

STAGE & THEATRE PHOTOGRAPHY

Revised for the 44th Drama Festival, Spring 2003

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Why should you take photographs of your productions? After all, inexpensive, high quality camcorders are available that can provide excellent documentation of your production, showing all the staging, lighting & scenery. There is nothing wrong with a video documentation of your production, however that is all it is. It does not provide focus, and, unless you have a full video production team and a mobile studio, will not come close to the level of film or TV production. Stop and picture in your mind the most memorable images in your life. How many of them are moving? Still photographs capture a moment, providing time for the viewer to contemplate the image. They provide a common focus for the viewer - if I mention the National Geographic cover picturing the young Afghan woman with the haunting eyes, we all "see" the same picture. A still image allows the photographer (and the director) to choose the point of focus.

There are other practical reasons for making still images of your production. They can be used for publicity, web pages, demonstrating the level of your productions to sponsors, even as ammunition for additional funding through your school board. Set, costume and lighting designers will all appreciate images of their work. To meet these purposes, high quality photographs are essential.

I would like to suggest a number of steps that can be taken to improve the aesthetic and technical quality of your stage photography. The first decision is whether to take your pictures in house, or hire a photographer. It appears that hiring a photographer removes most of the difficulties associated with stage photographs, but in reality, it only alleviates the need of knowing how to operate a camera, and adds one more voice in the decision making process. Relatively few professional photographers have much experience with theatrical photography; you may not want to pay them to learn the process on your productions.

Many schools offer courses in photography, and, with the advent of better cameras and films, less technical knowledge is necessary to produce a high quality result. Talk with your art or photography teachers to find talented students or staff willing to work with you on your production.

Another early decision is to determine why you are taking the photographs. If they are for publicity, black & whites are by far the most useful. Although many newspapers are using a few color images, most prefer black and white photographs. The quality of a black & white print from a color negative or slide is poor. If your photographs are going to be used by the cast & crew for portfolios, kept as a record of the production, or used for presentations, color slides or prints are better. Choosing between slides or print film is difficult. Color print film is usually less expensive, more readily available, and, because it offers a wider exposure range than slides, far more forgiving to incorrect exposure. For inexperienced photographers, print film will give the best result at the lowest cost. Since most film processors do not provide proof sheets for their color prints the biggest problem I have found with print film is storing the results and maintaining a system that allows you to find the correct negative to match a print. If you decide to use print film, look for a processor willing to provide a proof sheet, and purchase negative holders from a company such as Century Plastics.

If you have enough interested photographers, try shooting with all three types. If limited, I suggest shooting the production with both a slide film and black & white.

Most publicity photographs end up as 8 X 10 prints. Try to work with a fine grain film. There will be a strong temptation to use fast films, but remember that the faster the film, the larger the grain size. We use Kodak TMAX 400 and a 2 1/4" format for most production black & whites. Since few photographers have medium format cameras, you will probably need to shoot these images with a 35mm camera. Since this requires greater enlargement than medium format the need for fine grain film is essential. For color slides, try using a tungsten balanced film such as Kodak Ektachrome 160 (ET). The ASA/ISO of this film can be doubled to 320 by using ESP processing (available through your photo dealer), and it produces realistic color balance under most conditions. Kodak also produces a professional tungsten based slide film - Ektachrome 320T (EPJ). This

is an ASA/ISO 320 film with wider latitude (exposure range) than the ET stock. It must be kept refrigerated until use, and is only available at pro camera stores. If a warmer quality is desired, try using a daylight film such as Ektachrome 200 or 400. It will not provide realistic color, but the stock is easier to find, and many find it acceptable. Better yet, try shooting the same production with each, comparing, and decide which provides the desired results. There are many more choices available for print film stocks. Some suggestions to start with include Kodak Royal Gold 400, or Fuji NPZ/NPH II 800. Both these films are very forgiving of high contrast theatre lighting, and provide excellent color rendition.

