

Rosco Backings in Motion Pictures and Television

Backings have been used in theatrical applications for hundreds of years. If William Shakespeare were to visit a present day motion picture studio he would be bewildered by most of the technologies now in use. The backings, however, he would understand.

The concept is simple – hang a picture outside a set to convince an audience that what they are watching is not taking place on a massive soundstage. The problem is how to do it in a believable manner, to create a flat surface with the illusion of depth, and to have the appearance of the backing change over time the way the real world does. A Rosco backing solves all of these problems, and allows filmmakers to create the illusion that they are somewhere else - another time, another place, another world.

For many years, this was the job of skilled scenic artists, and indeed they are still employed in large numbers in the industry. But the backdrop world is increasingly one of photography and computer image manipulation. One hundred years ago, all backings were hand painted. Fifty years ago, large scale photographic techniques gained acceptance. In the mid 1980s Rosco pioneered the production of backings using large format computer printing. Today, most backings are computer-printed. And tomorrow? Well, we're still working on that, but rest assured, when it arrives, it's going to be *amazing*.

Use

Why use backings, rather than simply shooting everything on location? The answer, as to so many questions in Hollywood, is control. Control over the lighting conditions, the time of day, the weather. The ability to do thirty takes of a scene against a perfect sunset, and still have the option of coming back after seeing the dailies for twenty more.

So instead of shooting everything on location, which requires permits, crowd and traffic control, and the ability to squeeze huge grip trucks onto a residential street without annoying the neighbors, a compromise is reached. Shoot the exterior shots on location in the shortest possible time, but come back to stage for the interiors.

Which is where the backing becomes critical - the backing brings the location onto the stage. Ideally, every production would use custom backings shot at the exterior location to provide perfect visual continuity between the exterior and interior shots. In practice however, rental backings of generic locations are often used to achieve the same general effect, but at a greatly reduced price.

Backing Types

There are three main types of backing available for purchase or rental, which are differentiated by the methods used for production.

Hand painted backings are produced on large pieces of canvas by scenic artists using a combination of brush and spray techniques. They are not intended to be a perfect reproduction of an image, but rather to look good on camera. Hand-paints tend to be extremely economical and effective for scenes such as skies or vegetation, but less so when large detailed architectural scenes, such as cityscapes, are required. Hand painted drops are usually frontlit, but are often back-painted to allow for back lighting to create a night scene. Older hand painted rental drops have been known to become brittle and suffer from flaking paint.

Photographic backings, often referred to as “translights” are printed by means of optical enlargers onto nine mil polyester coated with photographic emulsion. This produces an image which is extremely crisp and photo-realistic. They feature a white backing/diffusion layer, are usually designed to be backlit, and can generally only show one lighting condition, either day or night. Photo backings tend to be delicate and thus difficult to handle.

Digital backings combine features from both photographic and hand painted backings. They can be made in frontlight, backlight, or the extremely popular day/night format, and are usually printed on polyester-reinforced vinyl. Digital drops can be produced in a variety of resolutions, the majority falling in the range 30 to 300 dpi. Rosco have been the industry leader in digital backings for over twenty years.

Considerable care should be taken in selecting the right company to print digital day/night backings, as smaller, less technically proficient manufacturers often suffer problems of front-to-back registration and back paint density. Some companies remedy this by combining a computer-painted front image with hand-painted back image (as Rosco used to in the 1980s), but the resultant night images generally lack the subtlety of a true day/night.

Design

Designing the perfect backing for a set requires a blend of both art and mathematics – the art makes a drop look good, but it is the mathematics that will make it look *right*. Horizon lines, angles of coverage, and overall scale all work

together to maintain the illusion of the outside world. Rest assured, Rosco are there to help at every stage of the process.

And as a final check? Low resolution digital files can be used to create a quick rough layout that can be inserted in a model of the stage set. This is invaluable for simulating the appearance of the finished drop prior to production.

Custom Backings

To produce a custom backing, the first step is to capture an image of the location. While this seems simple enough, it is probably the point in the process where the most damaging errors can occur. For this reason, all major backing companies keep one or more photographers on staff, who can offer advice during the shoot based upon their many years of experience.

The process is usually referred to as shooting a plate, which harkens back to the days when all backings were shot in 8" x 10" format. Since 1997 Rosco have primarily used 6x17cm medium format cameras shooting on 220 roll film. Digital photography is becoming increasingly popular, but film still holds a slight edge in resolution and gray-scale. When that situation changes, Rosco are ready change with it.

