

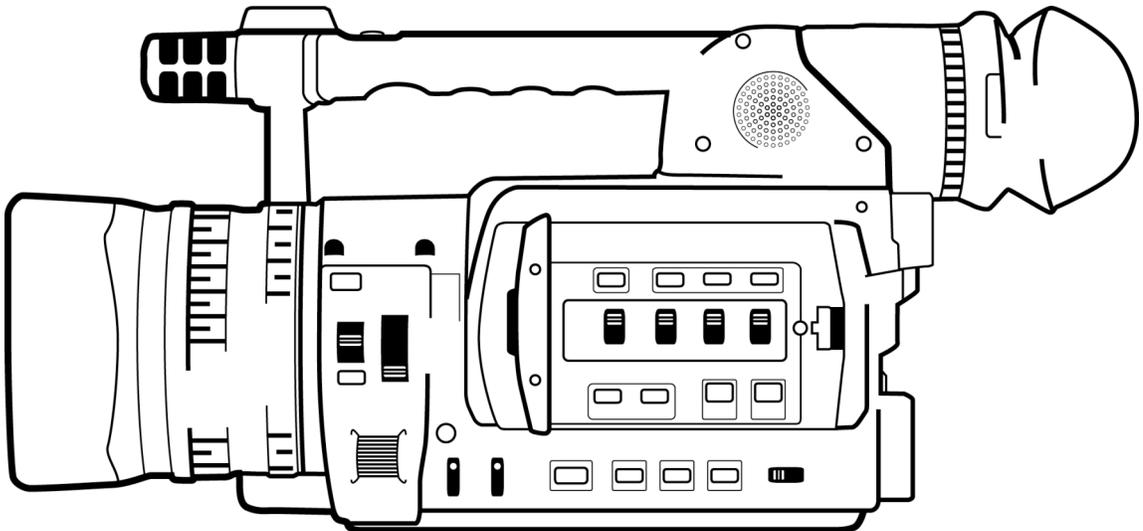
# NEW YORK FILM ACADEMY

## Digital Camera Tests

These tests are designed to familiarize you with how to properly use and operate a digital camera as well as how adjusting various settings will affect your overall picture.

### **Before starting the tests, do the following:**

- 1) Read through ALL the tests and make sure that everyone in the crew knows how the tests are set-up and run. Certain tests will have helpful tips at the end of its instructions.
- 2) Note all the equipment that is checked out to you. Keep everything with you at all times.
- 3) As with every tape you shoot, roll 30 seconds of color bars for pre-roll and finish your tape with at least 30 seconds left (for post-roll) – not doing so may render those beginning and ending shots unusable.
- 4) Begin by setting up your camera in as default or “normal” of a mode as possible, unless otherwise instructed (i.e. white balance, gain, etc.).
- 5) Take your time with these tests. The results, which you will screen in class, help you learn the ‘look’ of your camera and will be indispensable for your upcoming projects.



# DIG. TEST #1: Exposure/Latitude

This will evaluate the range of the camera's sensitivity to light for a series of irises and test the effects of over and underexposure.

## Setup:

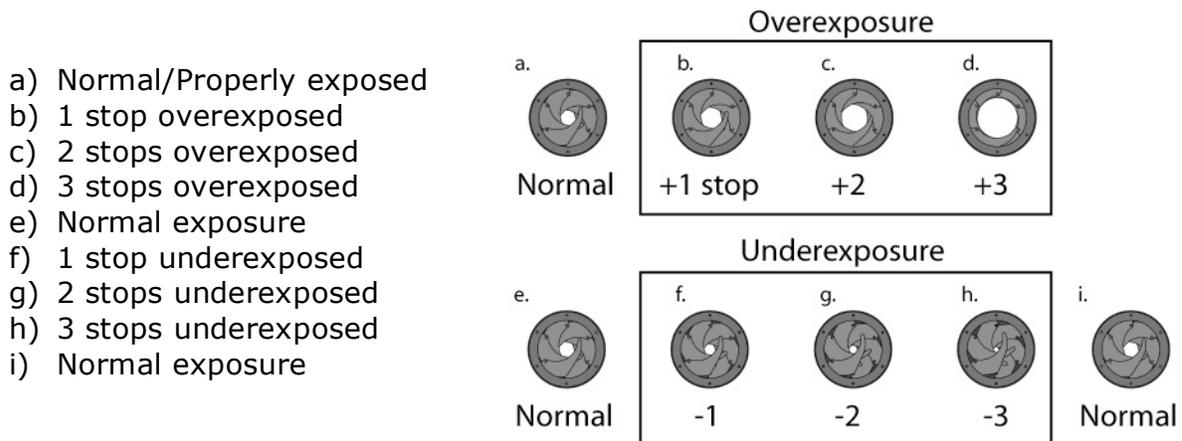
Place a person with low contrast ratio lighting (meaning fairly even lighting across his or her face) in a Medium Long Shot (MLS). The intensity of light of the background should be similar to the light of the foreground. (i.e. if the subject is in shade also keep the background in shade). Note the current zoom setting (focal length) of the shot.

