

headset and insert earpieces (tips) that can substantially affect both a passenger's comfort and perception of sound quality. In addition, the ability of the tips to attenuate cabin noise can influence both the intelligibility of speech on sound tracks and the extent to which the sound pressure level necessary for an acceptable signal-to-noise ratio may exceed a safe upper limit. Effects of design differences are described and suggestions are made for improving performance and listener acceptance.

The Aeroplane as a Camera, Roger E. Read, *J. Photographic Science*, 31:212, September/October 1983.

Present-day methods of aerial photography are little different from those of the early 1950's. The aerial camera is installed in available aircraft as a totally separate system, the adaptation more often designed with economy rather than efficiency in mind. The Ultra Light Survey Aircraft Concept describes an integral aircraft/camera system in which a single crew member operates a fully automated survey system.

Deformation Measurements of Power Dams with Aerial Photogrammetry, A. J. Brandenberge, S. K. Ghosh, and M. Bougouss, *Photogrammetric Eng. and Remote Sensing*, 49:1561, November 1983.

The use of aerial photogrammetry, due to its operational and economic advan-

tages, offers much toward periodic control surveys to determine deformations in power dams. An increased use of aerial photogrammetry for such deformation measurements can be foreseen.

The paper deals with the development of a digital method for measuring differential movements in three dimensions of a power dam. This method emphasizes the use of a digital model datum rather than ground control by way of using the initial model for absolute orientation of subsequent models and using spatial "entities" (a set of points describing the whole or part of a feature which can be interpreted or recognized on the stereo-model) for studying the differential movements. Data analyses with statistical control are discussed. The results are analyzed and some ideas are presented for further refinement of the developed working system.

Multiple-Cavity Lasers for Holography, James D. Trolinger, *Optical Engineering*, 23:043, January/February 1984.

The use of multiple-cavity lasers in holography and photography is described. By splitting up a ruby laser cavity and using part of the crystal for different cavities, a number of interesting possibilities result. Eight basically different configurations are discussed to show how the normally oversized crystal in commercially available lasers can be used to advantage. These result in lasers that become ideal

sources for some applications, such as ultra-high repetition rate, stereo holography, multiple reference wave, simultaneous front and back lighting, multiple framing, and other techniques.

Modulation Transfer Function from the Variance of Cyclic Bar Images, Ronald T. Droege and Mark S. Rzeszutarski, *Optical Engineering*, 23:068, January/February 1984.

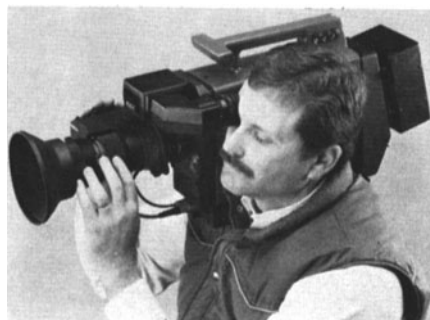
The variance of a bar pattern image can be used to measure the modulation transfer function (MTF) of an imaging system. This method is often simpler and more practical than conventional methods. The theoretical basis of the method is derived and verification is provided by computer simulations. The computer simulations also are used to evaluate the accuracy of approximate formulas. The MTF of a computed tomographic (CT) scanner is measured to illustrate the technique.

Incoherent Optic Image Correlator, Demetri Psaltis, *Optical Engineering*, 23:012, January/February 1984.

A real-time optical image correlator is described. An acousto-optic device and an array of light-emitting diodes are the electronic-to-optical transducers for the input and reference images, respectively, in this architecture. The two-dimensional correlation is formed by temporal integration on a two-dimensional CCD detector.

NEW PRODUCTS

Further information about these items can be obtained from the addresses given. As in the case of technical papers, the Society is not responsible for manufacturers' statements, and publication of these items does not constitute endorsement of the products or services.



CCD-1 portable color camera, RCA

The CCD-1, a portable solid-state color camera using three charge-coupled devices in place of camera tubes, was recently announced by RCA. Developed and manufactured by RCA's New Products Div., Lancaster, Pa., the chips used in the camera measure 0.325x0.415 in. Each

chip contains 403 horizontal picture elements (pixels) and 512 effective vertical pixels.

