The main points to remember when using a copy stand are that you need to control glare, shadows, and the level of lighting. Reflectors that fill in shadows, diffusers that soften harsh light, and lights can all assist in accomplishing this goal. While good copy work can be done with ambient light, more consistent results are obtained by using enhanced lighting.

The copy stand should be mounted on a low table so the camera controls and eyepiece are at a comfortable height. A zoom lens on your camera will allow you to frame the subject without moving the camera.

Always record the source of any material you copy. Be sure you include this information on the slides when you label them (see Appendix A).

Copy Copy Copy

- **Keep the material being photographed as flat as possible.** Use nonglare glass or straps to hold the page.
- **Have a grid on the base to help align objects.**
- **If the whole scene is not needed, use your lens to zoom in close or lay a mask surrounding the image.** This will save you from having to mask your slides after they are developed.
- **Use a remote shutter release to minimize camera movement.**
- **Use an 18 percent gray scale card to set the exposure.**
- **Use a blue “80A” filter on your copy stand lens if you are using a regular incandescent light bulb.**
- **To avoid unwanted reflections, align lights at a 45-degree angle to the work being copied.** Remember to turn off overhead lights.
- **Use your camera’s built-in light meter to determine proper settings.** Most modern SLR cameras have automatic modes of operation. Always shoot at f/8 or f/11. This will ensure sharp, well-focused images.



Equipment

Projectors

Showing images to a large audience requires some type of projection device. Just as we have seen with cameras, different types of projectors are used in state parks. Some, like the slide and movie projector, have been used for a long time, while others such as the LCD, are just beginning to be employed. Overhead and opaque projectors fill special needs and are utilized only on particular occasions. We will now take a look at each of these projectors.

Slide

A slide projector is basically a piece of equipment containing a light source and lens system that focuses an image from a slide transparency mounted in a cardboard, glass, metal, or plastic frame onto a screen. Projected slides produce life-size, high-quality images that are sharp and have the brightest colors of any comparable media, for a fraction of the cost. Slide projectors are the most commonly used visual aid devices in park settings. They are portable, easy to set up, relatively inexpensive, and can project numerous individual images in a controlled sequence. Some models have special features including built-in rear-viewing screen, reading light, high intensity light source, random access, automatic advance, and automatic focus. Slides are contained in trays, cartridges, carousels, or drums for use in appropriately designed projectors.

In Module 8-Campfires! we discussed how to put together a slide program. The projector most commonly used in parks for presenting slide programs is the Kodak Ektagraphic®. Using a single projector is straightforward, but, once again, knowing your equipment and practicing proper use are the key steps to a professionally delivered program. We will discuss the use of two or more projectors with a lapse dissolve and sync recorder later in this module.

Since the specific model of projector(s) you will be using may vary, we will concentrate on the general issues and problems associated with most slide projectors. Not too much goes wrong with a projector. The main problems that might occur, besides a lamp (bulb) burning out, include the auto-focus not working correctly, slides that will not advance or reverse, and/or a slide tray that will not release from the projector.

Auto-focus outta focus?

- **Does your projector have auto-focus?** On a Kodak projector, look for an “A” or “AF” in the model number. This indicates that it has auto-focus.
- **If it has auto-focus, check that the switch is in the “ON” position.**
- **For proper auto-focus operation, you must focus the first slide manually.** All the other slides should then focus automatically.
- **Auto-focus is accomplished optically using light reflected off the emulsion surface of the slide.** The projector detects extremely small changes in the position of each slide. All slides must be inserted with the emulsion side facing the same direction, or some slides may be slightly out of focus.
- **Warped or damaged slide mounts may never focus properly.**

Equipment



The auto-focusing mechanism is very delicate and critically aligned. It can easily be thrown out of adjustment if your projector is dropped or damaged. The following are the other main things that can go wrong with a slide projector.

Won't reverse?

If your projector only goes forward, even when you repeatedly press the remote reverse button, you may not be holding the reverse button long enough. Kodak slide projectors are designed in such a way that you must depress and hold the reverse button for a little while longer than the forward button. If you just tap the reverse button, the machine will go forward.

Advances on its own?

Check that the automatic timer is not turned on. Even if it is off, the timing device may be defective or worn out on older projectors.



Slide *jammed* in tray?

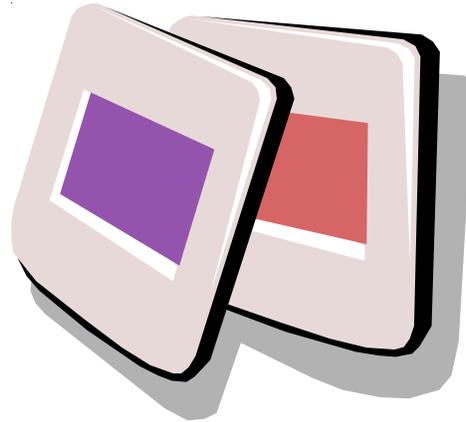
- There are several variations on how to rectify a jammed slide tray, depending on the projector and the tray. Look for a silver latch at the center of the tray. Push it, and the tray should release. The other common method of releasing the slide tray requires using a coin. If you don't see a silver latch, look for a slot in the middle of the projector in the center of the jammed slide tray. Place a coin in the slot and turn to release the tray.
- Once you have freed the tray, turn the tray upside down (first make sure the locking ring is secure or the slides will fall out) and spin the metal plate on the bottom so the slot lines up with the beginning notch in the tray (#0). You will hear a click as these two line up. Turn the tray right side up, remove the locking ring, remove the slide from the projector, then replace both the slide and the locking ring. Put the tray back on the projector, and press down to seat it properly. Press and hold the "Index" button, and spin the tray to where you left off.
- The time to see if you can do this is not during a formal presentation, but during your practice session. Although you won't jam a slide, see if you can follow these steps to rectify the situation just in case it happens during your talk. In addition, turn the tray over and make sure all the little round posts on the circumference of the tray are there. If one is broken off or badly chipped, replace the tray.



Equipment

Loading slides

Remove the locking ring from the tray. Hold each slide up to the light. If everything is facing the correct way, such as words read correctly and the sky is up, then turn the slide upside down. Put it in the tray facing the lowest number. After all the slides are in, project each of them, double checking for accuracy, correct orientation, and quality. Then, for future reference, mark each with a marking pen across the front and top to indicate the correct loading position. Make sure you securely replace the locking ring.



Which tray is best?

Only use an 80-slide tray. The 140-slide trays jam more often because the slots are very close together. If you have more than 80 slides (you probably should not), it is much better to use two 80-slide trays rather than run the risk of a jam. Better yet, develop a lapse dissolve presentation using a dissolve unit and two 80-slide trays.

