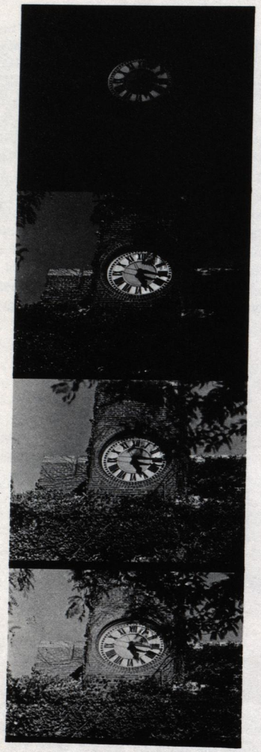
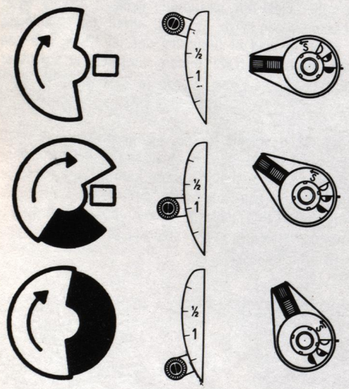
MOVIE MAKING TECHNIQUES





FADES AND DISSOLVES Fades and lap dissolves are important transitions in a motion picture. A fade-in is a gradual change from complete black to a properly exposed scene and is the professional's way to start the first scene in a film. A fade-out is the gradual darkening of a scene and is the proper method of ending a film. Within a motion picture, a fade-out and fade-in can follow each other and be used to bridge two unrelated sequences. Perfect fades can be produced on the original film only by means of a variable shutter which can be opened or closed gradually while filming.

The length of a good fade is about two seconds.

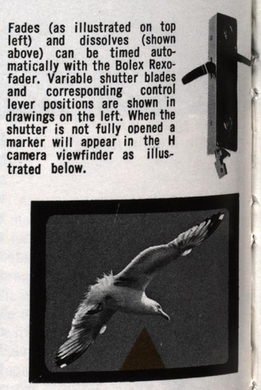
A lap dissolve is a fade-in superimposed over a fade-out. The effect is a gradual change from one scene to the next without a black-out in between. A lap dissolve is the ideal and cinematographically the most effective transition to create the feeling of elapsed time. A lap dissolve is used between sequences that take place in different locations or at different times. It should never be used between scenes related to each other such as a long shot and close-up of the same subject. Cameras equipped with film rewind in addition to variable shutter permit making lap dissolves of professional quality on the original film. To produce a dissolve the first scene is faded out with the variable shutter, the film is rewound to the beginning of the fade-out (with the variable shutter closed) and the next scene faded in for the same length of time. The correct amount of film to be rewound is determined by the audible or visible frame counter built into the camera.

A variable shutter has other applications. When rewinding the film for double exposures, lap dissolves, split frame scenes, superimposed titles, a light trap is needed to prevent light from reaching the film. Normally one would use a lenscap. It is more practical, convenient and quicker to close the variable shutter than to hunt for the elusive lenscap which is also known to get lost.

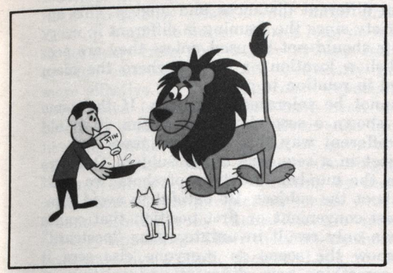
A variable shutter can be partially closed to reduce exposure. This is especially valuable when using the more sensitive films in bright light where ordinarily a neutral density filter would have to be used. Closing the variable shutter to ½ open reduces the exposure for the same amount as closing the lens diaphragm from f/16 to f/22 (which on some lenses is not possible). This possibility of shooting at larger f openings without overexposing the film has the additional advantage of providing a brighter image in a reflex finder, where the beam-splitting prism is located behind the lens diaphragm (Bolex H system).

By closing the variable shutter to ½ open and opening the lens diaphragm by one stop, the depth of field is reduced slightly, a control which can make backgrounds somewhat less distracting, or which can come in handy when using the matte box for special effects.

A smaller shutter opening means a shorter exposure time and, therefore, less blur in moving subjects. This is advantageous when individual frames are to be projected or enlarged or when films are to be evaluated at 5 fps slow motion speed. At the normal projection rate of 18 or 24 fps, blur in a moving subject is not objectionable and shortening the exposure time by closing the variable shutter is, therefore, neither necessary nor recommended. ■



Fades (as illustrated on top left) and dissolves (shown above) can be timed automatically with the Bolex Rexofader. Variable shutter blades and corresponding control lever positions are shown in drawings on the left. When the shutter is not fully opened a marker will appear in the H camera viewfinder as illustrated below.



