munications approach is appropriate and effective. How to organize and budget for a multi-image production is also examined. A section on planning covers the steps from media selection to organizing an effective production proposal and treatment. A final section on presentation shows how to rehearse, transport, set up and present the finished program. The book also contains eight in-depth interviews with leading multi-image producers.

The Hawkeye recording camera system is described in a full-color brochure (9155B) available upon request from RCA Broadcast Systems, Bldg. 2-2, Camden, NJ 08102. The Hawkeye is an integrated one-piece video field production system which combines a compact broadcast-quality color TV camera, a videocassette VTR, a microphone and battery all in a lightweight portable package. Features, applications and capability of the Hawkeye are described in the brochure.

Minolta Industrial Meters are described in an eight-page, two-color brochure available upon request from Minolta Corp., 101 Williams Dr., Ramsey, NJ 07446. Three meters are described — the Illuminance Meter for continuous and instantaneous light readings; the Luminance Meter 1° for spot readings of a light source on surface brightness; and the Chroma Meter, a compact tristimulus color analyzer.

CCTV lenses, lens accessories, video access control, portable surveillance systems and covert or overt CCTV housings are described in a 24-page catalog available from Visual Methods Inc., 25 Charles St., Westwood, NJ 07675. The catalog includes charts and tables to aid in CCTV system design.

Digital signal processing components are listed in a four-page short form illustrated catalog available from TRW LSI Products, P.O. Box 2472, La Jolla, CA 92038. Listed in the catalog are 8-, 12-, and 16-bit multipliers and multiplier-accumulators. Also listed and described are high speed A/D and D/A converters and digital correlators.

A lens selection data sheet for use with television cameras is available from Cohu, Inc., Electronics Div., P.O. Box 623, San Diego, CA 92112. Topics covered include scene illumination, lens speed, focus, focal length and plane, and magnification.

The RTI 1981 catalog, listing more than 1200 audiovisual and motion picture products plus accessories, is available upon request from Research Technology International, 4700 Chase Ave., Lincolnwood, IL 60646. The catalog contains 144 pages and is illustrated. Equipment includes film inspection, cleaning and editing equipment, film splicers and splicing equipment and many more.