The RCA chip is designed on the frame transfer method because of its potential for high sensitivity and low output capacity. The frame transfer structure has an image area at the top and a storage area with output register at the bottom. The bottom area is shielded from light. The image is focused on the upper area, and the resulting charges are transferred, once per field, to the storage area at the bottom.

The CCD camera produces sharper pictures, said to have the look of film. Main advantages of the new camera are its ability to see detail in rapidly moving objects, and its ability to perform over a wide range of lighting conditions, thus making it especially suitable for news gathering and sports coverage. Other advantages over tube cameras are ruggedness, long life, and superior reliability.

The Calaway Automatic Video Replacement System (AVRS), for use in film-to-tape transfers, has been announced by Du

Art Video, division of Du Art Film Laboratories, Inc., 245 W. 55th St., New York, NY 10019. The AVRS permits insertion of re-recorded scenes or new scenes of the same length in an existing transfer without editing. It also eliminates the need for second generation masters and allows frame-accurate reel changes. Du Art can now control the telecine process using one or two recording VTRs. Even with reel changes, scenes can be inserted in a transfer master with frame-to-frame accuracy, and the need for a separate editing suite is eliminated.

A new film format for 35mm motion pictures called Iscovision™, was announced by Glenn Berggren, vice-president, Optical Radiation Corp., 1300 Optical Dr., Azusa, CA 91702. The new format was developed in cooperation with the Isco-Optics firm of West Germany. It is a full-frame 35mm wide-screen format with a hybrid anamorphic system of lenses. Iscovision has all the advantages of other wide-screen systems while providing more light, better image detail, and picture

YOUR WORLD

The whole show builds to a series of quick cuts. But building those cuts isn't a quick process. So you take it back and forth... frame by frame... over and over. Through endless passes—and endless points of view. But in the end, what you really have to trust are your own eyes. And your instincts. And your tape.



Photographed at VCA Teletronics, New York City.
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We know you need a videotape that can take the punishment of relentless editing. So we've taken the number one 1-inch tape in the world—our own Scotch® 479—and topped it. With Scotch 480. With the same excellent electromagnetics as 479. The same superior dropout performance. And the same laser-tested consistency. But with 480, we've made a tape that's still more rugged—capable of retaining original picture quality even after 1000 edit passes from the same pre-roll point. With less than 1½ dB loss. Without stiction. And with the backing of Scotch engineers just a call away. Scotch 479 and 480. Two of the tapes that make us...number one in the world of the pro.



