ADDING COLOR TO LIGHT
by Bob Kalka. AACT Spotlight, August 2000

One of the more challenging aspects in lighting design is the choice of what color to make the light shining on the stage. Anyone who has ever seen a play where none of the lights had any color probably remembers the show as being visually flat and harsh. With entire books having been written on the subject, this article will in no way be an in-depth course on color selection. What it will be is a broad overview of color filters and how they are used with a few tricks and tips along the way.

A color filter is the material used in front of lighting instruments that alters the state of the light hitting the stage. Over the years, the physical medium used has gone from bottles of colored water, to pieces of silk to gelatin (hence the term gel), to high-tech plastic. Today most "gels" are mad of either polyester or polycarbonate plastic that has been designed to stand up to the high temperatures generated by modern lighting instruments.

CUTTING GELS

The most common form that gel come in is a 20 by 24-inch sheet. (Some colors and brands are also available in rolls if a large quantity is needed.) There are several methods of cutting sheets to the size(s) needed. The most common is to slide the sheet into a color frame of the correct size and cut around it with a sharp instrument. An easier and faster method is to use a very large paper cutter. The problem is that good paper cutters large enough to handle a 20 by 24-inch sheet are fairly expensive. A compromise is to use a knife and a straight edge to cut the sheet into strips and use a common office paper cutter to cut the strips to the final size.

A soon as they have been cut, filters should be labeled with the color number (and brand, if your theatre uses multiple brands) so they can be easily identified. They can be labeled with anything that will write on plastic, from a grease pencil to a paint marker. This allows them to be readily identified for ease of handling.

FRAMING GELS

Before putting the gels in the instruments the color media must be put in gel frames. Gel frames are made of either metal or fiberboard. Metal frames have the advantage of being incredibly sturdy. The disadvantages are that they are bulkier, retain heat longer (a problem if you need to change gels in a recently used instrument), and if dropped from a height can cause serious injury. Fiberboard frames are extremely light and shed heat quickly making them easier and safer to handle. Their main flaw is that the fiberboard, while fireproof, does deteriorate and get brittle with use. Which type to use depends on how and where they are to be used. Gel frames come with several one-eighth inch holes in them. These can be used to help reduce heat degradation. After placing the gel in the frame, insert brass paper fasteners through the holes. This will help keep the filter from warping as it softens from the heat of the instrument. This is a time consuming task and usually only worth the effort for very dark green.

MAINTENANCE

There are two main problems that can occur with gels during the run of a show. Heat degradation can manifest itself as slightly as a warping of the gel or, in extreme cases, holes can actually be melted through the gel. Heat degradation is especially prevalent in dark colored filters as they absorb more energy than the light colors. A longer-term problem is that of fading. As with anything else, color media fades with exposure to light. However, unless it is an extremely long running production, fading is not a cause for concern during the run of a production. Once a production is over the gels should be checked. After removing the gels from the instruments and frames, any that are faded or victims of heat degradation should be discarded. The remaining filters should be filed by number (and manufacturer if necessary) for future use. A good stock of gel not only reduces the gel that needs to be purchased in the future, it gives you a safety net in case of emergencies.

COLORS TO USE

Having gone over some of the physical aspects of using color filters, what about the aesthetic aspects? Remember the first lighting commandment: There must be enough light on stage for the audience to see the performance. Artistry should not even be considered until this goal has been met. So how does one go about picking out which color of gel to use? The rule of thumb is that there are no rules of thumb. There are some general guidelines as to what color will give what effect but dealing with the almost limitless combinations is part of what makes lighting design an art. Most shows begin with a basic McCandles light plot -- two instruments into an area with a 45 degree elevation from opposing 45 degreee angles, a cool color from one side and a warm color from the other. In general, pinks and ambers are warm colors, blues are cool colors, and greens are used for special effects and revenge on actors. Lavendars work well as switch hitters, working as either a cool or a warm color, depending on the color with which it is used.

THE DIFFUSION GEL

An often under-utilized color filter is the diffusion gel. Its primary function is not to alter the color of the light but the "feel" of the light. Diffusion gels will soften the edges of a beam of light by spreading it out, resulting in a softer feel. A major use of diffusion is for cyc lighting. It creates an even field of light and will hide small wrinkles in the fabric. For groups on tight budgets with limited lighting instruments, diffusion can help blend lighting areas on a stage that you are trying to cover with fewer instruments than it needs. The problem is that you cannot isolate an area with a sharp edge. There are numerous types of diffusion ranging from ones that slightly blur the eduge of a light beam to ones that will spread a light out the over twice the original area. Keep in mind, however, that the more you spread the light the less intense it becomes. A particularly useful diffusion filter is one that diffuses the light in only one direction (Rosculus 104 - Tough Silk is a good

example). This would allow you to spread light across the stage without spreading it above the proscenium and into the audience. A personal recommendation is to always keep some of this on hand.

While looking through the diffusion filters at the back of the swatch book (if you do not have a gel swatch book, get one from your theatrical supplier - they are free and invaluable), take note of some of the out of the ordinary gels found in the back. After examining the different degrees of diffusion, do not miss out on the fact that a number of diffusion gels come in colors, which is a boon if you are doing cyc lighting. Also note that color filters come in brown and gray, not your everyday colors but with their own uses. Brown is highly effective in producing the effect of an old sepia tone photograph. Grey is usually referred to as a neutral density filter because it reduces the amount of light without changing the color value. These can be of help in balancing light levels from different lighting instruments where you do not have the luxury of having a dimmer for every circuit. Add a neutral density filter and voila -- less light from an overly ambitious lighting instrument.

TRY THEM OUT

We have covered a miniscule amount of information on color filters. What now? Read books, go to workshops, talk to people, check out other shows and most importantly - imagine it and try it. For a complete listing of Diffusion Filters offered by Rosco, go to http://www.rosco.com