ABSTRACTS OF PAPERS FROM OTHER JOURNALS

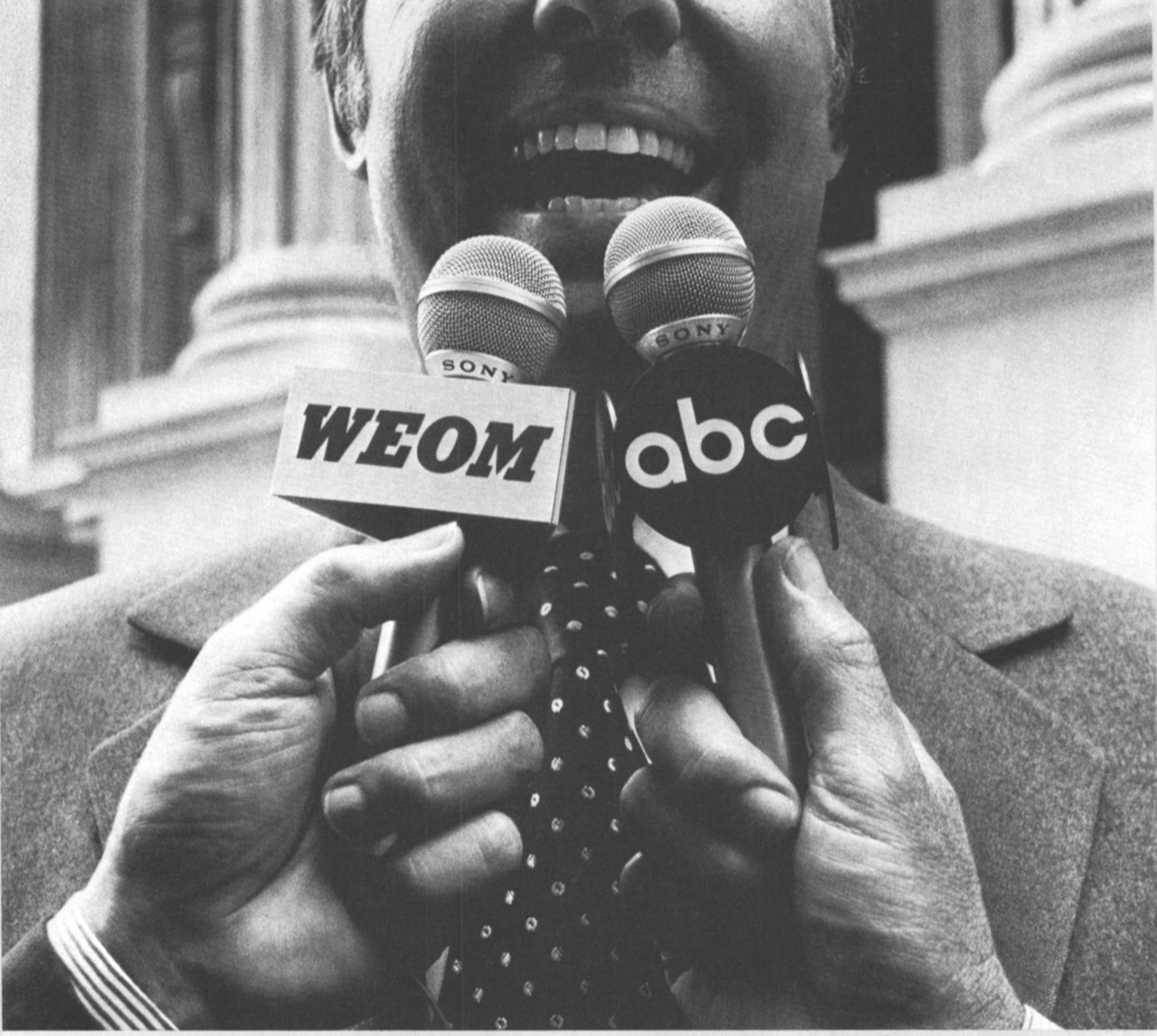
The Measurement of Teletext Performance Over the United Kingdom Television Network, L. A. Sherry and R. C. Hills, *Radio and Electronic Eng., 50:* 503-518, Oct. 1980.

This paper summarizes the results of extensive teletext field trials conducted in the United Kingdom between March 1976 and March 1978. Consideration is given to the teletext performance of the UHF television network, the extent of reception in the homes of viewers, and the performance of teletext decoders. The results indicate that the service will be predominantly field strength limited provided viewers use well-installed outdoor antennas.

It is suggested that data regeneration may be used to advantage to ensure the highest possible standards of radiated performance from certain stations. This is because, to a large extent, transmitter group delay errors become more significant for teletext than for television. The paper concludes that an adequate teletext service is available to a high percentage of the existing television audience, provided production receivers have a decoding threshold approach of 25% eye height. However, it is noted that many current production receivers fall considerably short of this performance.

The Influence of the Elasticity of Magnetic Tape on Some Parameters of Magnetic Recording, Wolfgang Fell, *Radio and Electronic Eng., 50:* 624-630, Nov./Dec. 1980.

A tape driven by an accurately running capstan between precisely aligned guides cannot be scanned exactly. Due to the



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elastic properties of the tape there are elastic displacements superposed on the nominal tape movement. These additional tape movements which are generated by tension disturbances or natural frequencies may affect the recording and playback. This effect is considered and estimated.

Digital Processing of Composite Colour Signals: Separation Into Components and Reconstitution Without Loss of Quality, N. Mayer and R. Sand, *EBU Review, 185:* 13-17, Feb. 1981.

In the course of the re-equipment of existing television studios for fully-digital operation, use will be made of numerous items of equipment that carry out digital processing and have PAL composite color signals at their input and output. The fact that demodulation and remodulation of the chrominance subcarrier are necessary would normally lead one to expect some deterioration in the signal quality, and this would be particularly serious when several items of equipment involving PAL demodulation and remodulation are connected on cascade. The article describes a method whereby it is possible to avoid such a reduction of the signal quality. The method may be applied also in the cases of NTSC and SECAM composite color signals.