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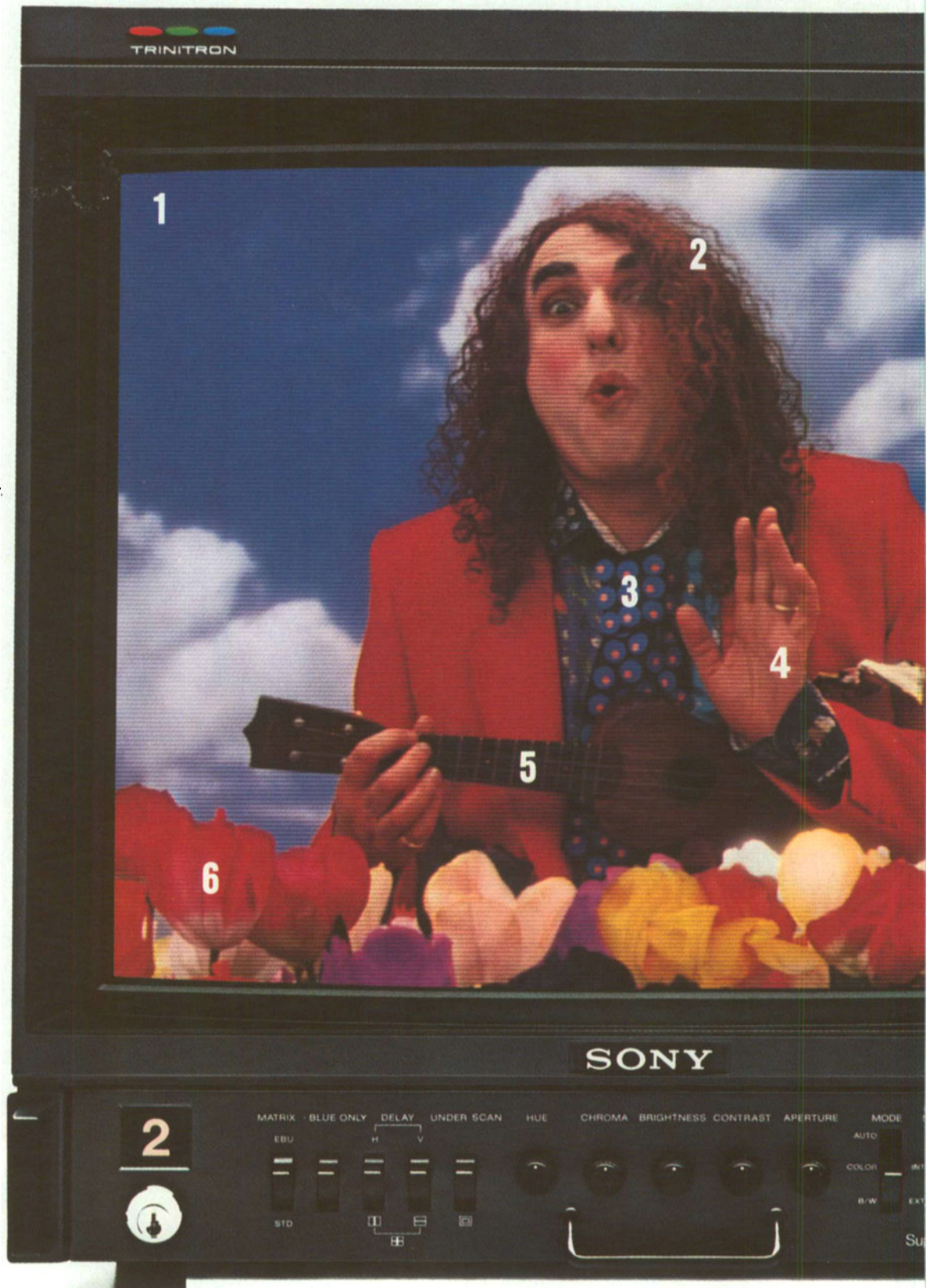
2 Nine-hundred TV lines for the highest resolution of any master control CRT—so details are sharper, and noise is never hidden.

3 Advanced comb filter—to achieve excellent luminance/chrominance separation with minimum artifacts.

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5 One-percent linearity in center lines—to ensure perfectly proportional images.

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steadiness. Berggren noted that the industry's current bread-and-butter 35mm format uses only two-thirds of each film frame, thus wasting a considerable amount of film emulsion. The Iscovision full-frame format, however, uses the entire frame and wastes no emulsion.



Video Movie system, Zenith Radio Corp.

The Video Movie system, a combination videocassette recorder and color video camera, has been announced by Zenith Radio Corp., 1000 Milwaukee Ave., Glenview, IL 60025. Based on 1/2-in. vidcotepe technology, it uses a VHS-C minicassette. With one minicassette, the battery-operated camera/VCR can record a full 20 min. The Video Movie weighs only 5 lb. Features include a Saticon tube, 6X zoom lens, automatic white balance, and automatic iris control. Recorded material can be played back immediately through the system's built-in electronic viewfinder.



AG-6800 stereo hi-fi VHS recorder, Panasonic Industrial Co.

The AG-6800, a professional stereo hi-fi VHS recorder has been announced by Panasonic Industrial Co., One Panasonic Way, Secaucus, NJ 07094. The AG-6800 is an FM multiplex depth recording system. Two additional recording heads are mounted on the same cylinder as the video heads. The heads record the audio signal on a deep layer of the videotape and the video signal on a shallow surface layer. Azimuth angles of the heads are different, so there is no interference or intermodulation distortion. The left and right audio channels are independent, allowing for stereo separation. Bilingual recording is also possible, since there is no significant crosstalk.