Although it is important to try new films and experiment to improve your technique, it is more important to become completely familiar with the film you use for productions. The effect of low lighting levels, colored gel, and high contrasts are different for each film, and it is imperative that you master the idiosyncrasies of whatever film you use. Do not use a new film or technique if it is to be the only record of a production. This is another opportunity to get the photography students in your school involved. Give each a different film stock and compare the result.

Become completely familiar with your camera. You will take better photographs with the camera you are used to working with than you will with a "better" camera borrowed for the production. If possible, practice on a few productions without the pressure of your photographs being the only ones taken. If your camera uses automatic exposure, try to work without it. As noted below, theatrical lighting produces exposure problems that can often be corrected with manual settings.

Take notes! Unless you have a very crowded production schedule, you will often have weeks, or months between photo sessions. This is enough time to forget most of what you did on the previous production. Without notes, you will often make the same mistakes over and over again. During picture call have an assistant with you (or a cassette recorder), and relay everything that might be useful in analyzing the results. Set aside some time to use the notes to review your proof sheets or slides as soon as they are returned. Make additional notes during this review, and go over these notes just prior to your next picture call. Although this seems like a lot of work (and time), it is the fastest way to improve the technical quality of your photographs.

Avoid using flash or strobes for your stage photographs. The temptation is great: no actors moving, no camera shake, and no more problems with low lighting levels, but the problems are greater: the elimination of the lighting designer's work, the high cost of strobes powerful enough to cover an entire stage, and shadows on the scenery. Studio strobes are useful for resume and pre-production publicity, but are extremely difficult to use on a stage set. With rare exceptions, better quality photographs will be taken under stage lighting than with flash. One possible exception would be to provide a photograph for the set designer. Generally the designer will want photos taken under stage lighting conditions, however this often leaves the top of the set disappearing into darkness. A powerful strobe can be used to fill the area, producing a photograph that, although not true to the production, does show all of the scenery.

Without a flash, you will often find that the light levels available are very low. With ASA/ISO's under 400, and reasonable aperture, you will find that you are often taking photographs at shutter speeds of 1/60th to 1 second. These speeds require the use of a tripod & a shutter release. One of the basic rules of photography is that it is impossible to hand hold a camera when the shutter speed is slower than the focal length of the lens. In other words, if you are using a 135mm lens to take your photographs, you must use a shutter speed of at least 1/135th of a second. Since the nearest faster shutter speed in most cameras is 1/250th of a second, that is what you must use to avoid blurring the image. Many photographers will not accept this limitation, and feel that they can hand hold a camera for long exposures. If you need proof, either for yourself or your photographers, enlarge an image from a handheld shot taken at a shutter speed less than the focal length of your lens. It will almost always show blurring caused by camera shake. Since modern cameras are often using "program" settings for aperture & shutter speed, you may not know the shutter speed the camera chooses for you. This is another reason for using a tripod.

I know there are problems getting the legs to fit between the seats, and it slows you down when you move from

place to place, but if you want high quality photographs, you must use one. The tripod should be stiff enough so that it will steady itself quickly after you are finished adjusting the camera, and strong enough to hold the largest cameras you plan to use. It will be expensive, and hard to find, but a lightweight tripod takes too long to stop vibrating after you have finished adjusting the camera. An additional advantage of a heavy-duty tripod is that two cameras can be mounted on it. This allows for both color and black & white photographs to be taken at the same time, or gives you an extra camera for testing a new film.

There are some specific problems worth noting about stage photography. Obtaining correct exposure is one of the most difficult, particularly with color slides. Many meters built into cameras cover the entire viewing area. The composition of some of your photographs will include bright lights in the center and darkness on the edges outside the acting areas. This will often fool the light meter into averaging the two together, and causing your acting area to be overexposed. A center-weighted meter will help this problem, but even these can be fooled by very high contrasts. The cure is to meter close to the stage so that the acting area is all that is in the viewfinder, then move back to get the composition you desire. Of course, you will need a manual camera or exposure lock to accomplish this.