Rule One in backdrop photography is simple. Always shoot more of the scene than you can possibly need, even if it means that you are shooting 360 degrees around and up to 90 degrees high. The needs of the production may change, and you must be prepared.

To ensure that enough image is captured, it is important to know the scale of the backing. There are two ways to calculate scale, one involving the ratio between distances on location and equivalent distances on set, and the other using the angles present at both places. It is usually a good idea to make both calculations as a form of self-checking. The placement of the horizon line within the image is also critical, and must take into account camera heights, platform heights, and any visual vanishing points present in the image.

The time of day that the plate is shot is also significant. Again, the wise photographer will shoot a variety of lighting conditions in order to give the production the greatest number of choices possible. This may include shooting night plates both using the ambient light present at the location, and also using a lighting package often provided by the Cinematographer. Sometimes the perfect image for the backing will be the prettiest picture captured, but at other times it may be the most bland and nondescript, because that's the image with the least number of visual cues that lock it into a single time of day. Often a romantic comedy will call for a bright sunny image, where a more moody piece would require a backing that is more grey and somber.

As an alternative to the expense of a custom shoot, if a suitable image can be found within Rosco's rental catalog, most can be reproduced to match new specifications of size, shape, and overall appearance. Rosco also have an extensive library of images offering previously unprinted shots from around the world, including a substantial selection from Europe.

Rental Backings

While a custom backing perfectly designed to match the location may sound like every Art Director's dream, the practicalities of production mean that in some circumstances a rental backing is advantageous. This may be for a variety of reasons.

Price is the most obvious factor. A one week rental of a drop typically costs one tenth the price of a new custom item. Given that rentals tend to decrease in price over long periods, it may take as much as two years before the custom drop becomes a practical cost consideration.

Some sets do not require a custom backing to make them work. If all that is seen are a few leaves vaguely visible through net curtains, pretty much anything will do. Even in situations where more of the image can be seen, there may be a rental that is close enough to the look of the location to work convincingly.

Finally, some sets can use almost any backing, because the exterior of the location is never seen on camera or otherwise directly established. Rosco's ever-expanding catalog of rental backings, featuring a keyword-based search engine, can be viewed online at www.rosco.digital.com. A CD catalog is also available from your local Rosco office.

Installation

Most backings are supplied fitted with grommets (eyelets) around the perimeter, by which they can be attached to a frame, pipe, sailboats, or movable track.

Optimal placement is usually 4-5 meters (13-16 feet) outside of the wall, window, or door of the set. Front lighting is best provided from above at a high angle to prevent the possibility of creating a direct bounce path reflecting a hot spot into the camera. Backlighting is usually in the form of skypanes placed directly behind the image at a distance of approximately 2.5 meters (8 feet). Digital backings tend to be more forgiving in the backlit condition than photo backings, being more diffusive and thus less prone to hotspots.

Adding Life to the scene

While the purpose of a backing is, by definition, to remain in the background of a scene, there is always a danger that the static nature of a printed image can make it look unrealistic. To combat this, a variety of tricks and techniques can be employed by the Cinematographer or Art Director.

Small lamps, strategically placed, can greatly enhance a night scene. Tiny blinking LEDs can be attached to or through a backing to create the look of anti-collision lights on tall buildings or radio antennas. Gently pulsing lights behind a drop create the illusion of atmospheric distortion on a panorama of city lights.

Sunrises and sunsets can be projected upon a backing, as can a moon in various phases. Moving lights can also be projected on the front or rear of a backing to create the impression of waves on water, leaves gently blowing in the breeze, or even rain or snow in the sky.

Even after the scene is in the can, digital effects can be used to add life to the backing. Digital smoke plumes or birds flying past a window go a long way towards selling the illusion.

Rosco Laboratories

Rosco Laboratories have been providing lighting and scenic products to the entertainment industry since 1910. They have major offices on four continents, combined with numerous satellite offices and a dealer network that spans the globe.

Rosco have been producing digital backings for motion picture and television use for over twenty years. Rosco developed the day/night digital backdrop, for which we were honored by the Academy of Motion Picture Arts and Sciences in January 2001 (<http://www.oscars.org/scitech/2000/winners.html>), and by the Academy of Television Arts and Sciences at the 2004 Primetime Emmy Awards.

Rosco's rental catalog contains hundreds of backings, with more being added weekly, ready to be shipped to productions anywhere in the world. In addition, Rosco's image library numbers in the thousands, ready to be manipulated, cropped, and then printed on demand.

Overall, the Rosco team provides an unrivalled in-house depth of talent, not just in the field of digital backings, but also in scenic painting, photography, lighting design, and cinematography.