The AG-6800 can be used as a dubbing VCR. Studios can connect up to 400 units and operate all of them with a single switch by looping through the Rec Remote connectors. Rec mode start, stop, and eject operations are performed by switching an external remote switch. A minor internal adjustment will preset the

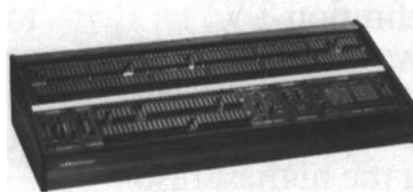
units to go to pause, stop, or rewind, and then eject when the external switch is turned off.



Auto-Focus 35R, Fries Engineering, Inc.

The Auto-Focus 35R, a new reflex conversion for the Mitchell 35 High-Speed/Standard camera, has been announced by Fries Engineering, Inc., 12032 Vose St., North Hollywood, CA 91605. The AF35R was designed for computer-controlled or "motion control" camera tracking systems. The unit is basically a 35R beam-splitter reflex conversion to the Mitchell with the addition of a sliding base plate and bellows that allow the film plane, rather than the lens, to be adjusted for focus. A stepper motor drives a lead screw with a linear travel of 0.200 in./revolution.

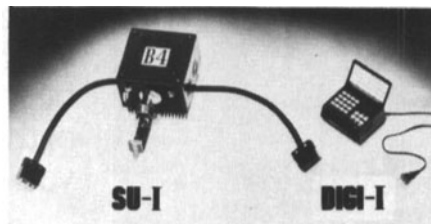
The base uses Microslides crossed roller ways for minimum friction with any load throughout the full 4 in. of travel. An optional internal capping shutter is available in addition to the camera's variable shutter that, under computer control, allows random frame access. Other features include a choice of lens mounts, and options such as a video assist, high-speed and single-frame motors, motorized zooms and dissolves, and torque motor-driven magazines.



Lighthesizer, Great American Market

The Lighthesizer, a lighting control console, has been announced by The Great American Market, 826 N. Cole Ave., Hollywood, CA 90038. A modular system, it features a manual board and two memories. The first is level memory with two-scene preset. The second, memory chase, can preset and run up to 2368 continuous steps. Features include a compact, modular design, and complete LED activity.

Cam Rail, a tracking system for film and video cameras, has been announced by Optex Ltd., 22-26 Victoria Rd., New Barnet, Herts EN4 9PF, England. Cam Rail is designed especially for small production companies. It consists of aluminum rail track in various lengths and curves and lightweight tripods. Cam Rail can be set up over even or uneven surfaces or across streams. It can also be laid on flat surfaces without the need for supporting tripods.



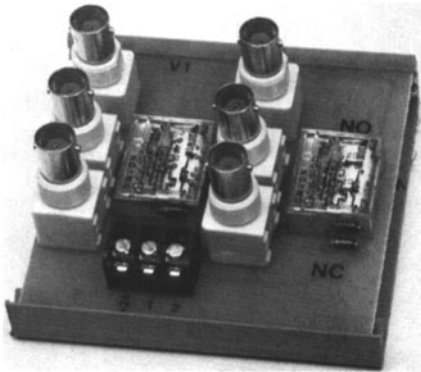
Remote controlled lighting system, Union Connector Co.

A modular wireless remote controlled lighting system, the SU-I and DIGI-I, has been announced by Union Connector Co., Inc., 149 Babylon Turnpike, Roosevelt, NY 11575. A complete compact dimming and switching system, it can also be used as an add-on to existing systems. Dimming and relay controls are accomplished by RF digital data that is transmitted on the ac power lines that service the switching and dimming modules. All that is required is to plug the lighting source into SU-I, plug SU-I into any outlet, and then plug DIGI-I into any outlet on the same wiring system.

The SU-I dimmer weighs 12 lb and can be mounted directly on a stage lighting batten with a C-clamp. It is designed to control 20 A or 2400 W of lamp load. The DIGI-I weighs 2/3 lb and is hand-held for remote operation. When plugged into an ac outlet, it can control up to 256 dimmers, and can be preset to operate any combination of switching and dimming functions.