Zoom in completely and adjust the focus manually until the image is sharp. Return to the previous focal length to reestablish your MLS.

Find a proper normal exposure by adjusting the ND filters and iris. The camera must be in manual iris mode. While auto iris can be used to rough in a normal exposure, manual iris is always used on a professional shoot and is required for this test to work. The gain should be at 0db.

## Shoot:

Film 10-15 seconds for each of the following range of exposures:



While filming, have the subject indicate the current exposure in relation to normal by using the slate or hand signals (e.g. closed fist = normal, 1 finger pointing at the sky = 1 stop overexposed, 2 fingers pointing at the ground = 2 stops underexposed, etc).

## Note:

A good test will have a wide dispersion of tonal values, especially: a clear presentation of 18% grey, true white, and true black.

# DIG. TEST #2: Light Direction

This will demonstrate the correct usage of iris in various outdoor lighting conditions with the sun striking the subject from three common directions.

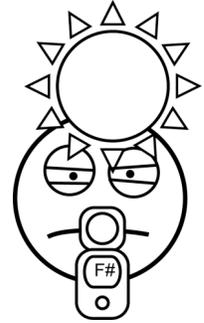
**Overall Setup:** Use a subject in a MCU (Medium Close-Up). Note the focal length.

## Setup 1:

Place the person facing the sun so that he or she is in frontal lighting. Zoom in to set the focus accordingly and then zoom back to the established shot size.

### Shoot:

Properly expose the subject using the manual iris. Film 10-15 seconds. Have the subject turn his or her head slowly from side to side.



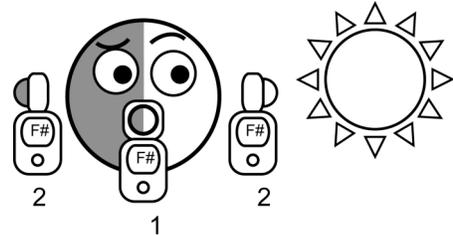
## Setup 2:

Place the person with the sun directly to his/her side creating 1/2 or side lighting. Try to maintain a similar distance from the camera as the first setup. Focus the shot.

### Shoot:

Expose three different ways using the manual iris:

- 1) Average out the light and dark sides of the face.
- 2) Expose to the bright side of the face.
- 3) Expose to the dark side of the face.



For an added example, have the subject turn his/her head slowly from side to side.

## Setup 3:

Place the person with the sun shining directly to his/her back creating back lighting. The distance to the subject should be similar to the first two tests. Focus the shot.

### Shoot:

- 1) Adjust the camera's iris to achieve a proper exposure. Film 10-15 seconds.
- 2) Shoot a second shot for 10-15 seconds with the exposure set to the highlight around the subject (making the subject darker)

For an added example, have the subject turn his/her head slowly from side to side.



# DIG. TEST #3: Lenses

This will show the effects of the zoom lens's focal lengths.

## Setup 1:

Zoom out to the widest focal length. Position a person so that he/she is in a close-up. Memorize the size of the frame for this person because it will be used in the subsequent setups. Position a second person 15 ft. behind the first person. Zoom in and set the focus to the first person, then zoom back to the widest focal length.

## Shoot:

Properly expose the shot. Try to shade light from or bounce light onto the second person so that he/she has a similar "look" to that of the first person.. Film 10-15 seconds.

## Setup 2:

Zoom in to half-way of the lens' zoom range. Reposition the camera so that the first person is in the same size shot as the first setup (a close-up). If necessary, reposition the subjects but always maintain a close-up for the first person and have the second person 15' away. Note the focal length, zoom in to focus on the first person, and then zoom back out to the proper focal length.