Another solution is to use a spot meter, a device that measures the light over a very narrow angle. Because of the narrow coverage, you can use the meter from almost anywhere in the theatre, and still measure only small areas of the stage. Obtaining proper exposure with a spot meter takes practice; it covers such a small area that it can often give you misleading information. To use it properly, you need to meter the brightest and the darkest parts of the picture, and interpret the result. Again, a camera that can be set manually would be necessary to use an external spot meter.

A last (and perhaps best) possibility is to use an incident meter. This meter is taken to the stage, aimed back at the camera, and produces a measurement of the amount of light on the subject. It uses a translucent dome over the sensor that averages the light. Take a couple of readings from different areas of the stage, and use these to set your camera. Incident meters generally give you a more accurate reading since they do not depend on the reflectivity of the subject you are measuring, but still need to be interpreted by the photographer.

Another problem with metering is that most light meters and film, even black & white, are expecting the light source to be white light. When measuring colored light, especially saturated hues, be prepared to have the meter or film produce incorrect results. Bracket (shoot at the indicated exposure, at least one stop above, and at least one stop below) any unusual lighting conditions until you have enough experience with both your meters and your film to predict the result.

Brightness ratios on stage produce exposure problems in almost all productions. A good lighting designer makes use of both light and shadow. The human eye is a wonderful instrument that can see details in shadows that are many times dimmer than the brightest areas of the stage. Film can't do this. This produces the dilemma that if a designer lights for an audience, the contrast or lighting ratios will be too wide for film, and if he/she lights for film, the range will be so compressed that it will be boring for the audience. Of course the audience wins, and that leaves the photographer with a problem.

Color slide film will provide good results with contrast ratios of 1:3, and while black & white or color print films are better, neither is close to that of the human eye. There is no simple solution to this problem. If you expose for the brightest parts of the scene, the shadow detail will be lost, and if you expose for the shadows, the highlights will burn out. Often, you will lose both. Although a complete redesign of the lighting is not possible, often a few quick changes are all that is necessary to bring the range within limits. This problem often shows up with followspots and specials, and by dimming the followspot or brightening the rest of the lighting it is often possible to balance the levels. Careful composition may also help.

Another problem is that stage photography, like many photo opportunities, provides once in a life time situations. It is generally too late to re-shoot a production after the proof sheets are back. The only solution to

this is to lean towards the conservative i.e. take extra pictures, bracket exposures on difficult lighting situations, etc.

There is considerable debate over the use of photo calls for the production of theatrical photographs. Images taken during the rehearsals or the actual run of the production have a "life" to them that is difficult to duplicate, especially for young actors. It takes time, and may be expensive if the crews, building staff and actors are paid, but without one the results will be less than satisfactory. If you are currently taking pictures during the run of the production, or during rehearsal, look at them closely. Do they show the actors moving, changed perspective due to telephoto lenses or poor exposures because the lighting is set for the audience, not the camera? I have worked in theatres that, for many reasons, cannot schedule a photo or picture call, but it is the key to high quality photographs

If the picture call is key to good photographs, organization is the key to a good picture call. The director should choose the photographs wants, after which the rest of the production staff should have the opportunity to view the list and add anything necessary for their interests, i.e. costume shots, props, Set & lighting designers, etc. The photographer, after having seen a performance of the production, should go over the list with the director. If there are any additional pictures the photographer feels will enhance the record of the production, be useful for future publicity, or demonstrate the photographer's ability, they should be added. Because the composition of a photograph is quite different from that of an overall stage picture, the photographer can often provide a number of useful photographs that the director would not have chosen. Directors will often choose the same image at different points in the show, usually because there is a different mood or stage picture. If it is not a different photograph, the photographer should point this out; both to save time & film.

Work with the director to determine the order of photographs. In some cases, set changes, makeup, special effects and other criteria may determine the most efficient order.