Movie

We will just say a few words about 16 mm movie projectors. Movie projector use is not terribly common, but a few are still used in some of our parks. Historic and natural history films that are not available in another medium such as video present the most likely application for a movie projector. Generally, a projector has been sitting in a park closet or cabinet for a long time. If you plan to show a movie that is appropriate to your theme, make sure the projector is working correctly and that you are thoroughly familiar with its operation.



Before projecting - answer Yes to all these questions

- Have you read the instructions, and do you understand how to operate the projector?
- Have you cleaned the aperture and optical components?
- Have you threaded the film correctly?
- Are both loops the correct size?
- Is the film gate closed?
- Is the film properly started on the take-up spool, with all the slack removed?
- Is the reverse switch set at “forward”?
- Is the rewind lever in the “run” position?

Just before showing a movie to your audience, you should test your equipment again. A good technique is to thread the film and advance it long enough to go through the blank film leader prior to the start of the movie. Preset the movie to begin with the opening title or your desired starting location. This will ensure that the projector is operating properly, the focus is correct, and the audio levels are comfortable. After focusing the film, do not forget to secure the lens lock. Remain near the projector throughout the showing in order to be able to quickly make any necessary adjustments and to troubleshoot.

*You cannot depend on your eyes when
your imagination is out of focus.*

Mark Twain

LCD

In the ever-growing world of modern technology, the popularity of using computers to generate presentations is rapidly increasing. Today’s laptop computers, coupled with many of the common software packages and an LCD projector, offer another tool to the interpreter. An LCD projector is a self-contained unit that combines red, green, and blue LCD panels and a light source for a computer and/or video projection device. LCD projectors come in a wide variety of sizes and specifications.

LCD is an acronym for Liquid Crystal Display



Equipment

LCD equipment can be very expensive depending on the features and options of the projector. They require the support of a computer and appropriate technical software interfaces to work. Significant preparation is required to ensure that you are thoroughly familiar with the system and that everything is working properly.

With the advent of presentation software and the vast resources of the Internet, computer projected images have become popular, high-tech A/V tools. Since there are literally thousands of laptop configurations, models, and resolutions, we cannot address how each computer works with each projector. If you do choose to develop an LCD program using computer technology, just remember there is no substitute for reading instruction manuals, testing, and a great deal of hands-on practice. It is especially important to remember that changing projectors or computers results in an entirely different system. Just because your presentation worked on one computer does not necessarily mean it will work on a different system.

Does it matter whether you turn on your projector or your computer first? *Yes*. Always turn on the projector before turning on your computer. Generally, the computer will detect the projector as an external monitor and will set itself up automatically. If you turn on the computer first, you will need to know the proper keystroke sequence to get things working. Once again, know your equipment.

When projecting your program on the screen, be aware that LCD projectors have either a fixed or adjustable keystone factor. A fixed keystone projector needs to be placed at about an eight-degree angle lower than the center of the screen. Changing the vertical plane of the screen can allow you some variation on placement of the projector. The adjustable feature found on some projectors allows you to electronically correct this distortion without having to worry about screen placement.

People only see what they are prepared to see.

Ralph Waldo Emerson

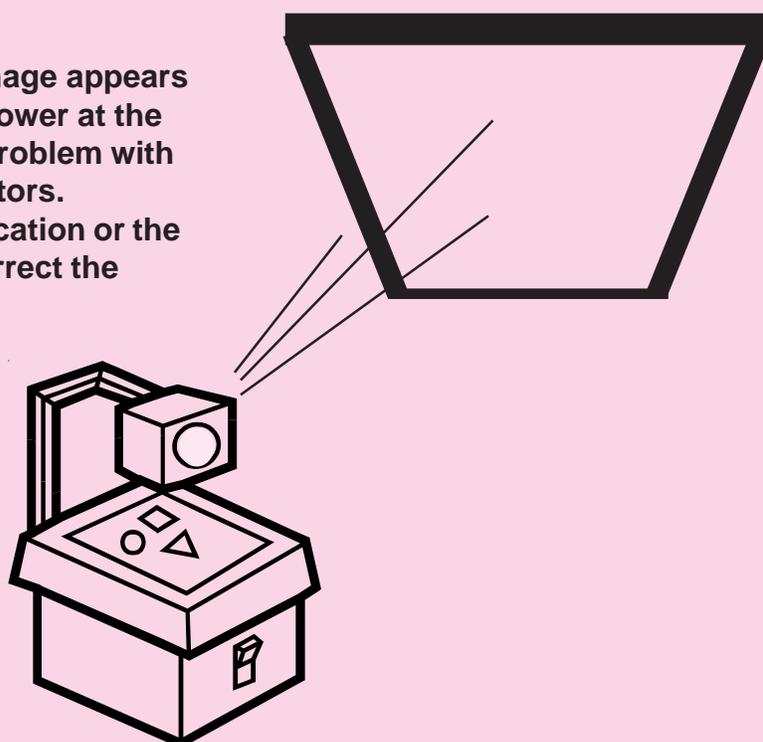
Maintenance for all A/V equipment is important. For LCD projectors it is critical. Clean or replace the filter regularly according to the manufacturer's instructions, as the screen filter can quickly become dirty. A clogged filter will cause your projector to overheat, shut down, and can shorten lamp life. Even worse, the dust that collects on your filter will eventually make its way into your projector and deposit itself on the LCD panels. Once this happens, you will have colored spots in your image, and your projector will require professional cleaning.

If the LCD projector will not turn on, do not panic. Check the filter door(s) to be sure they are closed completely. Most projectors have a safety switch associated with these doors, which prevents the unit from operating unless the door is properly secured.



What is “keystone”?

Keystone is when your image appears wider at one end and narrower at the other. This is a common problem with LCD and overhead projectors. Adjusting the projector location or the screen orientation can correct the keystone problem.



Overhead

An overhead projector is a device that produces an image on a screen by transmitting light through a transparency lying on the face or stage of the projector. The lens and mirror arrangement in an elevated housing make possible a bright projected image in semidarkened or lighted rooms.

Perhaps you are wondering why an overhead projector is included in this interpretive equipment discussion. While more commonly thought of as a tool for the conference or training room, the overhead projector can be a very effective tool for school and community service presentations and even campfire programs. While the current trend is toward the use of LCD projector technology, the overhead projector is a viable presentation device that should not be overlooked.