An Experimental 4-Phase DPSK System to Transmit Two High-Quality Digital Sound Signals, D. J. Whythe, *EBU Review, 185:* 2-12, Feb. 1981.

Digital audio techniques are particularly suitable for use on outside-broadcast links because, as well as the advantages inherent in the digital mode, they offer the possibility of eliminating, at least partially, problems such as fading and the phase differences between the channels of a stereophonic pair. That is why the BBC has developed the system described. This article begins by considering the choice of the type of modulation to be used (differential phase-shift keying), and then discusses the demodulation stage, and in particular the spectrum shaping and the regeneration of the carrier and the clock signals.

The results obtained in laboratory experiments and in field tests are described. The technique has been used under operational conditions to transmit stereophonic program signals at various frequencies from outside broadcasts on three different occasions. The final section, which considers the future of the techniques, draws attention to the problems that would arise in its use for broadcasting programs intended for reception by the general public.

Eine Neue Hochauflösende Plumbiconröhre (A New High Resolution Plumbicon Tube), Ad Franken, *Rundfunktechnische Mitteilungen, 25:* 49-53, Mar./Apr. 1981.

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(Continued on p. 1036)

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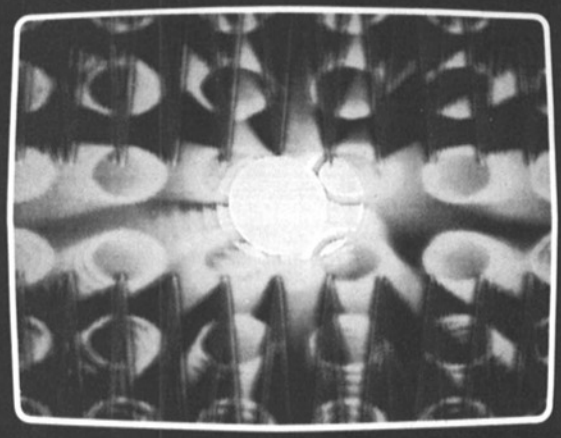

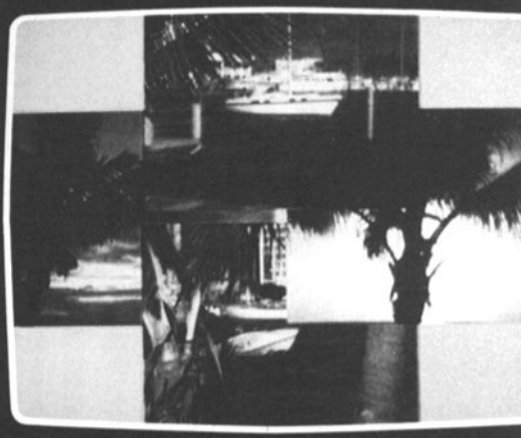

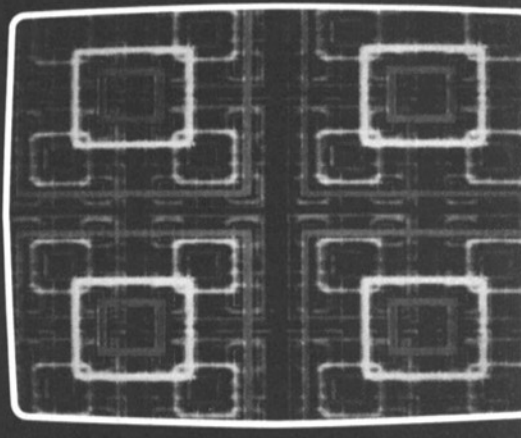

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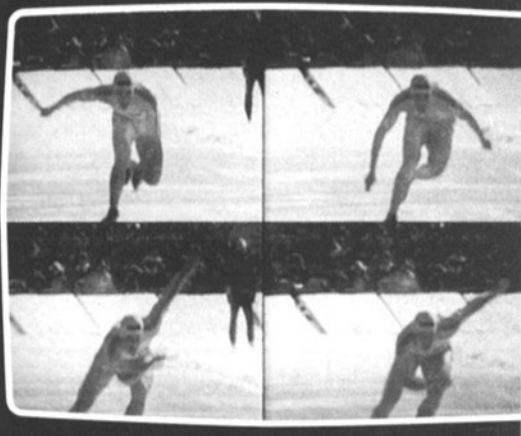

