

SLIS 5720 AV Labs Equipment Operation

Verification of competency in the following pieces of AV equipment is required before a candidate may be recommended for the school librarian certificate:

AV Competency #1 = Overhead projector

AV Competency #2 = Data Projector

AV Competency #3 = TV/VCR

AV Competency #4 = Video Camera

AV Competency #5 = Digital Camera

AV Competency #6 = Scanner

AV Competency #7 = Computer

These competencies will be verified by performing the listed tasks in the presence of a person who has an expertise in the specific equipment. Examples of such persons are certified librarians, building or district technology staff, ESC technology staff, computer store personnel, or trainers. When the competencies are completed, the signature page on the final page of this document should be filled out and submitted to the SLIS 5720 instructor.

Students will receive a grade of incomplete in SLIS5720 until all the competency sheets have been acceptably completed.

AV Lab #1

Overhead Projector Operation

The overhead projector is the technology device most likely to be available in the classroom. There are traditional overhead devices that require the projected material to be transparent, and there are “document camera” type devices that can project both transparent and opaque materials.

Set Up

Connect power cord to AC outlet

Locate controls:

- On/off switch
- Focus knob
- Lens head (controls where image is projected)

Operate

Complete each of the following steps:

_____ Turn projector on. (Some projectors have a two-position on-switch).

_____ Position transparency on stage.

_____ Adjust projector to eliminate keystoneing

_____ Focus image using focus knob.

Disassemble

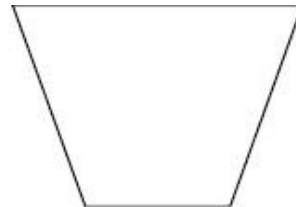
Restore to storage conformation.

Troubleshooting

Image distortion: The head of the projector should be perpendicular to the projection screen. If the projector is not at right angles to the screen, a phenomenon known as “keystoneing” takes place. The projected image takes on the shape of the keystone of an arch. *See Diagram below.*



Ideal projected image



Keystoneed image

To correct the problem, raise or lower the projector or screen until perpendicular to one another. Tilting the screen can also solve the problem.

No light after flipping switch: a) Make sure the projector is plugged in and turned on! This is the most common reason for any AV equipment failure. b) Make sure the power switch is all the way to the on position. Some overheads have a 3 position switch so the fan can run without the bulb on to cool the bulb after use. c) Lamp may be burned out and bulb may need to be changed. **NEVER TOUCH BULB WITH BARE HANDS.** Natural oils on your fingers will shorten bulb life significantly. Bulbs can be expensive ≈ \$25 apiece if bought singly. d) Switch may be defective. Have technician correct. This is the least likely cause.

Dark spot on area of screen: a) If the dark area is around the edge of the screen, the problem is that the fresnel (pronounced “freh-nel”) lens is in upside down. Some fresnel lenses are easy to unscrew and reverse. Others require the assistance of a technician. While the lens is out, wash it with Dawn or other mild dishwashing soap before replacing. b) If the dark area is elsewhere on the screen, the lamp socket may need adjusting. This repair requires a technician.

Failure of lens to focus despite all adjustments: If you are certain that dirt isn’t the cause, the likely cause is a warped fresnel lens. Fresnel lenses, being plastic, can be damaged by excessive heat. The cause may be a defective fan, or may be caused by stacking papers or books atop a running projector. A technician will need to replace the lens and check the fan and thermostat.

AV Lab #2

Data Projector Operation

A data projector works much like a scan converter. It accepts video output from the computer and displays it on a wall or projection screen. The advantage of the projector is that it projects a larger image than that on a typical 32" TV -- as large as 10' x 12', depending on the projector. Data projectors are suitable for large classrooms, auditoriums, or any application where viewing computer screen detail is important.



Proxima Data projector

The disadvantage of data projectors is the cost. A typical scan converter costs about \$200 while a good data projector can cost from \$2500 - \$5000. Bulbs for data projectors are also expensive -- up to \$500 each.