An overhead projector is much more than just a light in a box. It is a cost-effective, electronic presentation tool that can enliven and add visual impact to your message. The overhead projector has a number of features that give it tremendous versatility, including its ease of operation, its ability to be used in normal room lighting, and its operation from the front of the room with the interpreter visible to the audience. In addition, the low cost and ease of creating transparencies makes this an affordable option. With the overhead projector, you can write directly on the transparency as you project it. In other words, transparencies need not be entirely completed ahead of time. This allows you to disclose information in a manner that suits your message. These are key advantages that let you better interact



Equipment

Making transparencies

Blank acetate film provides a “chalkboard” for you to write on, illustrate your program, and respond to audience questions and comments. More commonly, you prepare your program ahead of time and make your transparencies on clear film that you have either printed directly from your computer printer or made from copies on your office copier.

with your audience, customize your presentation, and use a straightforward, practical projection system for visual aids.

Many consider the overhead projector only a tool for presenting text type information. However, you should consider that this medium also allows you to use graphics, to actively show progressions, and to make connections to the audience. For example, a picture that you could only pass around or hold up could be copied onto a transparency and projected. The interpreter can project a visual of an item on the screen in less than a completely dark environment while also displaying the physical item. The transparency reinforces and further clarifies the tangible, handheld object. It also allows your audience to take notes, read handout materials, and interact face-to-face with the interpreter. The interpreter is able to pick up verbal and nonverbal cues from the audience that help him or her to understand and update the presentation. Consider using an overhead projector for such programs as map reading and orientation discussions, safety equipment demonstrations, and even learning the words to songs.

Using transparencies

Use transparency pens to write on the transparency to illustrate, clarify, or highlight a point. If you plan to use a transparency over again, be sure to use a water-soluble transparency pen or cover the transparencies with clear sleeves to avoid damaging the original.



Presenting transparencies

- Stand to the side of the overhead projector opposite your writing hand. This will make it easier for you to face your audience, write on the transparency, and not block the screen. Have enough room next to the projector to stack transparencies before and after you use them.
- To avoid the glare of bright projected light, cover the transparency with an opaque mask (piece of cardboard) when you are done projecting it. You may also turn the projector off, but beware, this can cause the projector bulb to burn out prematurely. Additionally, you can use a cover to progressively reveal topics one point at a time.
- Have the top of the screen tilted toward the overhead projector (if possible) to prevent the “keystone” effect.
- Protect the transparencies by keeping them clean and free of dust and scratches.
- Format your pages in landscape rather than portrait. This allows projection of the page a little higher on the screen and improves visibility for your audience.
- Minimize text. Use easy to read, large sans serif fonts.
- Use different colors, including pen markers, for emphasis.

Lamp options

Lamps are critical components of all overhead projectors and vary in type, life, wattage, and cost. Some projectors offer high/low switches. The low setting can greatly extend the life of the lamp. Some projectors also have a built-in lamp changer that allows you to switch over to another lamp if the first one fails. Know your equipment.

Opaque

An opaque projector uses the principle of light reflection to create an image of nontransparent objects such as printed/typed pages, stamps, coins, photographs, drawings, maps, diagrams, or flat objects in single sheets or in book form. Opaque projector images require a darkened room.

While this projector is rarely used during an audience presentation, it can be useful for preparing visual aids. By projecting and thereby enlarging items, you can then draw, trace, or examine the images more closely. Sam Ham discusses this as the projection method for do-it-yourself illustrations (Ham, 1992, p. 116).



Screens

Projection screens are available in two basic types: front or rear screens. For most interpretive presentation purposes, a front projection screen is the obvious choice, simply because it can fit into any room without the need to build an elaborate rear projection booth.

If you have the luxury of a rear projection system, there are definite advantages. A rear screen permits the use of visuals in near normal room lighting, your audience can take notes, and you can maintain eye contact. The rear projection system allows the interpreter to walk in front of the screen without casting shadows. Locating projection equipment in a separate room minimizes noise and distractions.

The type of screen at your park, if properly maintained, is probably the one you will be using for a long time. In some parks, the campfire screen is made of wood or a similar material covered with a flat white paint, while other parks may have an electric, roll down, beaded screen. The screens will certainly vary, so once again, know your equipment.

The in-house constructed, painted screens, while not entirely desirable, can be repainted. Quite often, once a fabric screen is marred by graffiti, it must be replaced. Glass beaded and rear screen cleaning should be attempted with great care because the beads or projected coatings can easily be damaged. Even “cleanable surface” screens should be exposed to very light pressure using only mild soap and water. Use of chemical cleaners may destroy their reflective properties.

Lapse dissolve and A/V sync recorders

When you present a slide show with one projector, there is a “blackout” between slides on the projection screen. With lapse dissolve equipment and two projectors, one slide actually dissolves into the next slide without any blackout. This makes for a smoother transition from one slide to the other, presents a more professional looking presentation, and is less disturbing to the eyes of the audience. By incorporating prerecorded music and narration, you can build on this professional presentation.

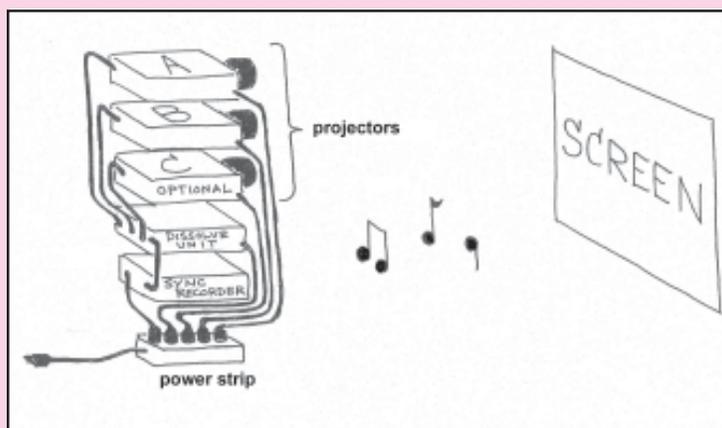
When producing a slide show that is synchronized with an audiotape, it is necessary to use a tape recorder that has at least two separate audio tracks. A/V sync recorders have independent audio channels that allow for recording music/narration on one track and synchronizing signals for the dissolve control on the other track. During the performance, a tape playback unit amplifies the sound signal and transmits it through a speaker system. At the same time, the dissolve unit that controls the operation of the slide projectors detects the magnetic cues. A/V sync recorders are quite different from home stereo cassette recorders.

We discussed the steps for creating basic theme-based slide programs in Module 8-Campfires!. Once you have developed your program and wish to integrate it into a synchronized A/V production, you normally begin with recording the music and/or narration. When you are satisfied with the audio portion, concentrate on integrating your visuals. At this point, listen to the audio and record synchronizing signals from the lapse dissolve control onto the second channel of the tape.



