

lenses are larger, therefore, a zoom camera is less compact and requires a larger carrying case. Although "zooms" can be done with a hand-held camera, a tripod is recommended for steadiness. Zooming in and out provides an ideal method for following a moving subject, an iceskater, a seagull or a baby walking. With static subjects, however, a "zoom in" or "zoom out" is rarely effective and is a poor substitute for a sequence of individual shots. Zooms, like all other special effects used in a film must be as inconspicuous as possible. The overuse of zoom effects makes viewing monotonous and irritating to the audience. Inconspicuous zooms require that focal length be changed slowly. This tends to slow down the pace of the picture, and uses up a great deal of film. The major reason for ineffective zooms is because nothing changes but the area covered. The subject is seen from the same angle from the beginning to the end of the zoom, and the close-up does not reveal more than seeing the subject bigger and closer. The other approach, filming the subject with several shots, offers the advantage of changing the size and the angle of view of the subject. The individual shots can be obtained in different ways: 1. By filming the three scenes with wide angle, standard and telephoto lens; 2. By filming each scene with the same lens but varying the distance between camera and subject; 3. By using a zoom lens set in the wide angle position for the long shots, at an intermediate focal length for the medium shots and in the telephoto position for the close-ups.

Regardless of which method is used, it is important to use a different shooting angle for each scene, otherwise the sequence has a "jumpy" feeling.

Modern zoom lenses still do not offer the variety of focal lengths available with regular lenses. None will cover a field equal to that of the 5.5mm wide angle lens (48°) for 8mm cameras or 10mm lens for 16mm (55°). Film makers acquainted with these lenses would miss their tremendous covering power. The same holds true for a wild-life photographer who could hardly be satisfied with the maximum focal length of a zoom lens, and would prefer a 150mm lens for his 16mm camera or a 75mm for 8mm. The line of Bolex 16mm lenses extends from 10mm to 150mm or a range of 15:1 (compared with 5:1 for the longest zoom lens).



Another limitation of zoom lenses is their speed. Although a $f/1.9$ aperture is relatively fast, it does not compare in speed to the Switar 13mm $f/0.9$ for 8mm and the Cinor 25mm $f/0.95$ for 16mm cameras.

One might feel that large aperture lenses become less important because the sensitivity of color and black and white films is constantly being improved. The 8mm filmer now has at his disposal color films with a sensitivity of 40 ASA or black and white emulsions up to 400 ASA. In 16mm, black and white films with an ASA rating of about 400 are in general use while color films are available up to an ASA rating of 160, and a 16mm color film soon to be released is rated at ASA 500.

These new supersensitive films have unquestionably created many new picture possibilities without use of extremely large aperture lenses. Yet because these more sensitive films are available today, high speed lenses are more important than ever.

With "old slow" films, no one thought of taking pictures of people at night in a lighted street, because it was known that it could not be done. With "old slow" films, it was assumed that indoor movies must be taken with special lighting, and no filmmaker ever thought of "available light filming." The special photographic lights—photofloods in reflectors, barlights, studio lights—provided ample illumination for filming at $f/2.8$ or even $f/4$; therefore, fast lenses were not necessary. Today, available light filming, is a common practice. This technique can give striking, exciting results because with candid shots, the static, hot atmosphere of a studio is removed. New Kodachrome II, ASA 40, is not really a high speed emulsion, yet available light picture possibilities can be covered with a $f/0.9$ lens. With this combination, one can film with common light sources. These can provide natural and professional lighting effects as compared with the flat, horrible and amateurish lighting from barlights.

Since 16mm filmmakers have color emulsions with ASA ratings above 100, subjects can be filmed at about $f/1.4$. A Cinor $f/0.95$ is not absolutely necessary if one does not consider image quality, for the resolution of high speed films is inferior and their grain structure, less satisfactory. The 16mm filmmaker can use a slower lens with a highly sensitive emulsion, or a Cinor $f/0.95$ with a slower but "sharper" film. Both combinations offer the same picture possibilities, but the latter provides pictures with better definition.

Although regular room lights are not "color corrected" for photographic purposes, the results are satisfactory and a correction filter is not necessary. Color filming with fluorescent lights can also be satisfactory with the use of various gelatin filters, although acceptable results are obtained under daylight fluorescent tubes, by using daylight color film without a filter. Since available light subjects frequently consist of dark and light areas, a close-up reading with a lightmeter or a automatic camera of the lighted main subject is advisable because this is the area that should be properly exposed.

"Available light" night filming in color or black and white is no problem with a Switar $f/0.9$ lens.