During the photo call, the director should set up each shot as it would be blocked during the production. At this point, the photographer determines the best camera location, frames the image, etc. He may ask for minor adjustments in the lighting or positions so that the image best captures the original stage picture. Once everything is set, the director should have the actors back up to an appropriate starting point, and run the scene. At the point where the action reaches the frame the photographer set up, he calls "freeze", and takes the picture. If done quickly, the image will capture the life of an active production, yet not show the blurring caused by the movement of the actors. It takes some practice to pull this off, but the result will improve your images. If you have additional photographers such as parents, other students, etc. that insist on taking flash photographs, ask them to wait until your natural light images have been taken. A rough estimate of the time necessary for an experienced photographer & director to shoot a picture call is about 2-3 minutes per pose.

Do not place a limit on the number of pictures you are planning on taking based on the cost of film. Film is the least expensive part of the picture call. Have enough so that you can take as many as necessary. If you bracket your exposures, you will need at least 3 frames per picture, plus spare stock so that you can reshoot mistakes made by you or the actors.

After picture call, have your film processed as soon as possible, since the unprocessed image deteriorates rapidly. When the proof sheets are available, go over them carefully, using the notes you made during the picture call. Be honest with yourself as to the results, and make the additional notes that will help correct problems for the next call. Select the pictures you wish to have enlarged with care. Technical flaws such as camera movement, the actors moving, soft focus, etc. make the picture unusable. It doesn't matter how much you love the picture, accept this, and use another image. Establish a filing system for your proof sheets and slides. There are many systems available, however which ever you choose should allow easy access, and offer protection. We currently keep slides in archival plastic loose-leaf pages that hold 20 each, with the pages filed in file folders label by production & year. Black & white proof sheets are kept much the same way.

Digital Photography

It would be impossible to discuss theatre photography (or any other area of photography for that matter) without

including digital imagery. There is an incredible range of digital cameras available, with costs ranging from a few hundred to many thousands of dollars. Like other digital products, the evolution of digital cameras is unbelievable. What cost \$5000.00 a few years ago can now be duplicated for under \$500.00.

Although it is not possible to directly compare the resolving capability of film to that of a digital camera, it is easier to compare the final product. If you wish to produce an 8" X 10" image that is comparable to a machine made film print, you will require a camera that produces at least an 18MB uncompressed data file. A 35mm slide can produce an acceptable 16" X 20" print - this would require a camera that produced a 72MB file. Digital cameras that can produce data files at either of these resolutions that are under \$10,000.00 are still (as of 2003) a few years away.

Current high-end consumer cameras generally are advertised as 3 - 5 megapixel devices. Depending on the technology used in the camera, the largest (uncompressed) file these cameras will produce will be somewhere between 9MB & 15MB, so, at least at the high end, consumer cameras are getting close. Typical pricing for a consumer 5-6 megapixel camera is around \$1000.00. If you can afford it, professional digital cameras are available from Kodak, Nikon, Canon and others that generally have the same resolution (5-6 megapixels) but are far more rugged, provide true single lens reflex technology, and allow for interchangeable lenses.

A relatively new area is the "semipro" digital camera. Some examples are the Nikon D100, Canon EOS-D10, Sigma SD9 and Fujifilm S2 Pro. For the most part, these are cameras based on single lens reflex bodies the manufacturers already make for film, and modified so that a digital chip can replace the film.

Although the pixel count may not be higher than that of a high end consumer camera, the advantage of interchangeable lenses, and the elimination of many of the focusing and other delays described later in this article may make these a viable alternative to a consumer camera. Although most of these cameras are too new to have developed a track record, they look to be a wonderful marriage of film & digital. Most sell for between \$1500.00 and \$2500.00 without a lens. If you already have a collection of professional lenses for the appropriate camera body, this may be a good way to put a high quality digital system together.

