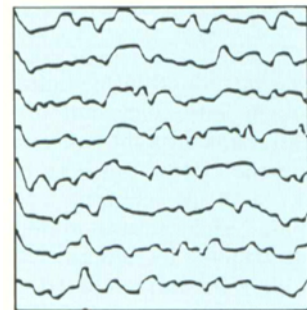


Highlights

- 164** **Fault Diagnosis in the Digital Studio** • *D. J. Bradshaw* • The increasing use of digital equipment in television studios brings with it potential problems for the maintenance engineer diagnosing faults. The article considers the reasons for this, the levels at which diagnosis is required, and some of the techniques that can be used. One of these techniques, signature analysis, is discussed in detail.



- 168** **The Application of High-Coercivity Cobalt Iron Oxide Tape for Digital Video Recording** • *K. Isesaka, Y. Fujimaki, T. Nakamura, S. Takahashi, K. Kobayashi, and S. Leader* • The 4:2:2 Type D-1 component recording system records signals at a rate of over 200 Mbits/sec with a shortest recording wavelength of only 0.9 μm . Low error rates (on the order of 10^{-6} to 10^{-7}) can be obtained with a tape formulation having a high output and low noise characteristics optimized to record at these wavelengths. As the D-1 DVTR can use only ferrite video heads, a high-coercivity cobalt oxide tape has been developed to meet the needs of the format. This article discusses why such a formulation was chosen and contrasts the performance of D-1 tape against that of other media when evaluated for the 4:2:2 standard.



- 173** **3XNTSC — A “Leapfrog” Production Standard for HDTV** • *W. E. Brett* • A high-definition television (HDTV) scanning standard based on three times the NTSC horizontal scanning frequency is proposed (3XNTSC). It provides a 1575-line 2:1 interlaced picture with easy conversion to existing formats. It can carry 1125/60 or wide film material in a 16:9 window.



- 179** **Chasing Rainbows: A Technical Overview** • *J. Galt and C. Pantuso* • *Chasing Rainbows*, a 14-hour miniseries that aired in the spring of 1988 on the CBC English-language television network, is distinctive in that it is the first television series produced entirely using HDTV equipment and techniques. This article describes the technical details of the equipment and methods used in its production. These methods were developed in a very short time and were shaped by the financial realities of the production. This information is presented as an overview of one possible approach to HDTV production in the hope that it will stimulate further discussion and encourage others to use this new and exciting production tool.



- 184** **Packaging Innovations for Motion-Picture Films** • *A. P. Griffen* • As technological advances in film continue to improve image quality, we must expand our means of containing, protecting, and presenting these valuable film products. Innovative package engineering and design not only provide an effective means of shielding film products from the hazards of transportation and the environment, but also add functional and graphical appeal. This article describes three advances in the packaging of Eastman motion-picture film products. First is the functional yet high-tech new vacuum pack. Second is a stronger, corrosion-resistant can for motion-picture films. Third is the unique label design and construction.



- 188** **History of the Motion Picture** • *C. F. Jenkins* • (Reprinted from the *Transactions* of the SMPE, 1921) • This is an exact description of the motion picture of today, and if this is really what he [Lucretus] meant, then it took two thousand years to get a suitable picture ribbon and a proper machine to handle it. And it will be noticed that the subject naturally divides itself into these two main elements, i.e., the picture-carrying vehicle and the handling mechanism therefor. The mechanism is of two kinds, i.e., one of them continuous movement, the other intermittent movement of the picture carrier at the illuminated aperture. The process, as we know it today, is likewise divided into two steps: the first a photographic analysis of the animated subject, the second a synthesis of the elements into which the subject was divided by the analytical process.

