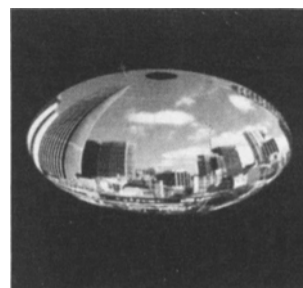
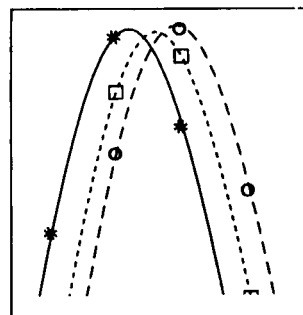


Highlights

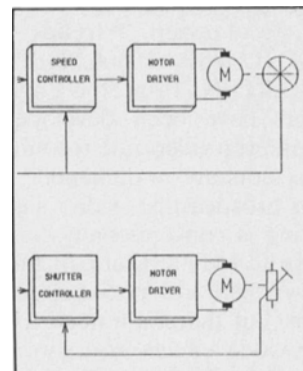
- 860 A Programmable Real-Time Video Signal-Processing System • N. Yagi, K. Fukui, K. Enami, R. Yajima, N. Sasaki, K. Hoshino, K. Harukawa, and M. Kogure** • A real-time video signal-processing system (the Picot system) has been developed that is composed of several hundred processors. It can handle a number of color time-varying images and includes such image-processing functions as edge detection, geometrical transformation, and video synthesis at video rate. Two large-scale integrations (LSIs) made with CMOS gate-array technology were also developed to make the system compact. A practical system that can be used as a video switcher is already in use in the video production center of NHK (Japan Broadcasting Corp.), and its effectiveness has been confirmed.



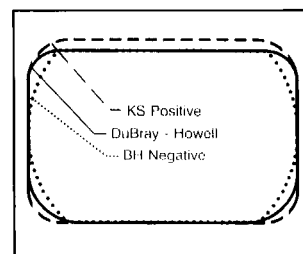
- 869 Sampling-Rate Conversion of Video Signals • A. Luthra and G. Rajan** • Encoding analog component video to a composite signal is an established practice. Improvements are constantly being made in encoding techniques, with the result that the quality of the encoded video is closer to that of the component source. Encoding digital components to digital composite signals involves an additional step besides coding: the sampling-rate conversion. This task of sampling-rate conversion further complicates the issues related to the quality of the output video. It introduces a new class of distortions, called linear time varying distortions, in the output signal. This article explores the techniques necessary to convert between digital signals with different sampling rates and presents a qualitative comparison of the two approaches, analog and digital, to the sampling-rate conversion.



- 880 Electronics in the New Generation of Arriflex Cameras • H.-D. Jacoby and A. Nguyen-Nhu** • The trend towards increased integration of electronic functions can be observed in almost every technical device. The same holds true for motion-picture cameras where, in the past, performance was determined solely by high-precision optical and mechanical components. The application of advanced electronics to camera design has led to improved performance and new possibilities for the cinematographer, as exemplified by the newly developed Arriflex 535 camera. This camera incorporates an electronically variable mirror shutter, which can be controlled while filming, as well as a speed-control system of unprecedented flexibility. The benefits of the electronic system are especially apparent in the design of the operational concept, which integrates a wide range of new features into a compact camera including control, display, programming and service-support functions.



- 884 Improved-Strength Eastman 35mm Motion-Picture BH Perforations • P. E. Pylipow** • Because of its fundamental shape, the 35mm BH film perforation has historically had a weakness for tearing at the corners. Recognition of this problem, through literature and consumer contact, led to the development by Eastman Kodak Co. of a modified perforation with .005-in. corner radii. Laboratory and field testing confirmed the rounded corners resulted in improved strength with no detrimental effects. Routine production has now begun, and modifications to the standards literature are in progress through the appropriate SMPTE and ISO committees.



- 886 Motion Picture Film Perforation • SMPTE Classic Reprint, Originally Published 1916 • D. J. Bell** • My reference to cine-machinery is intended to broadly cover all machinery used for the manufacture, assembling and projection of motion pictures, and I shall endeavor to briefly present my conclusions in reference to standardization of perforations of motion picture film. For many years it has been my belief that there should be a concerted effort to bring about a meeting of designers and manufacturers of cinema apparatus so that this very important matter could be discussed by those who appreciate the far-reaching benefits that standardization will bring to the motion-picture industry.

With perforation, sprocket, dividing line and other standards effected, then within a reasonable time the manufacturers of projecting apparatus may conform their means of control to closely fit the standardized perforations, and I am sure the whole industry will profit to an almost unbelievable extent. Most certainly strong tension to effect registration may be eliminated and this will insure against damage of film and perfect projection may be obtained.