At this point I can comment on one of these - the Nikon D100. Since we have an extensive collection of Nikkor lenses for our film cameras, it made sense to choose either the D100 or the Fuji S2 as our next digital camera. We started shooting with the D100 with the Fall 2002 production of *Midsummer Night's Dream*. A digital camera that fires the shutter without any delay has a tremendous advantage. In addition, we have been able to print excellent 20" X 30" images from files from the camera. Another advantage of the D100 is the ability to produce acceptable images at an ISO setting of 1250, allowing us to produce images under lighting conditions that would be impossible with a consumer camera.

Is it worth it? The current street price of a Nikon D100 is about \$1600.00. Add a fast zoom lens such as the Nikkor 17 - 35mm f:2.8 at about \$1500.00, and you have invested over \$3000.00. Slower lenses may not auto focus (or focus slowly) under poor lighting conditions. Without the lens it is only a bit more than the cost of a high end consumer camera, and will cure most of the problems listed in the section below describing working with consumer cameras. If you already have lenses for film cameras that fit the digital camera, it is probably worth the additional expense.

Be aware that the sensor in these cameras is smaller than the area of 35mm film, so the apparent focal length lenses all become longer (making images larger) than they would on a film camera. Most require you to multiply the focal length by about 1.4 - 1.6 to give an equivalent focal length to a film camera using the same lens.

Another limitation for the SLR digital cameras is dust on the sensor. Because the individual pixels are only a few microns wide, any dust will become part of your image. In a fixed lens camera the manufacturer can seal the space between the lens & sensor so that dust is rarely a problem. In a film camera the dust moves with the film, so it is usually only a problem for one frame. A spot of dust on your sensor will be in every image. Even if

you follow the manufacturer's instructions such as keeping the front of the camera pointed down when changing lenses, if you have an SLR digital camera, sooner or later you will need to clean the surface of the sensor. Most manufacturers suggest a squeeze type blower, and have a specific procedure for locking up the mirror to access the sensor. Canned air sometimes expels propellant, which can damage the sensor. Although some manufacturers allow actual wiping of the sensor, others don't. In any case, you will eventually find dust spots on your image that will require cleaning of the sensor chip. Some will not blow away. Wiping the sensor is a bit unnerving since a scratch will ruin it. Sensor Swabs are available from <http://www.photosol.com/> that can be used if you are comfortable wiping the sensor on your own. If not, the alternative is to return the camera to the manufacturer for cleaning.

Since most of us cannot afford the high-end cameras, lets look at what can be done with a typical mid to high (\$600 - \$1000.00) range consumer digital camera:

The fact that you have less data using a digital camera does not mean it is impossible to produce acceptable prints. The reality is that you rarely make a print from film that uses all the resolution of the slide or negative. For that reason, quite acceptable prints can be made from relatively small data files. We have printed acceptable (which means the viewer cannot tell that the image is from a digital source) 8 1/2" X 11" prints from images taken with our Nikon 995 - a 3.34 megapixel camera. The prints were made on an Epson 1270 printer from raw 9.1MB TIFF (uncompressed) files that were tweaked in Photoshop. After processing, the average file size sent to the printer was about 18MB. Although not always successful, some 13" X 19" prints have been produced using Genuine Fractals to make the final enlargement.

There are many other uses for digital images. There is not much sense using more resolution than necessary for the final product (except, of course, for storing the original image.) For web pages, 72 dpi is generally standard. There are a few file formats that can be used, but jpeg is probably the standard. When saving jpeg images, you are usually given a choice of file size (image compression.) This compression is destructive in that the data removed is gone forever. Heavy compression will make your images move more quickly over the Internet, however the quality of the image will suffer. You will need to choose which direction you wish to go. Some web masters offer multiple resolution images, low as a preview, and high if you want to take the time to download. On our pages, we use two 72 dpi images of each picture, one as a preview and the other as a full size photograph. The preview is 144 x 108 pixels (at 72 dpi this is a 2" wide by 1.5" high image) and link it with a larger 640 x 480 pixel image (about an 8.5" x 6.5" image). I try to keep the preview file size less than 60K, and the large around 150K.

