

TECH NEWS

by Rodger J. Ross

WHAT'S SO SPECIAL ABOUT SUPER-8?

Super-8 film has been around quite a while, but there still seems to be a good deal of uncertainty as to what to do with it. At first, Super-8 was supposed to give us low-cost distribution of existing or specially made film productions. In response to the enthusiastic acceptance of the Super-8 format by amateur movie makers, camera manufacturers put on the market a range of highly sophisticated equipment that made many 16mm professionals quite envious. We are now in the midst of a concerted drive to develop a professional Super-8 production system, but filmmakers have yet to learn how to utilize the medium most effectively. Super-8 is in fact a *new* medium of communication – not just a scaled-down version of the 16mm format.

In 1923 Eastman Kodak Co. introduced the 8mm format by slitting double-perforated 16mm down the middle, to give amateurs a less expensive movie making medium. This not only reduced the width by a half, but also allowed twice as many frames to be exposed in each foot of film. However, as Fig. 1 shows, so much of

the width was taken up by the perforations and the space between the perforations and the film edge that very little was left over for the picture frames. The small size of the images coupled with the limiting characteristics of pre-war film materials and equipment gave at best only marginal picture projection quality and discouraged widespread acceptance of the 8mm medium.

In response to insistent demands for improvement, so as to take advantage of what appeared to be a very large potential market in schools and the home, a number of schemes for modification of the 8mm format were put forward in the early 1960's. One of these, from the Eastman Kodak Co., proposed that the perforations should be reduced in size and moved closer to the film edge, to give a 50% increase in the picture frame area. This proposal was enthusiastically received in the industry and almost at once manufacturers set to work producing cameras and projectors for the new format, as shown in Fig. 2, and aptly dubbed by someone "Super-8".

Industry experts predicted that extensive markets could be developed for low cost Super-8 prints, mass-produced from 35mm or 16mm originals. There were great expectations that Super-8 films would be sold in stores like audio records or discs. Some warned, however, that successful exploitation depended on the availability of semi-automatic projectors with simplified cartridge loading. When these markets failed to materialize, critics pointed to the lack of agreement on a universally interchangeable cartridge design.

Super-8 Camera Developments

In sharp contrast to the confused projector situation there was almost immediate acceptance of a proposal for a standard 50-foot Super-8 camera cartridge, shown in Fig. 3. Manufacturers designed cameras around the cartridge, as the basic element in the new format. When a cartridge is inserted in the camera, notches in the

leading edge set the automatic exposure control mechanism for the speed of the film in the cartridge. Small dry batteries drive the film advancing mechanism, and on cameras so equipped, the zoom lens as well. Most cameras have a large, bright, upright viewfinder, with a scale superimposed showing the f/number at which the lens is set by the automatic mechanism.

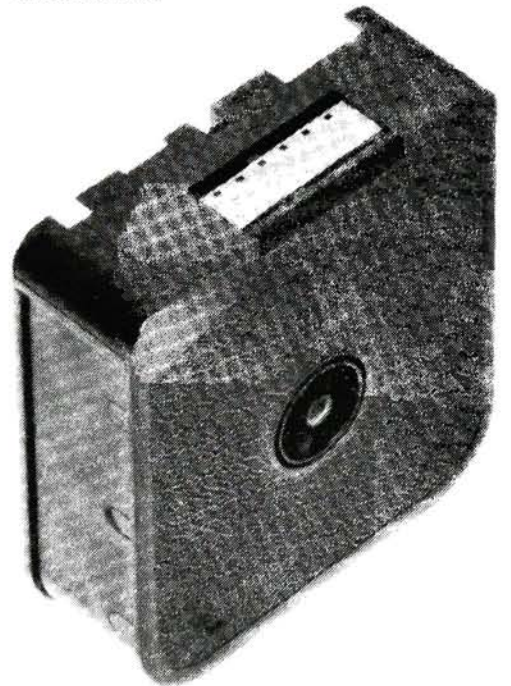


figure 3

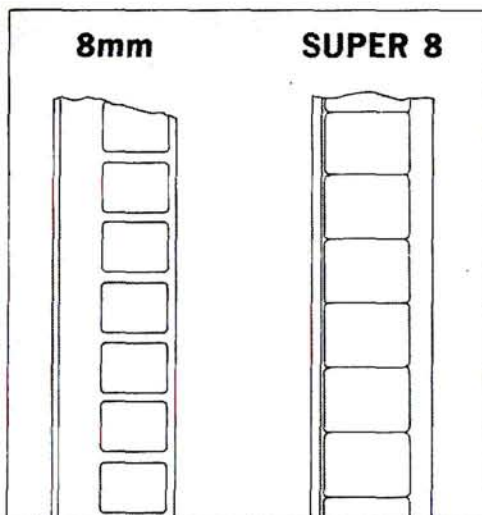


figure 1

figure 2

*Long time Supervisor of Technical Film Operations at the programming centre of the CBC, Mr. Ross is the author of two books, **Television Film Engineering and Color Film for Color Television** and has just won the Agfa-Gevaert Gold Medal, awarded by the Society of Motion Picture and Television Engineers.*

cameras. Not surprisingly, the work being done by amateurs with Super-8 cameras has attracted a great deal of attention, particularly in professional 16mm circles, and there have been increasing demands for a range of equipment and facilities needed to undertake full scale motion picture production with the Super-8 medium.

