The Cinema Lab

Shooting 16mm for 35mm Blowup

Grain and Definition

Shooting 16mm for blowup to 35mm requires preparation and planning. Cameras, lenses and magazines should be thoroughly checked and tested. 16mm for blowup to 35mm is more critical than 16mm for 16mm prints.

The difference in picture quality between 35mm films shot in 16mm negative and those shot in 35mm negative is due primarily to differences in graininess. The 16mm frame , blown up to 35mm, is enlarged approximately 3 to 4 times its original size, greatly exaggerating grain size. To maintain the finest grain structure in 16mm color negative, proper exposure and normal processing is mandatory to insure its maximum latitude and detail, with minimum grain in the shadow area of the blowup. When in doubt, if light is available, it is advisable to lean to overexposure. In fact, contrary to what occurs in black and white negative, where density is created by a buildup of grain, color negative has less grain in areas of higher density. A slightly overexposed color negative of approximately a third of a stop would tend to produce a blowup with the least amount of grain.

Flashing and toning should be avoided. These procedures increase grain, especially in the areas of no exposure

An underexposed negative shows more grain than a properly exposed negative. This grain is most apparent in weak shadow areas.

Force processing increases graininess to the extent of the forcing. 16mm color negative has considerable latitude and it is recommended that scenes that are underexposed up to one stop be processed normal. This underexposure has a lesser effect on the grain size in the negative than force processing.

There are a number of psychological factors which affect the viewer's awareness of grain. When the picture is not sharp, the eye, struggling to focus the image, tends to focus on the grain, making it much more apparent. Definition is also a function of contrast. Low contrast pictures tend to be less sharp and, therefore, appear more grainy. High contrast limits the detail in the highlights and shadows. If possible, it is advisable to have a black reference and a white reference in a scene. These reference points can be quite small. The eye, looking at a picture, searches for these reference points and, if there are none, tends to focus on the grain.

Special effects which require the blowup negative to be more than two generations away from the 16mm original should be avoided. The buildup in grain and loss in picture quality due to additional generations is generally undesirable.

Contact The Cinema Lab for more information about blowups, 303-783-1020.