Images for publication depend on the media. Most magazines (and for that matter, ink jet printers) can't use anything over 300 dpi. I use this resolution for all publication images. Newspapers may not need that much, but since they often load the image into an editor and crop & adjust it to fit their printing process, the more data you provide, the better your end product will look. A 300 dpi uncompressed 8" X 10" file will be around 20MB. CDRs are probably the most cost effective way to send a bunch of these files to your publisher since many e-mail systems don't accept files this large.

Most digital cameras are not very sensitive to light. Although ASA/ISO equivalents are not exactly comparable, few cameras produce their stated resolution at much over an ASA/ISO of 100. If the camera allows an increase in ASA/ISO, you always trade resolution or contrast for speed. The film stocks described earlier in this article let you stop your camera down 2 stops, or use faster shutter speeds, and usable film stock is available that can be pushed to ASA/ISO's of 6400. When most digital cameras are set to high ASA/ISO speeds, they produce an image with lower resolution, similar to the effect of increased grain size in faster films. They will also often add noise to the image when using long exposures (over 4-5 seconds). Many manufacturers have added noise elimination processing to their cameras, but using it will often cause the cycle time between shots to increase significantly.

Most digital cameras have two delays built into them. The first happens when you push the shutter button. Depending on the camera, it can be up to a second delay. This may be acceptable for posed photos, but

doesn't work for on-the-fly images. If your camera provides manual operation, you can lessen the delay by shutting off as many automatic steps as possible. For example, for a Nikon 995, the full automatic delay is about 1/2 second, but when everything except focus is run manually, it is less than 1/8 second. Another solution to the same problem is to buy a professional or semipro digital camera such as the Nikon D1x or D100 series, but these range from \$2000.00 - \$5000.00.

The second delay is caused by the time it takes for the camera to write to storage. Most digital cameras have some Random Access Memory (RAM) & either a solid state card, or floppy disk for semi permanent storage. The image goes from the imaging chip to the RAM chip, then to storage. When the RAM is full, you cannot take another picture until it is emptied into storage. Using the Nikon 995 as an example, at the fine resolution (an 8MB 1600 X 1200 JPEG image compressed by the camera to about 1 MB) there is about a 3 second delay before you can take another image. If you immediately take another image, there will be an even longer delay for the next one (about 5 seconds). Although most cameras are faster at lower resolutions, this delay can be a problem. Again, the solution is going to pro cameras, or, at least in the cameras using Compact flash storage, a faster card. Compact flash cards that are 24X speed and more are currently available. Be sure your camera can take advantage of the extra speed before spending additional money for the faster card. Digital cameras are evolving rapidly - each new version solves many of the delay & resolution problems presented by previous generations.

If this seems like a great deal of information to digest, there are web sites dedicated to reviewing digital cameras that allow you to compare features & review specifications and test results. My favorite is:

<http://www.dpreview.com/>

But there are others such as:

<http://www.imaging-resource.com/>

or <http://www.dcresource.com/>.

Although there is no film cost with a digital camera, with exception to software, they cannot be upgraded. To take advantage of increases in resolution or speed, you must buy a new camera. When manufacturers introduce new film, you just pop it in your camera. The manufacturers of digital cameras have been releasing new and much improved cameras every 8 months or so. If you plan to keep up, it will likely be more expensive than a good 35mm camera & film. You will also have additional expenses for batteries & chargers, and additional storage (most cameras come with small storage cards that only hold a few images at high resolutions). You generally will need at least one extra set of rechargeable batteries since they do not last long under continuous use.