Setup

Locate input/output ports on computer and projector

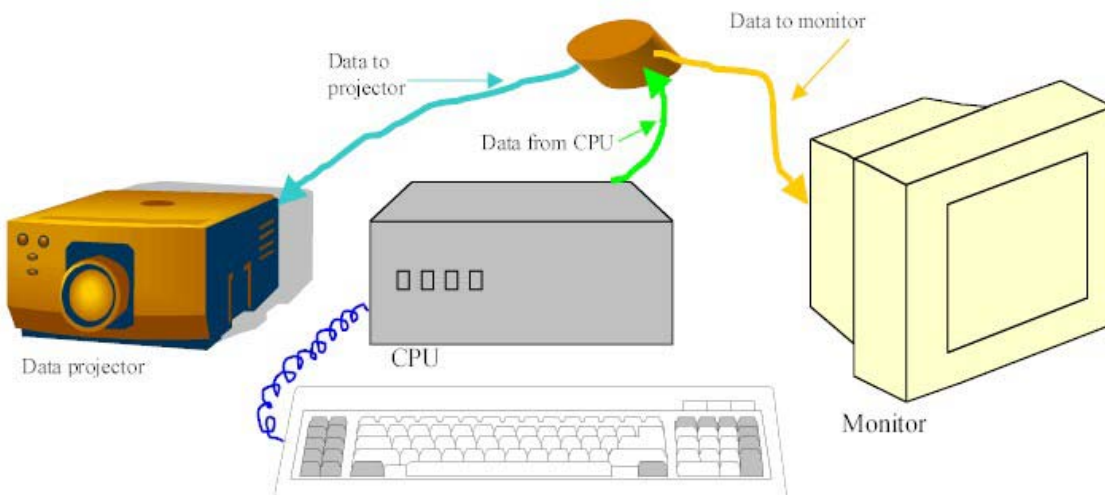
Hook computer to projector

If available, hook computer monitor to projector

Locate controls:

- On/off switch for projector
- Volume
- Blank button
- Focus controls

Connecting a data projector to a computer



Operation

- _____ Turn on projector.
- _____ Turn on computer.
- _____ Select data source.
- _____ Focus display.
- _____ Adjust color/brightness, etc. if needed

Disassemble

Shut down computer. Disconnect computer data cable from projector and computer. Reattach monitor data cable to video port on computer.

Troubleshooting

No picture: Is the power on? If you are using a laptop computer, switch video display mode on laptop computer to external. Is blank or standby selected?

Picture not clear: Adjust focus; clean lens.

Remote doesn't work: Does it new batteries?

AV Lab #3 TV/VCR Operation

Set Up

Connect power cords to AC outlet.

Locate controls:

- On/off switches for both TV and VCR
- Volume
- Play, rewind, fast forward, stop, eject, pause, record buttons
- TV/VCR toggle button
- Channel selection button

Operate

Complete each of the following steps:

_____ Turn TV and VCR on (some models are a combination of the two).

_____ Load and play videocassette.

_____ Stop and rewind videocassette

_____ Change reception channel and connect cables for off-air taping.

Disassemble

Eject videocassette.

Restore to storage conformation.

Troubleshooting

Videotape is running, but there is no picture or sound on monitor: a) You forgot to select the TV/VCR switch; b) the VCR isn't hooked up properly; or c) you have the VCR set to either channel 3 or 4 and the TV is set to the opposite number.

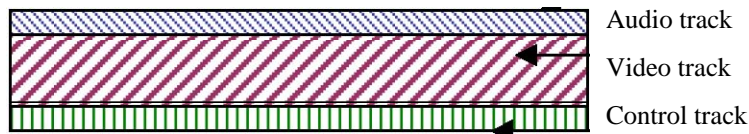
Fuzzy sound or snowy picture: Tracking needs to be adjusted.

Tape loose in video cassette: Tighten by using fingers to wind the spools in opposite directions.

AV Lab #4

Video Camera Operation

Video cameras use a CCD (charged-coupled device)—a light-sensitive electronic module—to change light into electrical impulses. The impulses are stored on magnetic tape. The recorded tape can be played back through the camera into its video eyepiece or to a regular television set. Video is recorded on tape in a helical arrangement (see *diagram*), which prevents accurate splicing of the tape.



Set Up

Connect power cord to AC outlet and AC adaptor, or be sure battery is in place.