## Shoot:

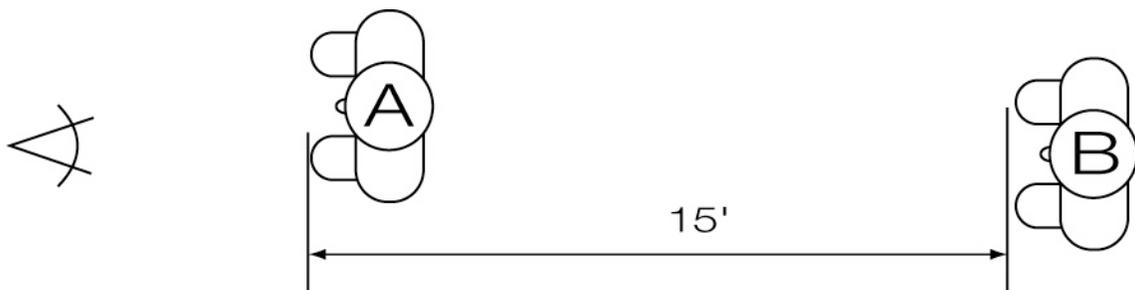
Shoot the properly exposed shot for 10-15 seconds.

## Setup 3:

Zoom in to the longest lens on your camera. Again, reposition the camera or the subjects so the first person is in a close-up and the second person is 15' away. You can focus by eye at this focal length.

## Shoot:

Film 10-15 seconds of the properly exposed subjects.



# DIG. TEST #4: Focus

This will practice the correct setup and operation of a rack focus/focus pull and explore the effects of depth of field.

## Setup:

Two people are having a meeting. Person 'A' starts in a loose close-up using the longest focal length on the lens. On action, Person 'B' will walk from off-screen to a mark 50 ft. behind Person 'A.' 'A' then turns to see 'B' and, after a beat, Person 'B' walks up and stands next to Person 'A.'

The camera's actions are as follows: Focus starts on Person 'A.' When 'A' turns and acknowledges 'B' the focus should rack with the gaze and shift to 'B.' The focus should then follow Person 'B' as he/she walks up to 'A.' The final frame should be both persons in a good composition with good focus.

To achieve good focus, the Assistant Cameraperson should have marks noted at the beginning and the stopping points for Person 'B', but also at 3-4 evenly spaced points along his or her path. Have the subject stand and record the proper focus setting at each mark.

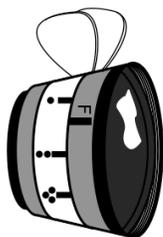
Use the ND filters as necessary so the iris is as open as possible, while maintaining a good exposure.

Expose for Person 'A' and make Person 'B' have the same exposure at his or her first mark. If Person 'B' walks through shadows, the gaffer could walk alongside, out of frame, with a bounce-board and augment the light on Person 'B'.

## Shoot:

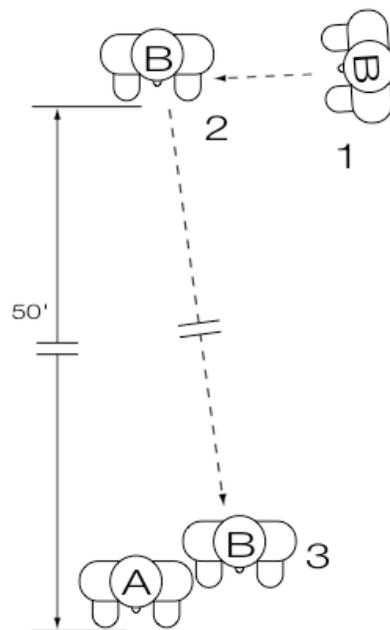
Roll the camera and run the scene. The AC should follow the actors' queues and not the other way around (i.e. try to accomplish the focus pull without the intermediate marks being sounded off by another member of the crew or by going at an unnaturally slow pace).

If time and footage permits, rotate crew positions and repeat the test.



## Tips/Note:

Placing a thin piece of camera tape around the focus ring and drawing marks next to a fixed point sometimes makes the focus pull easier. However, with electronically controlled focus rings (like on the DVX-100 or HVX-200) turning off the camera or spinning the ring past the focus range (close to infinity) could make the marks inaccurate.



# DIG. TEST #5: Shutter Speed

This will show the effect increasing or decreasing the camera's shutter speed.

## Setup:

Zoom to a wider focal length and position a person in a long shot or MLS. Have the subject perform an action that will demonstrate motion, the faster the motion the better.