Think about how you will permanently store the images. An advantage of slides is that the media can be stored for years, retrieved, and viewed immediately. We currently have all our slides taken since 1962 in a single filing cabinet, and it takes about :30 seconds to find an individual image from any show. There are probably a number of slides we have not touched since they were filed. If you are planning to store digital images, you must become an active archivist. For example, a digital image stored in 1981 would probably be on 8" floppy disks (by the way, a 640 X 480 24-bit image would take 16 disks). Do you currently have an 8" drive you can use to retrieve the image you saved in 1981? Although there are services that will convert your data to modern formats they are expensive.

Another storage possibility is to use the services provided by Internet companies such as PictureTrail.com, Nikonnet.com, Ofoto.com and the like. These sites and many more like them offer to store your images, often at least some of them for free. The catch? Free storage is limited (they will sell you more) and many of the companies have found that they need more income than banner ads provide to stay solvent, causing most to start to charge additional fees. Like many Internet companies, there is also no guarantee that they will be there when you need to download your images. Photopoint.com is an example of a storage company that went under, leaving thousands of users little hope of retrieving their photos. Still, if you do not have your own a computer, or what you have does not provide adequate data storage, you could use Web TV or similar devices to move your images to these sites.

How should you store your images? The only suggestion I have is that whatever media and/or file format you choose will change. Currently, we store our digital images on CDR disks, but, although Kodak, for example, guarantees the media for 100 years, I doubt there will be CD players in 2100. Someone in your organization needs to take the responsibility to continue to move your data to whatever new storage media is developed. With changes in media, file formats and even operating systems, this can be a formidable task.

Although there are services that provide high quality printing, most digital images are printed on locally owned ink jet printers. The paper, ink, relatively slow printing can add considerable cost & time to producing large batches of images. On the other hand, the digital images are ideal for producing quick, one up photos, at least in the 4" X 6"

Another advantage of the digital camera is the ability to distribute your images electronically, either through web pages or via e-mail. Rather than printing 20 - 30 copies of an image, you can mass mail it or build a web page that is available to all. We have often distributed digital images to the news media on CDR media, via e-mail, or posting to a local FTP site.

Although the manufacturing of ink jet printers is getting better, both the ink & paper have more limited life than photographic images. In the worst cases, an image can fade to unusable quality in as little as 2 years. Under the best, they can equal photographic images, but you must use archival paper and ink rather than the printer manufacturer's standard product. Be sure to check the specifications of the printer model, ink & paper to insure they will last as long as you expect.

Overall, I am not opposed to digital cameras, I but don't expect to stop shooting film for many years. We have used 5 different digital cameras over the last 5 years, and are currently using a Nikon D100. I do not recommend using them as the sole camera for production photography for the reasons described above, however I usually shoot digital & film images of each show. We produce a web page specific to each production that chronicles the build & rehearsal of the show.

A link that takes you to the index of our production photographs is at:

http://www.oswego.edu/Acad_Dept/a_and_s/theatre/prodhistimages.html

(Please note that the link is Acad_Dept/a_and_s/ - the underscores do not show up when underlined.) This article is also available at this location. A link to this year's Drama Festival images is at

http://www.oswego.edu/Acad_Dept/a_and_s/theatre/df44.html.

Using the digital camera, we can have updates to the page within minutes of taking the picture. We also send a digital camera out with prop crews to bring back images from stores & antique dealers so that designers can look before we purchase, and for publicity images, particularly when your local newspaper can deal with digital data. For the last few productions, the cast headshots have been taken with the digital camera. We have also used digital cameras to photograph complex prop setups on stage so that crews can refer to them for placement during subsequent performances. Make up designers have used digital images to document the steps necessary to build complicated make up, again so that the crews can review the process & duplicate the designs. They have also used the digital camera & Photoshop to produce outlines of actor's faces in order to produce makeup sketches.

This year we have added a requirement that all theatre students must document their progress through Oswego by maintaining a portfolio. Our digital cameras are used by students to document classwork, things they have done during productions, and internships, etc. All in all, digital cameras provide many advantages to a theatre program, however it will be a few years before they replace film.