# ABSTRACTS OF PAPERS FROM OTHER JOURNALS

**USSR — Television at Olympiad-80,** S. I. Nikanorov, *Tekhnika Kino i Televideniya.*

One of the most important achievements of Soviet television in 1980 was the establishment of the Olympic Television and Radio Complex (OTRC) and the successful coverage of the 22nd Olympic Games. The complex consists of three basic parts: (1) The Olympic Television and Radio Center, (2) the TV and Radio broadcasting equipment at the various sports facilities, and (3) mobile TV and radio broadcasting equipment.

This article discusses the parts of the complex and other aspects of television coverage of Olympiad-80.

**Light-Emitting Diodes for Optical Fibre Systems,** A. C. Carter, *Radio and Electronic Eng., 51:* 341–348, July/Aug. 1981.

Light-emitting diodes are important fiber optic sources not only for short-haul, low-cost data links, but also in the long-haul, high-data-rate telecommunications field. This paper discusses the range of applicability of LED sources and the performance design and optimization of such devices. Results are given for devices operating both in the low-loss 1.3 $\mu$m window and in the 0.8–0.9 $\mu$m window.

**Spatial Compression and Expansion of Digital Television Images,** Glenn A. Reitmeier, *RCA Review, 42:* 3–59, Mar. 1981.

Video signals are one-dimensional projections of three-dimensional information, two spatial and one temporal. It is desired to process the spatial information contained in a television signal in order to compress and expand video images, thus providing an "electronic zoom" capability. Of course, this must be accomplished while maintaining the color information and the proper video format. Further, it is desired to alter the horizontal and vertical sizes of the picture independently in order to change the aspect ratio of the image. Digital signal processing techniques are utilized to achieve this goal. Several algorithms are presented and analyzed, and their effects on actual images are shown. These algorithms range from simple methods of operating on a composite NTSC video signal, which produce fixed size compressions, to a method of operating on a component video signal, which is derived from the application of linear systems theory. Further modifications to this technique produce compressed and expanded images of extremely high quality while maintaining the computational simplicity required for real time implementation. Various tradeoffs affecting image quality are discussed; and finally, other special effects based on compression are suggested and illustrated.

**A Transportable Satellite Ground Station for Television Relay,** B. Salkeld, D. Griffiths and S. Verma, *Radio and Electronic Eng., 51:* 131–140, Mar. 1981.

Since 1978, IBA has been experimenting with a portable satellite ground station designed to transmit television signals via the OTS satellite using the 14 GHz up-link frequency band. The aim of these experiments has been to develop the use of transportable satellite up-links for reporting news and events by satellite on a national and international scale. The paper describes the background of the requirement for such terminals and reports on the technical results obtained. The practical experience gained has made it possible to define the desirable features of operational terminals of this type, and these are considered.

The future for television news reporting via satellite will depend upon the economics of this method in comparison to others and upon whether satisfactory technical and regulatory methods can be devised to safeguard the use of the geostationary orbit. The extent of these problems and the possible solutions are considered.

**Synchronization of 6.3-mm Tape Recorders Using EBU Time and Control Code,** W. R. Hawkins, C. Henocq and R. J. Taylor, *Radio and Electronic Eng., 51:* 97–102, Feb. 1981.

This paper discusses the addition of EBU time and control code to the twin-track format on 6.3-mm tape recorders. The code is carried on a center track 0.8 mm wide using a recording characteristic of zero microseconds so that the system can read to code accurately over a wide range of tape speeds. To preserve the waveshape, the recording amplifier has phase-corrected equalization; and to minimize noise, the equalization of the reproducing chain is split into two parts using head loading for high-frequency compensation followed by a low-frequency circuit in the amplifier.