An analog color slow-scan transceiver, Model 290C, has been announced by Colorado Video Inc., Box 298, Boulder, CO 80306. The 290C is a freeze-frame instrument that transmits and receives still color video images over the standard dial-up telephone network at a rate of 70 sec/picture. The device may also be used with 7.5-kHz microwave or satellite sub-carrier channels, reducing refresh time to 8 sec/picture.

The 290C accepts either NTSC color video or EIA monochrome input signals, and produces a fully interlaced video output signal, making it compatible with a wide range of cameras, monitors, and other television equipment. The basic memory structure provides a 512x240 pixel video display with 6 bits of gray scale. Optional are 512x480 pixel resolution and 8-bit gray scale. Up to three picture memories are available, allowing for simultaneous display of different images.



V-1 video switcher, FSR, Inc.

Two new video switchers, the V-1 video switcher, and the VA-1 audio-follow-video switcher, have been announced by FSR, Inc., 40 Commerce Rd., Cedar Grove, NJ 07009. The switchers are designed for audio and video applications, as well as for security installations. They can be remote controlled, and use RF relays, BNC connectors, and no-lug barrier strips. The units mount in their own tracks and work on 24-V dc power.

Digital Drive precision control option for 16mm film projection is now available with XP-550 portable xenon projectors and 1000 and 2000-W professional pedestal projectors, it has been announced by Elmo Mfg. Corp., 70 New Hyde Park Rd., New Hyde Park, NY 11040. The device can directly interface with most computers, making it possible to control precisely the speed at which the film is projected. An infinite number of 16mm projectors can be interlocked by a single program and kept in synchronization to within $1/166$ of a frame, whether running at a high-speed shuttle or at super-slow motion, forward or reverse. The digital drive option is available on new projectors, or it can be installed in existing models.



The SMPL system, Synchronous Technologies

The SMPL system, a computer-based automation system designed for use in small recording studios, has been announced by Synchronous Technologies, P.O. Box 14467, Oklahoma City, OK 73113. The system provides, in one package, the SMPTE time-code generator and

SMPTE Journal, July 1984

ENG



News team at UN Headquarters, NY.

or EFP.



Photo: Richard Howard

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5380/7380 film has exceptional color reproduction and retention, too. And properly processed, its color is intended to last up to a century. Even longer if carefully stored under recommended conditions.

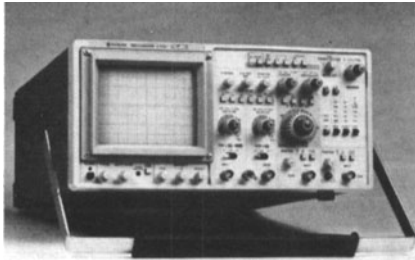
Next time you order prints for direct television transmission, or for video transfer and other special low-contrast applications, ask for 5380/7380. And get results of the highest quality.

For more information, call the Eastman Kodak Company Motion Picture and Audiovisual representative nearest you. Atlanta, 404-351-6510. Chicago, 312-654-5300. Dallas, 214-351-3221. Hawaii, 808-833-1661. Hollywood, 213-464-6131. New York 212-930-7500. San Francisco, 415-928-1300. Washington, D.C., 703-558-9220. Montreal, 514-761-3481. Toronto, 416-766-8233. Vancouver, 604-926-7411.



Eastman color LC print film 5380/7380. Ask for it.

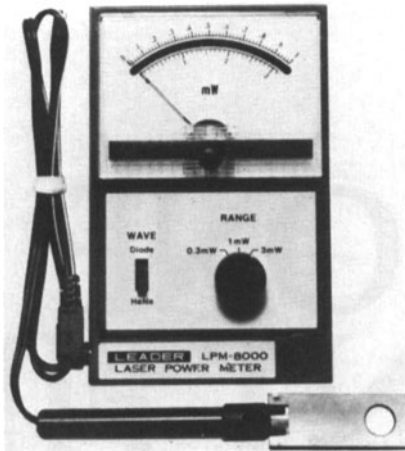
reader, autolocator, an automatic record in/record out insert editing system, timecode derived metronome, 24 tick/beat drum and synthesizer synchronizing system, and recorder remote control. The system is designed for use with multi-channel cassettes or open reel recorders.