Multi-image program

- A dissolve or multi-image program will require a minimum of two projectors and a dissolve control. With these and a standard remote control, one can produce a traditional narrated program with smooth dissolves between the images.
- A more advanced presentation will require the addition of a sync recorder and perhaps an additional projector. Believe it or not, a three-projector, multi-image show is easier to create than a two-projector show!



This is because with two projectors one always has to wait for the dark projector to advance. This takes a second and a half during which you cannot bring up a new image. By having a third projector there will seldom, if ever, be a time when you have to wait.

- When using a dissolve control, it is of the utmost importance that the dissolve and all projectors be plugged into a single power strip.

Sound systems

The ideal sound system makes speech and music clearly and comfortably audible yet never draws attention to itself or its operation. Sound systems can be very basic, consisting of just a microphone, amp/mixer, and speakers. For larger applications, you might need a fairly complex sound system, including a CD player, cassette recorder, amp/mixer, speakers, microphones, turntables, transmitters and lots of wires. Become familiar with your particular equipment's operation, functional status, and its care and maintenance. Let us now turn our attention to a basic component of the sound system—the microphone.



Microphone

The sound system begins at the microphone, where acoustic sound is converted into an electrical signal. A microphone is connected to an audio mixer where the input signals are amplified, adjusted, and combined to produce a single output signal. From the mixer, the output signal is sent to a power amplifier. The amplifier strengthens the signal further, making it powerful enough to drive loudspeakers, which convert the microphone signals back into acoustic sound. Whew!



Microphones and the associated system amplify your voice and are useful for several reasons. They assist in not overtaxing your vocal cords, permit easier listening for the audience, and, when you are moving around, ensure that everyone can hear you. Microphones are available in wired and wireless versions with either hand-held or clip-on capabilities.

The wireless clip-on, or lapel microphone, is preferred for its convenience and the full freedom of movement. A miniature, clip-on microphone connects by a short cable to a small transmitter worn on the belt or elsewhere. A special receiver picks up the signal and feeds it to the mixer. Generally, a separate receiver/transmitter is needed for each microphone used.

The proper location of the clip-on microphone is about six inches below the interpreter's chin; the clip allows easy attachment to most clothing. However, be sure to anticipate movements that may rub against or obstruct the microphone.

A wide variety of wired and wireless hand-held microphones is found throughout the parks. When using a hand-held microphone, sing or speak *across* it rather than directly into it to reduce the popping caused by sudden breath blasts. The microphone should be positioned in front, and slightly to one side, of the mouth. The user must stay within the acceptance angle of the microphone to avoid unwanted changes in volume. Using proper techniques, and perhaps an accessory wind screen, will solve most popping problems.

If you are having a guest speaker or a panel discussion, use additional microphones. Counsel your speaker(s) on how to properly use the microphone. Be aware of chains or necklaces that can hit the microphone and cause annoying disturbances.

Generally, you do not need to turn the volume up as high as you think; preplanning the volume setting is the professional approach. Unusual circumstances, such as unexpected ambient noise, a larger or smaller group than normal, or employing guest speakers, may necessitate changes in volume. Ask the audience or have a partner signal you when the sound is comfortable.

Feedback is that tortured howling that results when the output of your speakers gets fed back into your microphone and is amplified and sent back to your speakers in an endless loop. There is no complete cure for feedback. If the volume of any microphone is boosted loud enough, it will eventually cause feedback. There are a number of measures you can take to reduce feedback.



Controlling feedback

- **Turn down the volume.**
- **Move the microphone(s) further away from the sound path of the speakers.** Direct your microphone so that it does not pick up speaker output. Because they can be placed more purposefully, a microphone on a stand gives less feedback than a clip-on.
- **Place your speaker(s) as far forward of your performing position as possible.**
- **Decrease gain on equalizer (EQ) or tone controls.**

Dale A. Robbins

Microphone problems?

No sound?

- Make sure microphone and system are both on.
- Check the battery.
- Check that mute is not selected.
- Ensure cord is securely plugged in belt pack/control system.

Cuts in and out?

- Make sure belt pack antenna is hanging straight down and is not twisted.
- Move belt pack to your back.
- Check the battery.
- Avoid the location where interruption occurred.

Feedback?

- Turn down the volume.
- Stay behind the speakers.
- Avoid the location where feedback occurred.

Assistive listening systems



All visitors need the ability to fully participate in interpretive programs. Assistive listening systems provide the opportunity for individuals with hearing loss to actively take part in our interpretive presentations. Assistive listening systems include portable FM wireless systems, audio induction loop systems, AM systems, infrared systems and hard wire systems. For further information on the different types of systems and their uses see *All Visitors Welcome* (California Department of Parks and Recreation, 2003, p. 17) for the advantages, disadvantages and possible applications.



Equipment

Other audio

There is a considerable diversity of audio equipment available to augment any sound system. Trying to address all the various components exceeds the scope of this handbook. However, let us take just a moment to mention equipment you may want to research. A **mixer** controls the audio inputs going into your sound system. It can switch between inputs, control the volume of each input, and control the outputs to which each input is sent. An **equalizer** fine-tunes your sound system's frequency response to a given location. Use it to adjust bass, treble, and midrange to provide the most pleasing sound and to minimize feedback. **Reverb** is sometimes used to provide artificial echo effects, but its real purpose is to provide extra depth and clarity to your sound. **Cassette decks** or record players that are "PA" (public address) capable, allow you to use a microphone and the unit's amplifier and speaker (or external speakers) as a public address system. **Powered speakers** have a built-in amplifier. The more commonly used nonpowered speakers do not. You will want a powered speaker for portability or to use in cases where an amplifier would be expensive or inconvenient.

Computer

In the ever-growing world of technology, the popularity of computers to generate presentations is definitely growing. Today's laptop computers, coupled with common software packages, offer tremendous flexibility to the interpreter. A professional-looking presentation can be prepared ahead of time and displayed using this exciting technology.

Computers are at the heart of the digital revolution in imaging. As far as computers for developing, editing, and showing graphic presentations are concerned, you only need to remember a few things. Be generous with memory, disk space, and monitor size. If you cut back because of cost constraints, cut back on processor speed; it is nice but not as crucial as memory. Most major graphics applications can open and save in a number of file formats that can then be used to transfer images from one application to another. Some of the more common file formats include TIFF, PICT, EPS, GIF, JPEG, PSD, and PDF.

The National Park Service's Harper's Ferry Web site, www.nps.gov/hfc, is a good reference for digital file types and offers "Suitability Standards for Digital Photographic Images."