Make sure the subject knows the lens's field-of-view and stays inside the frame. Also, any forward or backward movement should be followed with the focus. Set focus marks if necessary.

A change in the shutter means a change in time will also occur; therefore, the reciprocity formula states you must compensate with the iris. For each setup, after setting the shutter speed, adjust the iris to achieve a proper exposure.

Reciprocity formula:  $\text{Exposure} = \text{Light} \times \text{Time}$

## Shoot:

Shutter Off/Standard Shutter (1/48th or 1/60th) – Shoot the action for 20-30 seconds.

Slow Shutter (1/24th) – Adjust the shutter and exposure and shoot the same action for 20-30 seconds.

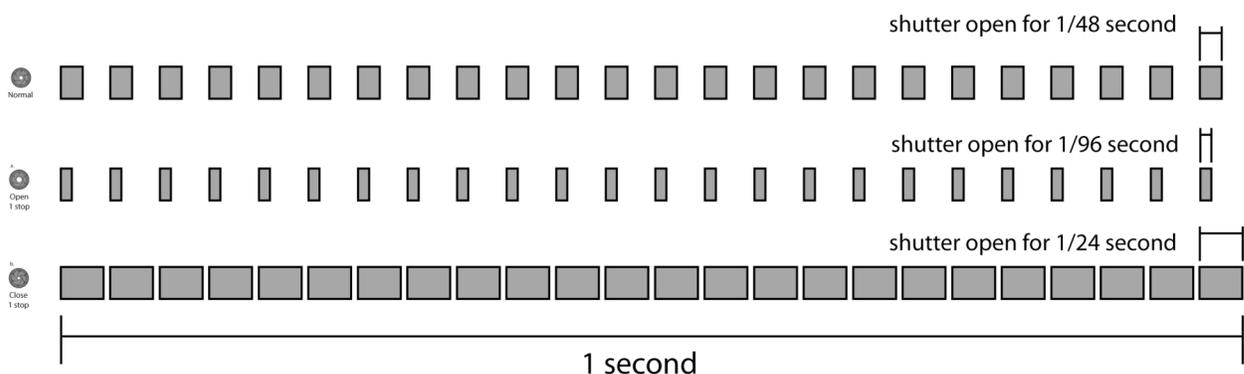
Fast Shutter – Adjust the shutter and exposure and shoot the same action for 20-30 seconds for each (or closest to, depending on the camera):

1/120th

1/250th

1/500th

After you finish, change the shutter back to "off" or the standard 1/60th for 29.97fps or 1/48th for 23.98fps.



# DIG. TEST #6: White Balance/Gain\*

This will show the effects of adjusting the white balance and gain settings. **\*The gain portion of this test will not work on a standard DVX-100 (it will work on the DVX-100A, B and HVX).**

## **General Setup:**

Position a subject in a MLS that includes a variety tones and colors (i.e. lights, darks, and mid-tones).

## **WHITE BALANCE**

### **Setup:**

Set your focus and exposure. Your while balance should be set to the preset appropriate for your available light (i.e. daylight = 5.6K, tungsten = 3.2K).

### **Shoot:**

- 1) Rolling the camera for 10-15 seconds with the proper preset white balance.
- 2) Change the preset white balance to the other option (i.e. 3.2K if you were on 5.6K and vice-versa). Roll for 10-15 seconds.
- 3) Custom white balance to a white card (the in-camera meter and therefore exposure on the white card should read about 70%, if available). Roll for 10-15 seconds.

### **Note:**

If the camera lets you switch between white balance modes while shooting, do not stop the camera between modes; rather, use a slate to indicate the current white balance setting and rotate through the 3 options: Preset 5.6K, Preset 3.2K, Custom.

## **GAIN**

### **Setup:**

Change the camera back to the correct white balance. Adjust the camera's menu settings so that the gain settings of 6db and 12db can be achieved.

Zoom in so the subject is in a MS that still includes a variety tones and colors. Set your focus, turn on the **auto iris\*\***, and set your gain to 0db (or off).

\*\*This is the only shot in which you should use auto iris while rolling.

### **Shoot:**

Shoot the auto-iris shot for 10-15 seconds. While rolling, switch the gain to +6db and film for another 10-15 seconds. Keep recording while turning the gain to +12db. After 10-15 seconds, switch the gain back to 0db and finish by rolling the last 10-15 seconds.