Locate controls

- Power switch
- Battery eject
- Focus rings
- Play, rewind, fast forward, stop/eject, and pause/still buttons
- Zoom controls – fast forward and reverse
- Manual/auto focus button
- Red record/button

Locate parts

- Battery pack
- Lens cover
- Eyepiece/viewfinder: Notice indicators through viewfinder – battery level (never let camera run on low battery, never leave battery discharged for more than 24 hours), time remaining for recording, date and time, operating mode rec/pause/ff/play/rew
- Microphone
- Handgrip

Press stop/eject button and insert videocassette window side out. Shut case.

Operate

Complete each of the following steps:

_____ Turn power switch on. Red indicator light will illuminate. Turn eyepiece out to the left so you can look through it. It will click into place.

_____ Remove lens cover and set focus button to manual. This will prevent the camera from constantly focusing with each movement the subject makes, draining power. Looking through the viewfinder, manually focus the subject.

_____ Press record/pause to begin recording. Press again to pause recording. Practice zooming smoothly into and out from subject. Remember that zooming takes more battery power. In pause mode, press stop/eject to stop recording.

Disassemble

Remove videocassette.

Replace lens cover.

Return eyepiece to storage position.

Switch camera off.

Restore to storage conformation.

Troubleshooting

Camera is on, but I can't see my subject through the viewfinder: a) Lens cap on; b) camera in "play" mode.

The videocassette case won't shut: Cassette will only fit case one way. Turn around.

My subject, through the viewfinder, is only in black and white: Some viewfinders are black & white even though the camera records in color. Perhaps you have a special feature turned on in camera.

AV Lab #5

Digital Camera Operation

Set Up

Be sure batteries are charged and installed.

Locate controls

- Power switch
- Shutter release button
- Flash button
- Play/camera
- Brightness controls
- Zoom control (wide/tight)
- Auto focus control
- Control panel display

Operate

Complete each of the following steps:

- _____ Open the lens cover (do not touch the lens).
- _____ Insert removable memory chip or “stick” or formatted floppy disk.
- _____ Power on the camera.
- _____ Select the desired flash setting.
- _____ Frame your subject in the viewfinder or on the LCD panel. Press the shutter release button. Take multiple photographs.
- _____ Select image from camera index. Delete one image.
- _____ Close lens cover when finished.

Disassemble

Return to storage conformation.

Troubleshooting

While trying to photograph, the control panel registers blank: a) Camera is switched to viewfinder mode; b) control panel is turned off; c) camera is not turned on.

LCD display shows only black and white images: a) Camera has special features turned on; b) LCD display is monochrome.

AV Lab #6

Scanner Operation

A scanner converts print documents and images to digital format for use on the Web and in word processing or desktop publishing documents. Refer to Internet site: <http://www.duq.edu/Technology/QS/pcscanner.html> for more information. Your scanner and scanning software may differ from this setup. Consult your local computer technician to see if these directions must be modified for your own installation.

Set Up

Locate controls:

- Power switch
- Document cover

If scanner is off, restart computer with scanner on so the computer will communicate with scanner.

Operate

Complete each of the following steps:

- _____ Double click on HP Precision Scan Pro II icon on desktop.
- _____ Place image/document face down on scanner glass at the corner marked with the page icon (upper right corner).
- _____ Click on the Preview button.
- _____ When scanned image appears, drag selection rectangle around the portion of the image you wish to scan.
- _____ Click SCAN button
- _____ Select Save As from the scan menu or click on floppy disk icon. Image must be saved to floppy disk! Name file. Click SAVE.
- _____ In JPEG Options dialog box, click OK.
- _____ To edit image, double click on name of image file. MS Photo Editor will automatically open for edit.
- _____ Print image.

Remove original from glass

Troubleshooting

Straight lines on your scanned image appear crooked or jagged: Image was not aligned with edge of scanner. Straighten and rescan or use image editing software to rotate image until sides are straight.

Power is on to scanner but computer error message says computer cannot find scanner: Scanner was not on when computer was started. Turn on scanner and reboot computer.