Digital file formats

- **TIFF (Tag Image File Format)** - The most versatile, reliable, and widely supported bit-mapped format. Good for print use.
- **PICT** - Macintosh's standard format for graphics and drawings that are cut or copied to the clipboard.
- **EPS (Encapsulated PostScript)** - The standard format for storing high-resolution PostScript illustrations.
- **GIF (Graphics Interchange Format)** - Intended mainly for on-line transmission.
- **JPEG (Joint Photographic Experts Group)** - Data compression for images and a file type. Compression loses data. Not recommended for high quality print uses.
- **PSD** - Format that can only be opened and edited in Photoshop. It can preserve layers, channels, and paths in a form that can be edited.
- **PDF (Portable Document Format)** - Images can be saved from Photoshop as PDF files that can then be viewed using Acrobat Reader. JPEG compression can be used.

Flip charts

You should not assume that investing a lot of money in high-tech visual aids and equipment will make your presentation better. Remember, the purpose of using visual aids is to enhance your presentation, not upstage it. While everyone seems to be interested in creating high-tech computer generated presentations, do not overlook the lowly flip chart. A flip chart is still an effective, portable, and useful presentation tool with many applications for interpretive programs.

Flip charts

- **No need for electricity**—no need to worry about the lamp burning out or that you forgot an extension cord.
- **Are economical**—no special films or printers are necessary to produce.
- **Let you add color**—flip chart markers allow creativity.
- **Allows for spontaneity**—provides an interactive format.
- **Are adaptable**—last minute changes are easily accomplished.



Equipment

Making “prepared” flip charts can take a considerable amount of time. Make sure you start preparing your charts early enough so you can review them and make any changes or corrections beforehand. It takes practice to learn how to print neatly. If you cannot print neatly, ask someone who can to prepare them for you. A poorly prepared flip chart can be very distracting.

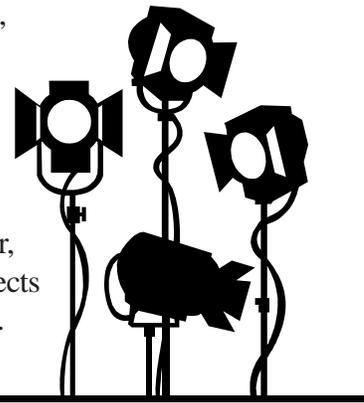
Prepare flip charts ahead of time by lightly writing directly on each page any notes you need for your presentation; the audience will not be able to see your notes if you use pencil. You may also write notes for what you have planned on the next sheet. This will allow you to properly introduce what is next.

Lighting

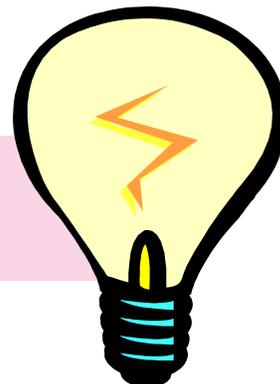
Lighting is often the last thing we think of when planning a presentation, and yet it may be one of the most important elements to success. Let us take just a brief look at lighting.

When using hand-held items, make sure the items are well lit. General lighting is accomplished with flood lamps. More direct and intense lighting can be accomplished with spot lamps. Dramatic and special effects can be accomplished with theatrical stage lighting. However, this type of lighting can be expensive, bulky, and prone to the negative effects of weather and vandalism, especially if left outdoors for extended periods. Something as simple as a single spot light can add dramatic effect to highlight objects and people, and to focus attention. A simple alternative to the more expensive professional stage lighting is to use a slide projector with a blank, black slide with a pinhole opening. Experiment with the size of the opening needed for the distance from the projector.

Lighting considerations for visitors with hearing impairments should also be recognized and provided. If these visitors have sufficient lighting, they are often able to lip-read, or they may be watching the oral or American Sign Language (ASL) interpreter. If the room or area is too dark, a spotlight on you and/or the sign language interpreter works well. Consult with your Americans with Disabilities Act (ADA) specialist or your supervisor, and refer to *All Visitors Welcome* (Porter, 1994) for more details and suggestions.



Visitors who can lip- or sign-read should be accommodated with effective lighting.





Planning

It's all about knowing your message, knowing your audience, and choosing the media that will communicate best with those variables.

Joanie Stadtherr Cahill

Selecting appropriate equipment

State Park Interpreter Karen Beery recently summed up a general discussion of “traditional” media vs. “new” media when she wrote,

“We could probably trace the roots of this type of discussion back many centuries. For example, is moveable type better than calligraphy; is photography better than painting; is film better than theatre; is recorded music better than live performance; etc. The newer technologies always have an impact on the earlier technologies in some way. However, I think the challenge for us as interpreters is to explore how we can best use the incredible number of tools and techniques that are now available. We should be striving for excellence of design and interpretation regardless of the tools we are using. If it doesn't enhance, reinforce, or clarify your message, don't use it.” (Beery, 2002 personal communication.)

Mechanics

Proper operation

Common sense, good practices, and a professional approach to maintaining valuable A/V equipment are essential. Many staff members rely on these expensive tools to assist in their program delivery. Equipment that does not function correctly detracts from the visitors' experience and is certainly inconvenient for the interpreter. A/V equipment is not cheap to purchase, repair, or replace.

Take good care of the toys

- **Read the instruction manuals.**
- **Use the equipment for its intended purpose. Do not force controls and mechanisms.**
- **Perform periodic maintenance and safety inspections.**
- **Keep equipment clean, and protect it from environmental hazards.**
- **Properly store equipment.**
- **Remove batteries from equipment when not in use.**



Batteries

Batteries are used in all types of portable video, audio, and computer equipment. Understanding what type of batteries your equipment uses and how to take care of them can make the difference between interpretive programs that fail or interpretive programs that succeed. There are three basic types of batteries: alkaline, nickel-cadmium, and lead acid.

Portable energy



Alkaline—Alkaline batteries are not rechargeable. They are available in various sizes such as A, AA, AAA, D, and 9V.

Nickel-cadmium (Ni-cad)—The most widely used rechargeable battery in A/V equipment. Ni-cads charge quickly, last approximately 700 charge and discharge cycles, and perform well in cold weather. But even when unused, they can lose as much as 10 percent of their capacity each year. They should be totally drained before recharging. Ni-cad batteries are notorious for developing a recharge resistant “memory.”

Lead acid—Recharge immediately after use. If they are stored partially or totally discharged, they may never recharge again. Lead acid batteries can be recharged roughly 500 times with slightly less usable power each time. Unused they can lose up to 20 percent of their capacity each year.

Never store batteries in a refrigerator. Unlike film, cold storage won't prolong the life of a battery. It may actually shorten it.