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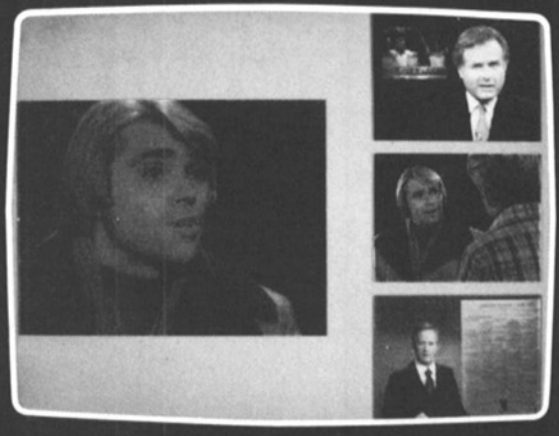

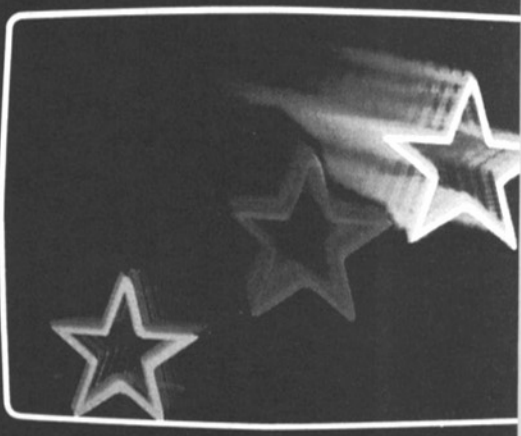

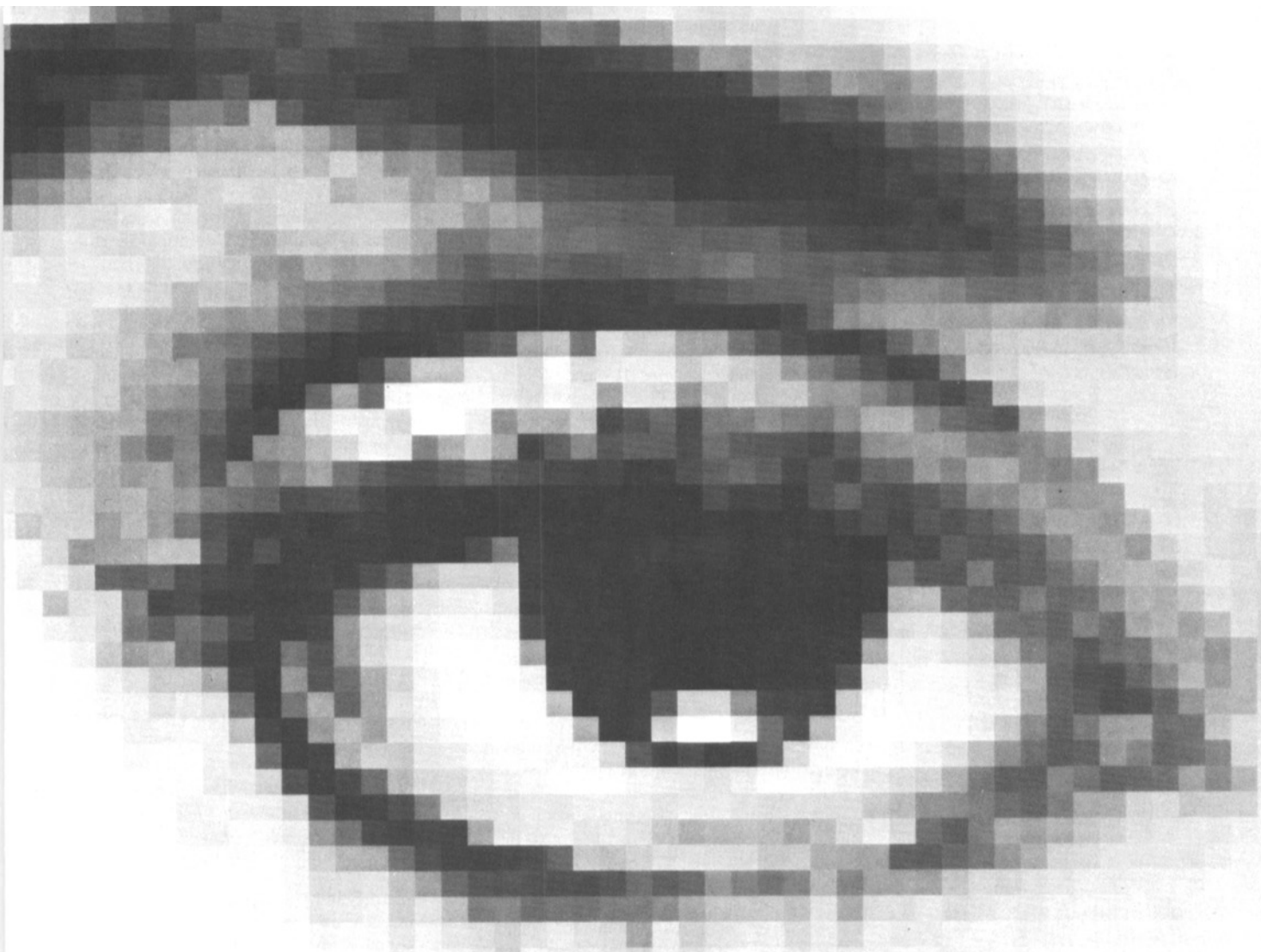

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diameter of the scanning beam is sometimes so small that it is of the same magnitude as the spacing between two lines. In that case it is not logical to increase the camera tube's resolution capability still further because the vertical resolution is not determined by the tube but by the number of lines. If, however, it were possible to increase the number of lines, as would be the case in higher resolution television systems, then the camera tubes, too, could be further improved. For that reason, a new tube has been developed especially for such systems. It was designed for a picture diagonal of 26 mm whereby a very high resolving power has been attained. In order to improve the lag, use has been made of a diode system. This implies also that the beam current is sufficient for techniques employing beam-current control for dealing with highlights. (Translated from the Dutch.)

Two-Dimensional Transforms of the Sampled National Television Systems Committee (NTSC) Color Video Signal, S. J. Orfandis and T. G. Marshall, *Optical Eng, 20:* 417–420, May/June 1981.

Two-dimensional transforms of the chrominance components of the National Television Systems Committee (NTSC) color video signal are studied. The effects of interlace and subcarrier modulation on the spatial frequency spectra are treated in detail. Multidimensional sampling theorems for the NTSC signal are presented. The relation of interlacing and decimation-in-space for a two-dimensional fast Fourier transform (FFT) algorithm is discussed.

Fifteen Years of Laser Recording — Where We've Been and Where We're Going, R. F. Kenville, *Optical Eng., 20:* 330–334, May/June 1981.