AV Lab #7

Computer Operation

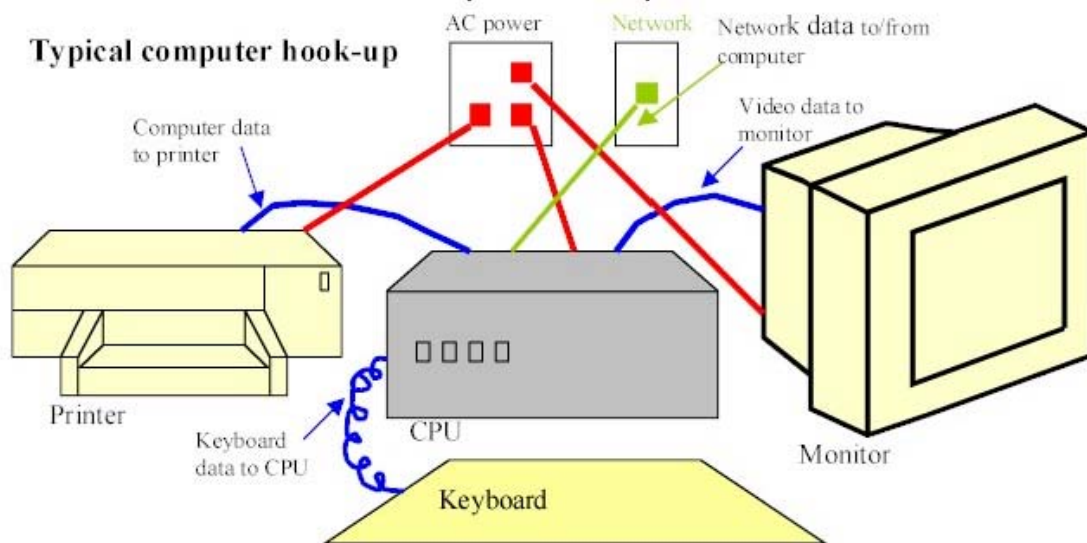
Never hook or unhook computer components while there is power to the CPU.

Setup

Identify the following parts:

- CPU – central processing unit (main computer box)
- Keyboard
- Monitor
- Mouse
- Printer
- Speakers
- Monitor data cable
- Printer cable
- Power cables to printer, monitor and CRU
- Network data port
- Network cable

Locate controls on CPU, monitor, printer and speakers.



Operate

Complete each of the following steps:

- _____ Connect monitor data cable to video port on CPU.
- _____ Connect keyboard to keyboard connector on CPU. Check to see that pins are properly aligned before pressing in.
- _____ Connect mouse.
- _____ Connect printer cable to parallel port on printer.
- _____ Connect printer cable to LPT 1 port on CPU.
- _____ Connect speakers to Audio Out or speaker port on sound card.
- _____ Connect network cable to network jack in CPU.
- _____ Connect other end of network cable to network wall jack (make sure it isn't a telephone jack!).
- _____ Connect power cables to CPU, monitor, printer and speakers.
- _____ Turn on monitor, printer, and speakers.
- _____ Turn on CPU.
- _____ Follow computer shut down procedure before power off.

Troubleshooting

Computer is on, but no image appears on monitor: a) Monitor is not connected to video card; b) monitor is not plugged in and turned on.

Computer and monitor appear to be working normally, but network access is not possible: a) Computer is not connected to network. Unplug and replug network cables at both ends; b) computer is not configured for network access. Consult technician; c) network jack is not working. Try another jack.

Computer works, but nothing will print: a) Printer is not hooked to parallel port of CPU; b) printer is not turned on; c) printer drivers are not installed.

**SLIS 5720
AV Checklist
Signature Page**

Please submit this page to the SLIS 5720 instructor:

I verify that the student (named below),

has completed the competencies in the following pieces of AV equipment (*please initial each of the AV competencies that the student has completed and sign below*):

___ AV Competency #1 = Overhead projector

___ AV Competency #2 = Data Projector

___ AV Competency #3 = TV/VCR

___ AV Competency #4 = Video Camera

___ AV Competency #5 = Digital Camera

___ AV Competency #6 = Scanner

___ AV Competency #7 = Computer

Printed Name _____

Verification
Signature _____ Date _____

Position _____

Phone Number _____

Business Address _____

(Acceptable supervisors: certified librarians, building or district technology staff, ESC technology staff; computer store personnel or trainers)