V-1100 portable oscilloscope, Hitachi Denshi America, Ltd.

The V-1100, a 100-MHz portable oscilloscope, has been announced by Hitachi Denshi America, Ltd., 175 Crossways Park West, Woodbury, NY 11797. Features include a CRT readout that displays frequency counter and DVM functions as well as constant ground level. Using built-in microprocessor circuits, the V-1100 displays the measurement of voltage value between ground level and one or two reference cursors, and the time difference between two points. It then determines panel settings on the CRT screen. The V-1100

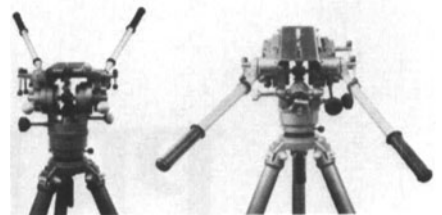
measures 13x6.3x16 in. and weighs 22 lb.



LPM-8000 laser power meter, Leader Instruments Corp.

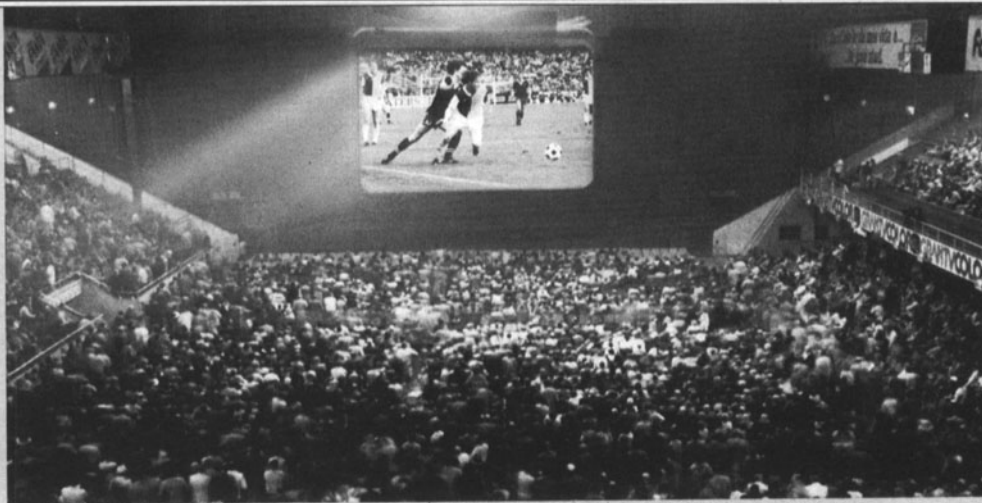
The LPM-8000 laser power meter, has been announced by Leader Instruments Corp., 380 Oser Ave., Hauppauge, NY 11788. The instrument is designed to offer a fast, convenient method of measuring the power output from the laser devices that are used in many compact audio disk and videodisk players. Two wavelengths and three power-measuring ranges are available. The laser power meter consists of a main body and a separate sensor connected by cable. It is small, lightweight, and battery-operated.

The 619 videocassette rewriter has been announced by Audico, Inc., 219 Crossen Ave., Elk Grove, IL 60007. Plug-in modules allow users to interchange rapidly between U-Matic, VHS, and Beta cassettes. For example, 60-min U-Matic cassettes can be rewound in less than 2 min. The operation is performed under safe, cool conditions.



Gitzo fluid heads, Karl Heitz Inc.

Two new Gitzo fluid heads, one for cameras up to 50 lb, and the other for cameras up to 100 lb, have been announced by Karl Heitz Inc., P.O. Box 427, 34-11 62nd St., Woodside, NY 11377. The heads have a fluid with silicon base which permits operation under extreme temperatures, from -75°F to +390°F. The panning and the vertical tilt can be locked rigidly into position. Three knobs disconnect the fluid motions of the panning drum and the two vertical tilt drums for rapid movements. Another knob adjusts the counterbalance for both front and rear tilts to the weight of the cameras.



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