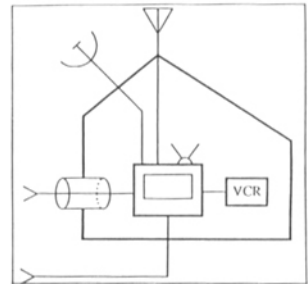
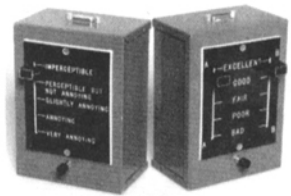


# Highlights

- 668 Considerations in the Design of HDTV Systems for Terrestrial Broadcasting • W. F. Schreiber •** The preliminary decision by the Federal Communications Commission (FCC) to require simulcasting of HDTV in 6-MHz channels and to give an extra channel to each licensee who desires it for this purpose sets several important challenges for the system designer. Unprecedented advances in data compression and channel coding are required. In particular, effective suppression of analog channel impairments and very high spectrum efficiency are mandatory. The means by which this may be accomplished while incorporating a number of other desirable features in a TV system that is to last for several decades is discussed in this article. The opinions herein are those of the author only.



- 678 Subjective Testing of the HDS-NA Satellite Signal in the  $K_u$  Band • C. Basile, R. McFarlane, and C. Ciacci •** Subjective tests were performed on the Philips high-definition system for North America (HDS-NA) signal using a hardware simulator of a complete  $K_u$ -band satellite transmission system incorporating the Region 2 direct broadcast satellite (DBS) channel spacing of 14.58 MHz. When NTSC interfered with HDS-NA and HDS-NA interfered with NTSC, interference protection ratios were measured and compared with the Regional Administrative Radio Conference (RARC) '83 protection ratios for NTSC in this environment.



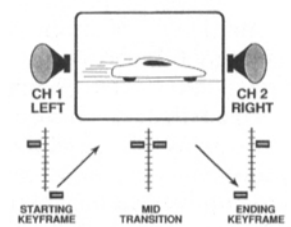
- 691 A Unified Approach for a TV Graphics Animation Suite • R. A. Pank •** The use of graphics in TV has increased and broadened enormously in recent years. Techniques such as rotoscoping and retouching place special demands on video frame handling, while the need to present graphics as moving elements, or dynamic graphics, calls for yet more facilities. These can be provided, at some cost, in a digital edit suite, complete with graphics and digital effects equipment and with the appropriate set of operators.



- 694 Television Graphics for Film — Dream or Reality? • P. Owen •** The strength of the film medium in the entertainment industry is constantly discussed as HDTV systems gain prominence. It can be argued that film shows benefits both technically and economically for certain types of production, but in graphics and special effects the technique used lacks the technological assistance available to the television industry. Developments such as integrated digital post-production systems for television are clearly desirable for the film industry, but matching the perceived quality goals without sacrificing operational techniques poses certain challenges.

The drive toward higher-definition television systems and standards has often overshadowed the fact that a means of capturing, editing, post-producing, and distributing high-resolution images already exists via the film chain. If there is quality control throughout the production path, film image quality for the viewing audience surpasses all existing electronic systems, particularly when frame sizes and frame rates greater than the conventional 35mm, 24 frame/sec formats are used. The quality of film is most

- 696 A Computer-Controlled Audio Mixing System for Video Post-Production • C. J. Birkmaier •** The availability of multiple high-quality audio tracks on the current generation of professional video recorders, and the ability to distribute video programs with stereo audio, through broadcast, cable, and home VCRs, is changing our perception of the importance of audio in video productions. This article examines the development of a microprocessor-controlled audio mixing system for use in video post-production. The audio mixer can be controlled by a video editing system or follow the operation of a video switcher using a variety of serial interface protocols.



- 702 Pioneering in Talking Pictures • SMPTE Classic Reprint, Originally Published January 1941 • L. de Forest •** To pioneer has always been with me an obsession. Perhaps the yearning to explore new fields was an inheritance from colonial ancestors. Vanished geographical frontiers still left far vaster regions in science and technology to explore. When early wireless began to be a bit crowded the radio telephone field, then scarcely a dream even among communication engineers, beckoned me irresistibly. This primitive beginning of the radio broadcast, in 1908, logically necessitated the development of the electronic amplifier from the audion detector tube; and thus again I managed to escape the crowd.