A serious handicap for the professional has been the lack of synchronous sound recording facilities. Amateur movie makers, for the most part, have been satisfied with silent pictures; the more aggressive had a magnetic stripe applied to the edited films to record sound over the pictures. Some cameras were supplied with an attachment putting out electrical pulses that could be carried to a separate ¼-in. tape recorder by a cable, so as to allow synchronous picture and sound recordings to be made. At the Massachusetts Institute of Technology, Prof. Richard Leacock developed crystal-controlled double-system equipment that eliminated the cable between camera and recorder. Then in 1974 Eastman Kodak Co. announced that Super-8 camera films with magnetic stripe would be available in 50-ft. cartridges. Already several manufacturers are producing single-system cameras to take advantage of this very important breakthrough. Now the Super-8 filmmaker can choose from a wide range of silent cameras, or a single-system camera using striped film for the sound, or separate picture and sound recording with the sound recorded synchronously on ¼-in. tape. Available also is a great variety of editing equipment including multiple track flat bed Super-8 editing tables.

For the amateur, Super-8 Kodachrome film offers the advantage that the cartridges can be returned to the manufacturer for processing, simply by dropping the exposed film in the nearest postoffice box. Kodachrome is a reversal material that gives colour pictures of excellent quality. Also available in 50-ft. cartridges are the Ektachrome films that can be processed by commercial motion picture laboratories, thus saving the time needed for shipping the film to the manufacturer for processing. For still greater convenience, the Eastman Kodak Co. has developed and put on the market a small Super-8 processing machine, completely automatic in operation and designed for use in an office environment. This machine, the Kodak Supermatic-8 processor, with a dry-to-dry time of only 13 minutes, gives

the Super-8 filmmaker almost immediate access to the pictures and sound from a camera.

Learning to Use the Super-8 Medium

Here we come to a parting of the ways with conventional 16mm or 35mm production practices. The normal course to take would be to make film prints from the edited originals, and use these for projection and distribution while the originals are retained in a safe place. Making prints from Super-8 originals is rather difficult, and some degradation of picture quality cannot be avoided. Besides, there is the cost of printing to be considered, especially when optical effects are needed. A more promising course to take is to transfer the edited originals to video tape with relatively inexpensive helical scan equipment, and one of the popular videocassette formats. There are now several ways to make the transfers. The simplest method is to utilize the Kodak Supermatic Film Videoplayer, a low cost semi-automatic device that gives a standard colour video output from Super-8 films recorded at either 18 or 24 frames/sec. Better picture

quality can be obtained by projecting the films on a translucent screen and picking up the images with a television studio camera.

Taking the electronic transfer route, all of the effects normally available in the television studio control room can be incorporated in the videotape recordings. Once a transfer to videotape has been made the tape can be played back into television picture monitors or receivers for viewing, by a simple video patching procedure.

For a long time, some filmmakers have been making derogatory remarks about television's small picture display. This attitude can be readily understood and appreciated by anyone who has been involved in producing the overwhelming wide-screen picture and sound presentations in theatres. But television displays have their merits too – although on an entirely different scale. If we can begin to think of television as an intimate medium for small numbers of viewers, an entirely different presentation approach can be taken. And here Super-8 really comes into its own, because it is not suitable or appropriate for producing large screen displays. Super-8 is at its best as an intimate communications medium, starting with the camera, and the man behind the camera with the ideas. □

EQUIPMENT NEWS



5.7mm f/1.8 Super Wide Angle Lens in Arri Mount.

A new 5.7mm f/1.8 super wide angle lens for Arriflex 16 has been developed by Century Precision Cine/Optics of North Hollywood. It is now available for Eclair and CP-16R

bayonet mount cameras. The lens is only 2 ins. in diameter, the smallest ever achieved for a lens of this type, and it weighs only 7 ounces. The angle of view is 100 deg. and optical resolution is 260 lines/mm. Price is \$575.00. For further information write the manufacturer at 10661 Burbank Ave., North Hollywood, C.A.

New Tyler Camera Mount

Tyler Helicopter Camera Systems now has available its new vibrationless 35mm B-2 Middle Mount, equipped with Arriflex 11C and Angenieux 25:250mm zoom lens.

This mount, which can be used in copters, airplanes, boats and other moving vehicles, features new control handles with contour grips and plug in modular electronics which control camera, variable speed focus and super smooth variable speed zoom.

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