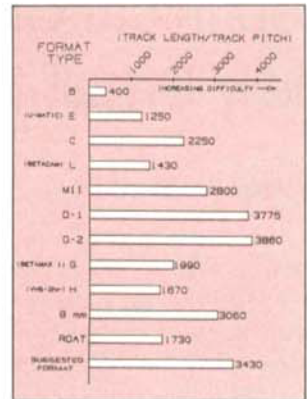


Highlights

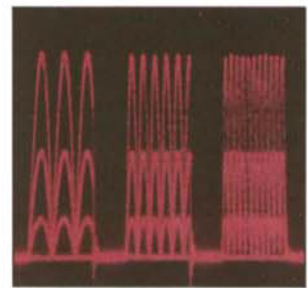
966 Technical Challenges for the Development of a New Small-Format DVTR •

J. P. Watney • Starting with today's television tape-recording requirements, this article examines the requirements for a single general-application, small digital format suitable for both ENG and most post-production applications. The technical challenges involved in reducing the required data rate and increasing the volumetric packing density are discussed. Considering tape thickness, track pitch, wavelength, and data compression, it may be concluded that at least three years may elapse before a viable 1/2-in. standardization effort for television applications could begin. A more desirable 8mm format would take longer. Considering the standardization cycle, the long lead time for the significant very large scale integration (VLSI) production and the development of a full range of products that would be required, the implication is that it will be five to seven years or more before a viable, standard, general-purpose small-format television DVTR could be available in product form.



970 Experiments with an Enhanced-Quality NTSC-Compatible TV System •

Y. Sugimori, Y. Kimata, and Y. Araki • Nippon Television Network (NTV) is conducting experiments with an enhanced-quality television system that is compatible with the NTSC system. The experimental system is expected to improve resolution, signal-to-noise ratio (SNR), and progressive scan, and to eliminate cross color and cross luminance. These improvements will increase the assessment of screen quality by two rating points. It will be possible to put the system into practical use within two years in Japan. Standardization of enhanced-quality television is currently being studied, and these experiments should play an important role in the deliberations.



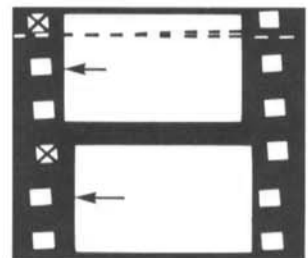
977 The Multiresolution Dissolve •

C. S. Stein and L. E. Hitchner • This article describes the Multiresolution Dissolve, a new technique used to achieve dissolves from one digital image to another, exhibiting many varied special effects. These include cross-dissolves of edge details before coarse image features, cross-dissolves of scene illumination before other image details, and a new smooth dissolve that reduces the double-exposed look of standard cross-dissolves. This method produces new and interesting results when applied to fading between background and titles or images. The Multiresolution Dissolve generates a series of bandpass filtered images of start and end images and then produces in-between frames of the dissolve sequence by summing the bandpassed images with weights that vary over time and by frequency band. Computational time and space are greatly reduced by the use of multiresolution pyramid image processing techniques.



985 Major Motion-Picture Production Standards •

G. Kennel, J. Pytlak, R. Sehlin, and R. Uhlig • Major motion pictures have been produced predominately on 35mm film having a four-perforation frame at 24 frames/sec for over 50 years. Recently proposed changes to 30 frames/sec or three-perforation frames appear to provide improved quality or reduced cost. The practical means of converting camera, projection, and telecine equipment to these proposed formats is discussed. The effects on image quality, audio reproduction, and motion rendition, as related to both theatrical projection and worldwide television release, are also reviewed.



991 The Archival Quality of Film Bases •

K. A. H. Brems • Several factors affect the archival quality of photographic film. Since the influence of storage conditions on the gelatine and image-forming substances has been covered extensively in the literature, this article concentrates on how long-term storage affects the support and substratum of the film. Research conducted into the causes of the vinegar syndrome, a deterioration of triacetate base, is discussed, along with recommended archival storage conditions. It is concluded that polyethylene terephthalate is a safer choice as a base for film that will be archived.

