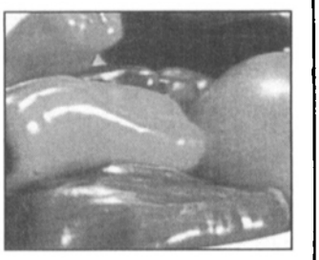
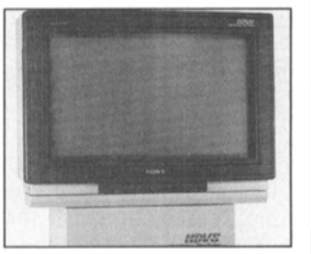
Highlights

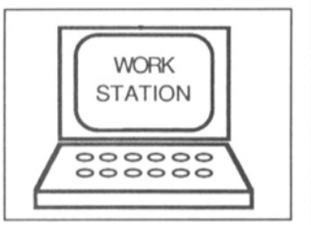
612 **The HARP High-Sensitivity Handheld HDTV Camera** • *F. Okano, J. Kumada, and K. Tanioka* • NHK Laboratories has developed a handheld HDTV camera with sensitivity ten times greater than HDTV cameras currently in use. The new camera allows shooting of darker scenes and covers a greater depth of field, and its small size makes it useful for shooting from various angles and at various locations. The high sensitivity is achieved through the use of HARP tubes and avalanche multiplication occurring in the HARP tube's target layer. Satisfactory signal-to-noise ratio (SNR) is also attained by employing GaAs field-effect transmitters (FETs) for the preamplifiers.



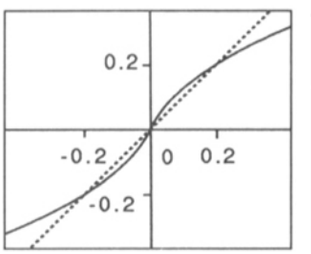
620 **Large-Screen HDTV Monitor Development** • *L. Thorpe, H. Miura, and T. Chikuma* • New large-screen direct-view studio reference monitors have been developed for HDTV. They use state-of-the-art superfine pitch Trinitron technology to produce high-performance display images 38.5 and 28 in. diagonally. This article describes the salient features of this technology and the steps taken to ensure full conformance with the SMPTE 240M 1125/60 HDTV production standard. Specific details are given on the separate digital electronic subsystems employed to overcome residual problems in white uniformity and ensure tight convergence specifications over the entire image raster.



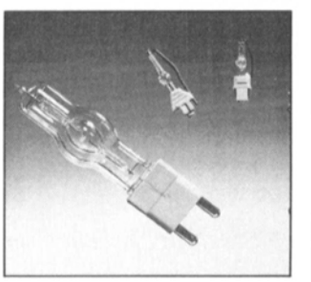
634 **A Closed-Loop Digital Video Editing System** • *L. J. Gardner and D. H. Scoggins* • An on-line video editing system has been developed, using a solid-state digital memory and digital videotape to archive scene elements and allow them to be used as many times as necessary for transitions, layering, and effects. Through this method, a single digital mix-effects system, along with a one-source VTR and a single channel of digital video effects, is equivalent or superior to a conventional editing system. The system integrates control of all video equipment from a single workstation, simplifying system management for the operator.



639 **A 6-MHz NTSC-Compatible Widescreen Television System with Pan-and Scan Capability** • *S. Inoue, S. Kageyama, H. Uwabata, Y. Yasumoto, and Y. Abe* • The proposed 6-MHz NTSC-compatible widescreen television system, using quadrature amplitude modulation of the video carrier and an inverse Nyquist filter, now has pan-and-scan capability. This article reviews the principle of quadrature amplitude modulation and describes how to select a center panel and side panels from an original widescreen image. Techniques are also discussed, such as scattering, frequency inversion, and level conversion, for reducing multiplex signal interference in a conventional receiver using an envelope detector.



644 **New Single-Ended Metal-Halide Lamps for ENG, EFP, and Film Production** • *F. S. Henry and B. Lewandowski* • In the modern stage, studio, TV, film, and special effects marketplace, there is an increasing demand for compact light sources that provide high luminous efficiency, daylight color temperature, and good color rendering. An additional requirement for these light sources is that they be capable of convenient mounting and of optical compatibility with existing fixture designs. OSRAM Corp., the first manufacturer to develop medium arc metal-halide lamps, has met this need by forming a family of single-ended metal-halide lamps: HMI® 123, HMI 250 W/SE, HMI 400 W/SE, HMI 1200 W PAR, HMI 1200 W/SE, and HMI 2500 W/SE.



652 **The Origins of 35mm Film as a Standard** • *J. Belton* • The origins of 35mm film as a production and exhibition standard and the 4:3 image aspect ratio are examined. W. K. L. Dickson's work for Thomas Edison is reviewed in terms of the economic and aesthetic factors that influenced the selection of 35mm film as the ideal gauge for use in the Kinetoscope. The introduction of other wider gauges by Edison's rivals during the transformation of motion-picture exhibition from peep show to projection are also traced, suggesting several reasons for the industry-wide adoption of Edison's standards in the first decade of this century.