One of the earliest practical applications of lasers was in the field of recording. The laser provides a source of radiation that is convenient to modulate and sufficiently intense to bring about permanent changes in materials (recording). Both signal and image recording systems have been built using silver halide film as the storage medium. Now under development are optical disk techniques that ablate special coatings on the disk surface. The laser work has been funded in general because the requirements at hand could not be met by more conventional technology. The engineering of these systems has resulted in working with the ultimate in mechanical precision, the highest optical quality available, and at electrical bandwidths that push the state of the art. The early work in laser signal recording, the significant accomplishments in image recording, and the current efforts on optical disk recording are described.

Digitaler Kennsignalgeber (Digital Identification Signal Generator), Heinrich Twietmeyer, *Rundfunktechnische Mitteilungen, 25:* 61–66, Mar/Apr. 1981.

The Institut für Rundfunktechnik has developed a digital identification signal generator for the storage and reproduction of audiofrequency signals. The sound signals may consist of music, speech, or synthesized signals and may be combined for station or circuit identification, interval signals, and test or measuring signals. The sound signals are stored in PCM form in digital semiconductor stores and reconverted into analog signals upon reproduction. Compared with analog storage on magnetic tape, used up to the present for such purposes, digital storage makes possible a considerably better sound quality (less noise, less distortion, no flutter or wow, no print-through). Because the storage in the digital identification signal generator is provided by electronic semiconductor stores and thus, in contrast to the conventional sound carriers (disk, magnetic tape) it contains no mechanically moving components, neither the equipment nor the sound signal is subject to wear. The equipment, therefore, does not require any maintenance; the reproduction quality of the sound signal is not degraded even by frequent replaying.

