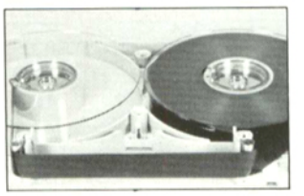
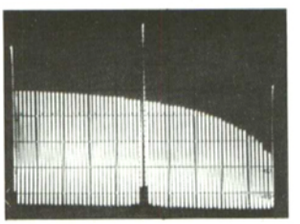
Highlights

870 **Eastman Color High-Speed Negative Film 7292** • *S. J. Powell and F. R. Reinking* • A new 16mm high-speed color negative film incorporating the new T- Grain emulsion technology is described. This film provides excellent resolution, granularity, and color reproduction that result in much improved prints and telecine transfers.

874 **SMPTE Type D-1 Cassette Design Considerations** • *P. A. Dare and K. Ike* • Unlike previous videotape cassette formats, the SMPTE D-1 format consists of a family of cassettes specifically designed to meet user-defined needs. Examination of broadcasters' needs and reference to recent improvements in basic cassette technology provided the starting point for an intensive study that led to agreement on the final design. The D-1 cassette family consists of three sizes of cassettes allowing for play times from 11 to 94 min.

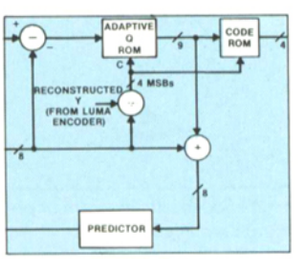


878 **Measurement Methods and Diagnostic Techniques for the Digital Television Tape Recorder** • *R. Hedtke* • The introduction of the digital television tape recorder (DTTR) will change all test and measurement procedures dramatically. Today a service engineer can monitor the analog waveforms with a simple oscilloscope and decide which part of the system is faulty. This is not possible with the DTTR, because the video and audio signals are digital data streams which are processed in many ways. Engineers will therefore have to devise new ways to simplify the testing procedure to achieve better maintenance and serviceability of the system.

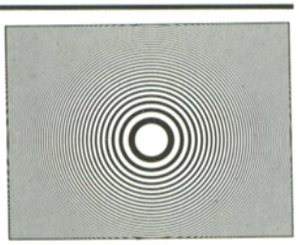
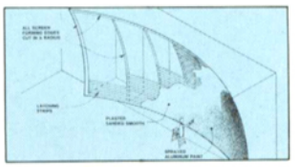


884 **Component Compositing in Post-Production** • *K. Eyring, B. Hopkins, D. Rabinowitz, S. Hoffman, R. Brandel, D. Schmerler, and T. Wolzien.* • This article discusses some of the operational processes and problems inherent in the post-production compositing of digitally generated graphic environments and live action videotape. The compositing of the images was performed in post-production, from videotape source material. Ultimatte™ and conventional keying processes were compared, using analog component and conventional NTSC video.

889 **Efficient Transmission of Digital Component Video** • *T. S. Rzeszewski and R. L. Pawelski* • This article discusses two basic approaches to the efficient transmission of digital component video. The first includes sub-Nyquist sampling, DPCM encoding, and decoding with comb filter reconstruction. The second approach utilizes sample interleaving, DPCM encoding, and digital interpolation reconstruction. Other techniques, such as sliding scale quantization, luminance bounding of the chrominance, line-sequential chrominance, and video transmission during the normal blanking interval can be applied to either approach to help reduce the transmission rate.



899 **The To-and Fro Zone Plate (TFZP) Method for Observing Frequency Characteristics in Three Dimensions** • *T. Fukinuki and Y. Hirano* • A simple and efficient method, the to-and-fro movement of a circular zone plate (TFZP), is proposed for the study of frequency characteristics in three dimensions; horizontal, vertical, and temporal. With this method, the circular zone plate (CZP) is moved reciprocally at various speeds in a horizontal or vertical directon. The mathematical bases for the evaluation of the TFZP are explained, and diverse applications are enumerated.



903 **Front-Projection Screens: Properties and Applications** • *S. P. Hines* • Information about front-projection screens is provided in an attempt to improve the screen design, in particular for 3-D theaters, as well as for other general front-projection applications. Topics discussed include a comparison of typical screens (used flat) and their characteristics, optical laws applying to front projection, and others.