To ensure quality performance, routinely clean the battery contacts in the equipment and the charger. Use a cotton swab, saturated with rubbing alcohol (isopropyl alcohol), to clean the contact points on the battery and the charger. Most charging problems are caused by dirty contacts on the battery or charger. Speaking of cleaning, do not forget about all of the various pieces of equipment that have lenses.

Cleaning lenses

Cleaning lenses is not a difficult task. It is a simple matter of using isopropyl alcohol or a photographic lens cleaning solution along with lens cleaning tissue. Other cleaning materials may leave lint or other residue on the glass. Blow the dust off the lens with a dry air gun or “puffer bulb.” Apply the cleaning solution to the lens cleaning tissue. Avoid applying the solution directly to the lens surface. Wipe the lens in a spiral motion, beginning in the center of the lens and ending on the outside. If necessary, repeat the above steps until the lens is clean and free of streaks.

As stated earlier, proper operation of equipment is key to successful A/V presentations. Knowing how the equipment functions, the safe use and storage of the equipment, and how to make repairs are all essential for program success.



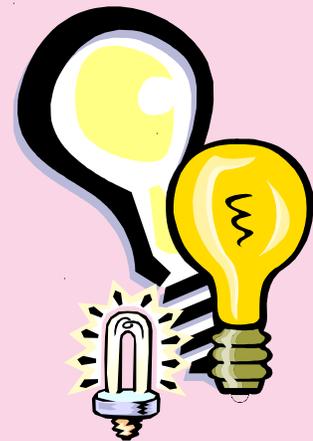
Changed circumstances

If you are taking your interpretive program to a different venue, do not forget to have an extension cord supplemented with a power strip. An ungrounded plug adapter may also come in handy because some facilities still do not have three-prong grounded outlets. For everyone's safety, tape the power cord and cables to the floor to prevent tripping. (Thank heaven for duct tape!)

A spare backup lamp is also always good insurance. Make sure you know how to change the lamp in case it burns out during your presentation. To protect yourself from burns, do not touch a hot lamp with your bare fingers. Handle the replacement lamp by the metal or porcelain base, or with a handkerchief, because the oils from your hands can mar the lamp. A pair of clean cotton gloves is very useful when changing lamps.

Burn out!

- Moving the equipment while the lamp is on or even shortly after turning it off can cause premature failure. A hot lamp filament will fall apart if the machine is handled roughly.
- Average lamp life means just that. On ENX lamps, the published life average is 65 hours. However, the lamp that lasts only 35 hours is not considered to be defective.
- Never move a lamp changer lever (if your machine is so equipped) while the on/off switch is in the "On" position.
- Excessive heat will shorten lamp life. A slow running fan caused by lack of lubrication or a dirty motor will not cool a lamp sufficiently. Regular maintenance is required.
- Do not block the airflow of your projector's cooling fan. Keep filters clean. The intake and output grills must not be obstructed or overheating will occur, shortening the lamp life.
- A higher than normal AC line voltage will tremendously decrease lamp life. Whereas higher voltage might not affect other appliances, an increase of only two volts will shorten lamp life by as much as 20 percent, five volts as much as 58 percent!
- A lamp that is not properly seated in its socket may seem burned out. Not only may the lamp not make good enough contact to light, it may only make enough contact to arc and burn its pins or the contacts of the socket.
- When your program is over, turn the projector completely off and let the bulb cool naturally. Try not to move the projector for at least 15 minutes. Do not leave the fan running. Using the fan to cool the bulbs in modern projectors will actually shorten the life of the bulb.



adapted from United Visuals Website



Other considerations

Other considerations

Copyright

The CSP position on copyright and intellectual property rights is included at the end of this module in Appendix A. As an employee of the State of California, it is your obligation to adhere to the CSP position. “Copyright is a form of protection provided by the laws of the United States (title 17, U.S. Code) to the authors of ‘original works of authorship,’ including literary, dramatic, musical, artistic, and certain other intellectual works. This protection is available to both published and unpublished works” (see Appendix A). “Before using a work that you did not create, the status of the copyright should be determined, and appropriate permission to use the work should be obtained. This can take the form of a formal license agreement or a simple letter granting permission to use the work for the requested purpose” (CSP, Appendix A, 2002).

©copyright

- ***“Copyright law does permit the use of copyrighted images under the concept of ‘fair use’. The concept or defense of fair use allows for the taking of portions of copyrighted work for limited purposes without requiring the copyright owner’s permission. However...”*** See Appendix A.
- **What constitutes a good faith effort** ?
- ***“A question raised frequently is, does the use of copied images in an interpretive or campfire program fall under the interpretation of ‘fair use.’ This question does not have one answer other than...”*** See Appendix A.
- **Educational fair use must follow what directives** ? ©

Refer to Appendix A at the end of this module for the CSP-prepared position on copyright.





Photography

Producing quality photographs takes skill and practice. We encourage you to explore the discipline and the equipment options available. To improve your skills, take advantage of the hundreds of books on photographic techniques. You might also want to visit the Eastman Kodak Website for many helpful tips. One of the surest ways to improve your photography skills is to practice. Keep a record of camera settings, weather, and other conditions under which each picture was taken. After only a few rolls, you will learn what worked and what did not by seeing the picture itself and referring to the conditions under which it was taken. Be sure to obtain photographic releases from any people who appear in your pictures.

Eastman Kodak's **TOP** five picture tips

1) Show one subject clearly

A picture with a single dominant subject makes its point quickly and clearly. When you look through the camera's viewfinder, it is human nature that your eye and mind will see only one subject, even if there are many objects. This often results in cluttered pictures with unclear intent. When taking a picture, carefully arrange the scene so that one subject stands out.

2) Get close

Fill the picture area with a subject so it stands out and grabs the viewer's attention.

3) Simplify the background

Busy backgrounds sap pictures of their power by competing with the subject. Move the subject or yourself to position a plain background such as grass, a wall, or the sky behind the main subject.

4) Observe the light

Harsh sunlight casts deep shadows. Cloudy daylight evenly illuminates scenes so everything is clearly visible. Low lighting reveals textures, while overhead lighting reduces textures. The best effect depends on your subject and intentions. Observe the light, and change your position to get a better angle, or wait for the sun to disappear behind a cloud to get better results.

5) Hold the camera steady

If you do not hold the camera steady, the results may not be disastrous, but they won't be acceptable. Your pictures will be blurry and perhaps unusable. Holding the camera steady is especially important on very cloudy days outdoors. A good technique to help with this is to pull your elbows into your side and hold your breath right before you release the shutter.

adapted from Eastman Kodak Website



Other considerations

Composition

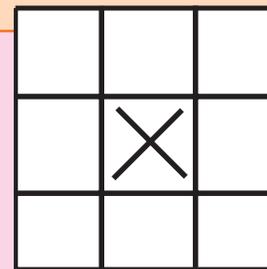
The basic principles of composition are extremely important to achieve good photographs. Photographic composition is simply the selection and arrangement of subjects within the picture area. Become familiar with these rules of composition, and practice them until they become second nature to you.