The Influence of the Elasticity of Magnetic Tape on Some Parameters of Magnetic Recording, Wolfgang Fell, *Radio and Electronic Eng., 50:* 624–630, Nov./Dec. 1980.

A tape driven by an accurately running capstan between precisely aligned guides cannot be scanned exactly. Due to the elastic properties of the tape, there are elastic displacements superposed on the nominal tape movement. The additional tape movements which are generated by tension disturbances or natural frequencies may affect the recording and the playback. The effect is considered and estimated.

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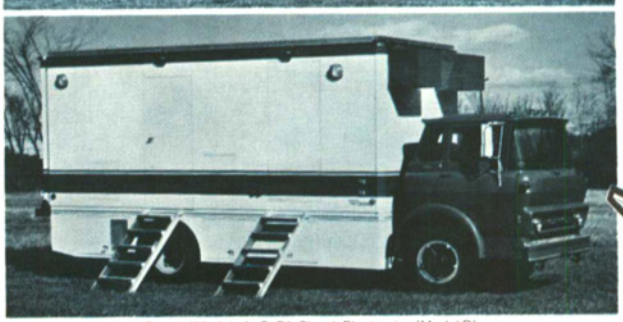

Photos courtesy Wolf Coach (Models A, C, D); Shook Electronics (Model B).

A-10: 10-11' production area, 1-2 cameras, 1 portable VTR, audio mixer, video switcher, audio cart recorder, and ancillary equipment.

B-14: 12-14' production area, 2-3 cameras, 1 studio VTR, audio console, production switcher, audio cart and reel/reel recorder, intercom, and ancillary equipment.

C-16: *See illustration to right.* 16-18' production area, 2-4 cameras, 1-2 studio VTR's; other equipment similar to B-14.

D-22: 18-24' production area, 3-6 cameras, 1-3 studio VTR's, A/V routing switcher, 2 audio cart recorders, telephone system; other equipment similar to B-14.

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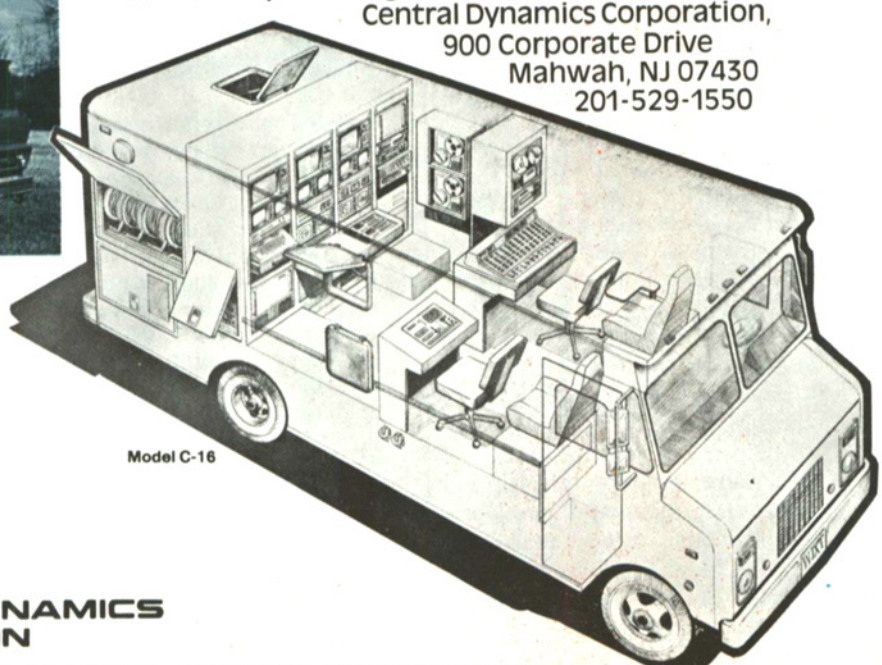

Model C-16

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