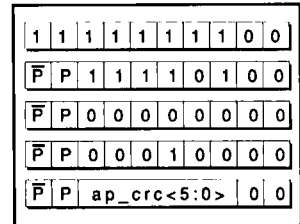
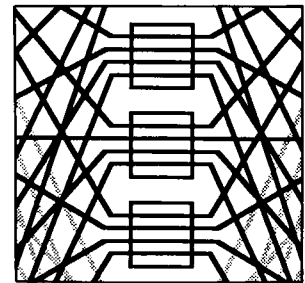


# Highlights

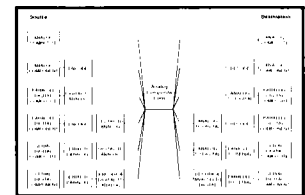
- 940 Proposal for Error Detection and Handling in Digital Studio Equipment • B. Elkind and D. Fibush •** By its nature, digital video equipment has greater potential than analog equipment for “minor” failures that result in signal distortions that are visually obnoxious. Analog equipment is more likely to fail gracefully and subtly when it malfunctions. On the other hand, digital equipment has a potential for self-testing, verification, monitoring, and remote diagnosis that is not possible with analog equipment. A proposal for exploiting this potential for error detection, self-diagnosis, and complete system monitoring in digital equipment is described.



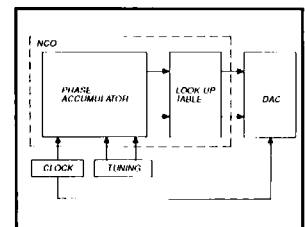
- 946 Multistage Distribution Switching Systems: Clos and Beyond • M. S. Walker •** The average size of distribution switchers in television facilities is growing larger each year. In 1953, Charles Clos published a landmark technical paper concerning nonblocking multistage switching techniques, explaining how to reduce the number of crosspoints when compared to a standard switcher. Since that time, multistage switching systems have been proposed and used by several companies in the television industry. This article discusses the basic principles of multistage switching and the problem of blocking in television systems. It explains the causes of blockage, shows statistical results demonstrating the amount that may occur, and discusses ways to deal with these issues.



- 955 Design Considerations for Digital Television Studios: The Transition Phase • M. M. Guess •** As the television industry shifts to fully digital systems, many new challenges, dilemmas, and possibilities will emerge. Several interesting issues have already been identified in the engineering laboratories of The Grass Valley Group. These considerations include integrating hybrid analog and digital systems, timing digital systems, and dealing with digital audio. This article will discuss these issues and their effects.



- 961 HDTV and NTSC Transmission Using Direct Digital Synthesis • R. J. Zavrel, Jr. •** The technique of direct digital synthesis (DDS) is now available to the commercial marketplace. The DDS technique has several inherent features that render it of particular interest to HDTV transmission systems. Among these features are: numeric AM, FM, and/or PM with outstanding linearity; excellent spectral purity; digitally controlled predistortion; single-sideband generation by digital phasing; vestigial sideband generation by digital phasing; easy NTSC-to-HDTV conversion (software); and compatibility with any HDTV format (software).



- 963 Creating Filmless Motion-Picture Mattes on the LaserMatte System • C. Witty •** An imaging system has been built that provides a method for creating and combining images on motion-picture film without resorting to the use of either film-based mattes or video compositing techniques. The LaserMatte system produces a very high resolution image on a tungsten-illuminated laser-addressed liquid crystal light valve. The image on the light valve acts as an articulate printing light, which selectively exposes the film frame. Consequently, the problems associated with producing and realigning color-separation-based film mattes are circumvented.



- 970 Some Problems in Directing Color Pictures • SMPTE Classic Reprint, Originally Published August 1935 • R. Mamoulian •** A brief discussion of whether color in the motion picture is here to stay, pointing out that black-and-white was a convention that had to be accepted because of technical limitations at the beginning of the art. Had color pictures been invented first, a black-and-white picture would now seem flat and inadequate — although there are beauties in the unreal shadows that cannot be denied nor be destroyed. The paper concludes with a few remarks upon the use of color for enhancing and emphasizing the emotional situations of a picture, and the effects to be achieved by carefully selecting the colors of the clothing of the actors and of the backgrounds and lighting.