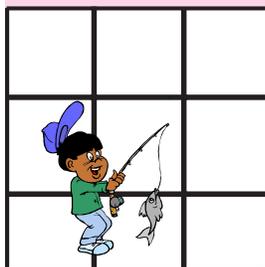
- Have a strong center of interest.
- Find the best camera angle.
- Frame your subject.
- Fill the frame.
- Use the “rule of thirds” for subject location.

The rule of thirds

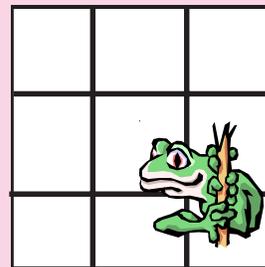
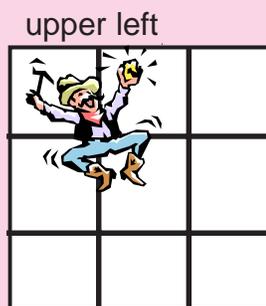
A picture is more interesting if the main subject is not centered. Arrange it a bit off to the side. Compose your picture as if there was a tic-tac-toe grid overlaying the image; each spot where the lines intersect is ideal for placing a subject. Additionally, have the subject “look” into the photo.



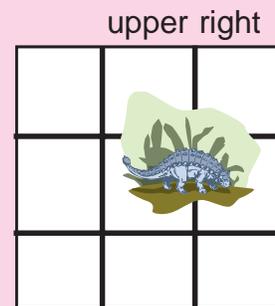
avoid center



lower left



lower right



What's ahead



How you treat, maintain, and operate A/V equipment greatly affects the quality of any interpretive program. In the next module, we will address in greater detail how to evaluate whether or not you are presenting effective and informative programs.

Literature cited



Beery, Karen. Personal communication with California State Park Interpreter, 2002.

Cahill, Stadtherr J. Personal communication with California State Park Interpreter, 2002.

California Department of Parks and Recreation. *Access to Parks Guidelines: California Edition*. Sacramento, CA, 1993.

California Department of Parks and Recreation. *Access to Parks Guidelines: Supplemental Reference Documents for Interpretation*. Sacramento, CA, 1997.
Copyright. Sacramento, CA: California Department of Parks and Recreation, 2002.

Eastman Kodak Co. [online]. Rochester, NY: 2002. Available from World Wide Web:
<http://www.kodak.com>.

Ham, Sam. *Environmental Interpretation: A Practical Guide for People With Big Ideas and Small Budgets*. Golden, CO: North American Press, 1992.

Harpers Ferry Center Interpretive Media Resources [online]. Harpers Ferry, WV: National Park Service, 2002. Available from World Wide Web:
<http://www.nps.gov/hfc>.

Porter, Erika. *All Visitors Welcome, Accessibility in State Park Interpretive Programs and Facilities*. Sacramento, CA: California Department of Parks and Recreation, 1994.

Robbins, Dale. *Understanding Church Sound Systems* [online]. Grass Valley, CA: Victorious Publications, 1990. Available from the World Wide Web:
<http://www.victorious.org/soundsys.htm>.

Tilden, Freeman. *Interpreting Our Heritage. Rev. ed.* Chapel Hill, NC: University of North Carolina Press, 1967.

United Visuals, Inc. *Tech Tips* [online]. Itasca, IL: 2002. Available from World Wide Web: <http://www.unitedvisual.com>.

United States Copyright Office. Washington, DC: 2002.



Additional references

Kodak Sourcebook: Kodak Ektagraphic Slide Projectors. Publication S-74. Rochester, NY: Eastman Kodak, 1989.

Heinich, Robert, Michael Molenda, James Russell, and Sharon Smaldino. *Instructional Media and Technologies for Learning.* 7th ed. Prentice Hall, 2001.

Schroeder, Don, and Gary Lare. *Audiovisual Equipment and Materials: A Basic Repair and Maintenance Manual.* Scarecrow Press, 1989.



Appendix A

prepared by
Wil Jorae and Laura Reimche
California State Parks
Sacramento, CA
2002



California State Parks Intellectual Property Rights

Copyright

“Copyright is a form of protection provided by the laws of the United States (title 17, U.S. Code) to the authors of ‘original works of authorship,’ including literary, dramatic, musical, artistic, and certain other intellectual works. This protection is available to both published and unpublished works.”

However, for a work to be entitled to protection, it must first be fixed in a tangible form.

Copyright law protects artists, giving them sole right to reproduce their works. It also protects the artist or person who owns copyright to said material against unauthorized use of their work by others. Use of nonowned, copyrighted material requires the expressed permission of the artist or owner of intellectual property rights. Furthermore, only the creator or person who owns copyright can create or authorize the creation of “derivative works” and/or “compilations.” The Library of Congress defines a derivative work as “a work that is based on (or derived from) one or more already existing works.” Compilations are collections of preexisting materials or data, selected, coordinated or arranged so that the resulting work as a whole is a new original work of authorship.

Before using a work that you did not create, the status of the copyright should be determined, and appropriate permission to use the work should be obtained. This can take the form of a formal license agreement or a simple letter granting permission to use the work for the requested purpose.

How to Determine the Copyright Status of a Work

There are several ways to investigate whether a work is under copyright protection:

1. Examine the work to determine if a copyright notice or disclaimer is affixed to the work.
2. If the work is from a published book, look for photo credits in the appendix or in the caption under the image for source, collection, artist, photographer, and date.
3. If no identification is given with the image, contact the publisher and/or the author. The author or author’s estate can usually be contacted through the publisher.
4. Examine the subject and content of the work and contact museums, libraries, or archival institutions that hold works of similar subject matter. These types of institutions may provide referral to additional sources.
5. Have the U.S. Copyright Office perform a search. The Copyright Office publishes a Catalog of Copyright Entries, organized by type of work. The Copyright Office staff will also search its records for a fee.

Determining the duration of a copyright can be a very complicated and difficult process, depending on when the work was created and who created it. However, under current law, if a work was created prior to 1922, it is probably in the public domain, with any copyrights that once existed having expired. If a work is determined to be in the public domain, no permission for use is necessary. If a copyright holder is identified, permission for your intended use should be sought and documented.



Good Faith Effort

If through all or some of the above methods you are unable to locate the copyright holder of the work and have exhausted all “reasonable” possibilities, then you have made a “good faith effort” to determine the holder of the copyright. All correspondence and notes obtained during your investigation should be retained with the project file.