ANIMATION Animation includes anything where subjects that are ordinarily not moving are brought to life by a special motion picture technique. The best known examples are drawings which are made into moving cartoons. Full length theatrical motion pictures have been made with this technique. Puppets can be animated the same way.

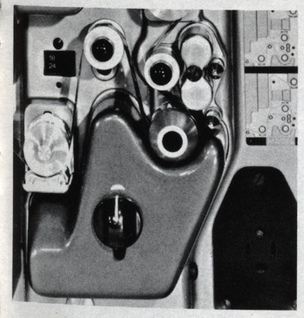
Animation, furthermore, includes simple effects like a line drawing itself, a title writing itself, a toy plane moving over a map to indicate a route of travel or any other subject, a shoe, a book, titling letters moving mysteriously by themselves within the scene.

Regardless of the application, the technique is the same. Instead of running the motion picture camera continuously at 18 or 24 fps, the built-in single frame device is used. One frame only is filmed at a time, but in between each frame the subject is moved into a slightly different position, a line is drawn a little further. In a cartoon, the drawings are made on acetate titling cells each cell having the subject in a somewhat different position. The cells are changed in between frames. The number of single frames to be exposed can vary depending on the desired length of scene. ■

TIME LAPSE Time lapse photography is one of the most valuable motion picture techniques developed. It permits studying movements which are too slow to be seen by the naked eye. Actions which require hours or days to occur can be filmed with this technique and then shown within a period of seconds or minutes at a time that is convenient for study. Applications include the study of growth of plants, opening of flowers, germination of seeds, microscopic examinations of cell growth and behavior of microorganism, memomotion studies to evaluate the movement of workers and machines, studying traffic patterns, or the natural phenomena such as tides, solar and lunar eclipses, sunsets and sunrises, the movement of clouds.

Time lapse sequences are obtained by shooting single frames at regular and perfectly timed intervals. This can be done manually by using a cable release or by attaching a time lapse unit to the camera which trips the release automatically at pre-set intervals. The camera must be rigidly mounted to avoid vibrations or camera movement between frames.

The time interval is based either on the desired projection time or on the length of action that is to be recorded. For instance, we might know that a flower will open between 10 am and 2 pm. On the screen, the action should take ten seconds or 240 frames when projected at 24 fps ($10 \times 24 = 240$). These 240 frames must be exposed within the four hours or 240 minutes. That means we must expose one frame every minute. ■



SOUND Sound can be added to 8mm and 16mm films. In 16mm, the sound can be recorded optically or magnetically. An optical sound track is photographed on the edge of single perforated film and must be recorded before the film is developed. A magnetic track is recorded on iron oxide which is striped on the edge of the film. On 8mm only magnetic sound is possible at the present time.

In most films, the sound track is recorded after the film is completely edited since this permits greatest versatility, complete freedom in the choice of sound and best sound quality without disturbing background noises. Phonograph records or pre-recorded tapes can be used for the background music and sound effects. While optical sound tracks are usually produced in regular sound recording studios, any movie maker can add his own magnetic sound track with a magnetic sound projector. The recording is basically made in the same fashion as with a tape recorder. Music, narration and sound effects can be combined by connecting the various sound channels to the projector with the built-in mixer. With some machines, such as the Bolex S-221 shown, sound effects and narration can be added over the previously recorded music. This makes recording much easier and permits all types of professional touches such as fading and dissolving one track into another. A 16mm magnetic soundtrack can be transferred to optical if desired.

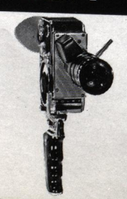
It is recommended to shoot at 24 fps when sound is to be added to 8 and 16mm films since this higher speed will provide better sound quality. ■

8 mm

BOLEX AUTOMATIC ZOOM REFLEX K-1

BOLEX ZOOM REFLEX P-1

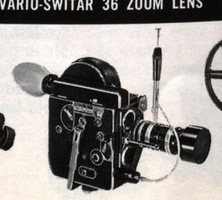
BOLEX ZOOM REFLEX P-2



H-8 SYSTEM

H-8 REX

BOLEX H-8 REX WITH VARIO-SWITAR 36 ZOOM LENS

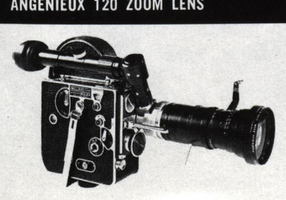


BOLEX 18-5 8mm PROJECTOR

H-16 SYSTEM

H-16 REX-2

BOLEX H-16T WITH ANGENIEUX 120 ZOOM LENS



BOLEX H-16M WITH PAN CINOR 85 ZOOM LENS

BOLEX S221 OPTICAL/MAGNETIC SOUND PROJECTOR