Fair Use

Copyright law does permit the use of copyrighted images under the concept of fair use. The concept or defense of fair use allows for the taking of portions of copyrighted work for limited purposes without requiring the copyright owner’s permission. However, there is no clear definition of fair use in the Copyright Act. Section 107 of the Copyright Act (11 USC 107) permits the use of copyrighted material for parodies, news reporting, teaching, scholarship, research, and for criticism or commentary under some circumstances. But, this permitted fair use is determined in large part on a case-by-case basis through weighing the following factors:

1. Purpose and character of the use (i.e., Is it commercial? Controversial? Does the secondary use supersede the original work?)
2. Nature of the copyrighted work (i.e., Is it published? Regularly sold/licensed for profit? Is it highly creative - factual or fiction?)
3. Amount and substantiality of the portion used (Quantitatively? Qualitatively?)
4. The effect on the potential market for the copyrighted work (i.e., Is the market impaired? Are licenses reasonably available? Is the use repeated and long term?)

Thus, the Copyright Act does not provide a specific exemption for copies made to advance interpretive, educational, and scholarly objectives.

A question raised frequently is, does the use of copied images in an interpretive or campfire program fall under the interpretation of fair use. This question does not have one answer other than, “it depends.” Congress has endorsed guidelines that provide some assistance in deciding whether a particular use constitutes fair use in the educational context. However, even these guidelines are aimed at classroom teaching situations. Moreover, compliance with these guidelines has influence on the interpretation but is not binding on courts. Thus, consent for intended uses should always be sought where possible. The educational fair use guidelines include, but are not limited to, the following directives:

1. Avoid unfair exploitation, even with noncommercial uses;
2. Do not copy any more than necessary for intended use;
3. Provide notice of copyright and credit where possible;
4. Use is more defensible if it is spontaneous (no chance to seek permission);
5. Stay within the page limits for copying set out in the guidelines (entire work if it is less than 2,500 words, 1,000 words, or 10 percent of the work);
6. Use a single copy where possible (overheads are better than handouts); and
7. Comply with the brevity, spontaneity, and cumulative effect test outlined in these guidelines.



Appendix A

Identification

Any duplicate images captured in electronic or standard photographic form should have the actual source document in the image itself or on the image border, back, slide mount, etc. Ideally, the source listed would be the copyright holder for a particular image. Minimally, the source should be the magazine (name and publication date), book, etc., from which the image was copied. If you have doubts as to whether or not the intended use falls within the guidelines of fair use, please contact CSP's legal office for advice. Additionally, the image should be marked, "For Reference Use Only."

When copying images copyrighted to California State Parks, one should transfer the following information from the original to the copy image (per forthcoming Departmental Notice on *Photographic Material Documentation*):

1. Original photographer's last name and first initial
2. Park name or location
3. Date photograph was taken (as specific as possible)
4. Primary subject matter (determined by original photographer)
5. Names of individuals, if any, depicted in an image should be noted and kept with copies of the original photo releases on file.

Works Cited

United States Copyright Office. *Circular 1: Copyright Basics – What is Copyright?* [Article Online]. Library of Congress. Accessed on 10/11/2002. Available at www.copyright.gov/circs/circ1.html#wci.

United States Copyright Office. *Circular 14: Copyright Registration for Derivative Works*. [Article Online]. Library of Congress. Accessed on 10/11/2002. Available at www.copyright.gov/circs/circ14.html.

United States Copyright Office. *Circular 22: How to Investigate the Copyright Status of a Work*. [Article Online]. Library of Congress. Accessed on 10/11/2002. Available at <http://www.loc.gov/copyright/circs/circ22.html>.

United States Copyright Office. *Circular 15a: Duration of Copyright: Provisions of the Law Dealing with the Length of Copyright Protection*. [Article Online]. Library of Congress. Accessed on 10/11/2002. Available at <http://www.copyright.gov/circs/circ15a.html>.

United States Copyright Office. *Factsheet FL102: Fair Use*. [Article Online]. [Article Online]. Library of Congress. Accessed on 10/11/2002. Available at www.copyright.gov/fls/fairuse.html.

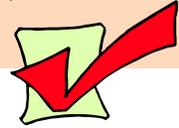
United States Copyright Office. *Circular 21: Reproduction of Copyrighted Works by Educators and Librarians*. [Article Online]. Library of Congress. Accessed on 10/11/2002. Available at <http://www.copyright.gov/circs/index.html#fl>

Audiovisual





Self assessment



Answer each question in the section below before reviewing the material in Module 11-Audiovisual. The answers are not provided. Check your answers with your colleagues and as you read Module 11-Audiovisual. Items from the self assessment may be reviewed and discussed in class.

- 1) The most underutilized piece of equipment is:
 - a) slide projector
 - b) copy machine
 - c) camera
 - d) copy stand

- 2) What are the key differences between 35mm and digital cameras?

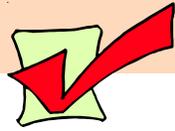
- 3) What speed of 35 mm film affords the greatest opportunity to capture fast action?
 - a) 200
 - b) 400
 - c) 800
 - d) 1,000

- 4) Which camera provides the highest resolution?
 - a) 35mm
 - b) digital

- 5) What is a copy stand?



Self assessment



12) To control feedback from a microphone you should (Circle all that apply.)

- a) Turn volume up
- b) Move microphone away from the speakers
- c) Increase the tone
- d) Place speakers behind you

13) Lenses can be safely cleaned with window cleaner and paper towels.

- a) True
- b) False

14) By storing batteries in the refrigerator you can extend their life.

- a) True
- b) False

15) What is the “rule of thirds” in photography, and why should you use it?

16) What is “fair use” of copyright materials?

Now that you have completed the self assessment questions, review the material in Module 11-Audiovisual to confirm your answers. After reading the module, move on to the workbook learning activities, which will assist you in developing your skills.



Workbook learning activities



To help you review and apply the material covered in Module 11-Audiovisual, a selection of review questions and/or activities is provided. Again, no answers are included. Use the material from the module, outside sources, and your colleagues to help you complete the activities and answer the questions. There may be more than one right answer. Use the questions and activities to generate discussion about the material. Be prepared to discuss, perform, or demonstrate your answers in class.

- 1) Practice loading slides in a carousel and showing them. Use some slides with words on them to be sure you are loading them correctly.

- 2) Describe when you should use AV equipment.

- 3) Describe two ways you can change a 3" x 5" picture into a large enough visual form to use during a program.

- 4) Do you think a digital or a 35mm camera would serve a greater purpose? Why?

