

new products

(and developments)

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Further information about these items can be obtained direct 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.

Erratum: The Cross-Modulation Oscillator/Analyzer, a product of Sound Engineering, 71 Crescent West, Hadley Wood, Barnet, Herts, England, was described and illustrated in the February 1970 issue of the *Journal* (p. 172). The item stated erroneously: "Output level of the oscillators is up to -10 dBm max." The correct reading is: "Output level of the oscillators is +10 dBm max."

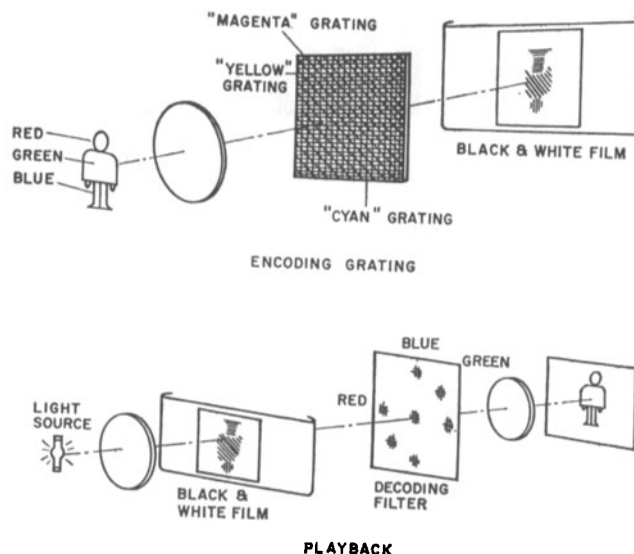
The GE/BAC, a computer-controlled system for automating television station operations, has been announced by General Electric Co., Schenectady, NY 12305. The system can control an entire day's programming. Manual override is provided to handle last-minute changes, such as news bulletins. The GE/BAC system uses a GE computer and GE broadcast switching equipment. It is designed in building-block, modular configuration for installation as a complete system or as a step-by-step process to complete technical control. The complete system includes a GE/PAC 30 mini-process computer, a GE DataNet 765 monitor display for preview of upcoming events and communication with the computer, a manual override panel and a GE TS-301 distribution switcher. Price of a typical complete basic system is about \$150,000.

A new color broadcast TV camera, Model BC-230, designed for studio and remote use, has been announced by Ampex Corp., 401 Broadway, Redwood City, CA 94063. The camera uses modular design and construction. Features include newly designed deflection yokes, integrated circuitry and three Plumbicon tubes. The BC-230 is capable of providing 100% amplitude response with 400-line resolution, SNR of 40 dB and a transient response factor of 2% or less. It is reported to produce studio quality pictures with scene illumination of 25 fc. The BC-230 is 9.5 in wide, 17 in high and 22.5 in long with the viewfinder. It weighs 77 lb. The base station fits in a standard 19-in rack 21 in high. The 0.5-in camera cable weighs 2 oz per ft. The BC-230 is priced at about \$57,500 including pedestal and supporting electronics:

Abtography, a method of color photography employing black-and-white film and black-and-white processing, has been announced by Abto Inc., 1926 Broadway, New York, NY 10023, a firm recently organized for the purpose of developing this method of color photography (*Journal*, p. 142, Feb. 1970). Abtography employs the principle of color separation. The three images are separated but are superpositioned coaxially on a single monochrome emulsion. The separation is accomplished in the film camera by passing the image through an ABTO encoder onto the film. The encoder is a single piece of glass with three gratings superpositioned and rotated with respect to each other. Each grating is made up of transparent lines of color, thereby simultaneously encoding the color information contained in the original scene. The black-and-white film contain-

A line color TV camera designated the PE-400 has been announced by General Electric Co., Schenectady, NY 12305. It is designed to improve picture quality of both outdoor events and indoor studio productions by reproducing high-contrast lighting conditions. It is reported to have the capability of reproducing more than three times the lighting contrast range of existing color TV cameras by means of the Auto-Trast control circuit. Other features include a built-in image enhancer with both horizontal and vertical aperture correction and a new crispening circuit, immunity to polarized light effects, use of color masking on all chroma channels and "extended red" lead-oxide pickup tubes in the red and luminance channels. New circuits are in the head and the new GE-TV-115 color encoder improves the signal-to-noise performance. Low-light-level performance is improved with full level output as low as 12.5 fc. The PE-400 is priced at \$80,500.

The TV-115 color TV camera system encoder, introduced by General Electric Co., Schenectady, NY 12305, can be used with three- and four-tube live and film color camera systems. The encoder incorporates a self-contained digital color bar generator, a self-contained burst flag generator and a self-contained test pulse generator for setup



ing the encoded color information is then processed in a standard monochrome film processor. Playback through a standard projector results in a monochrome image. However, a standard projector equipped with an ABTO decoder results in color images.

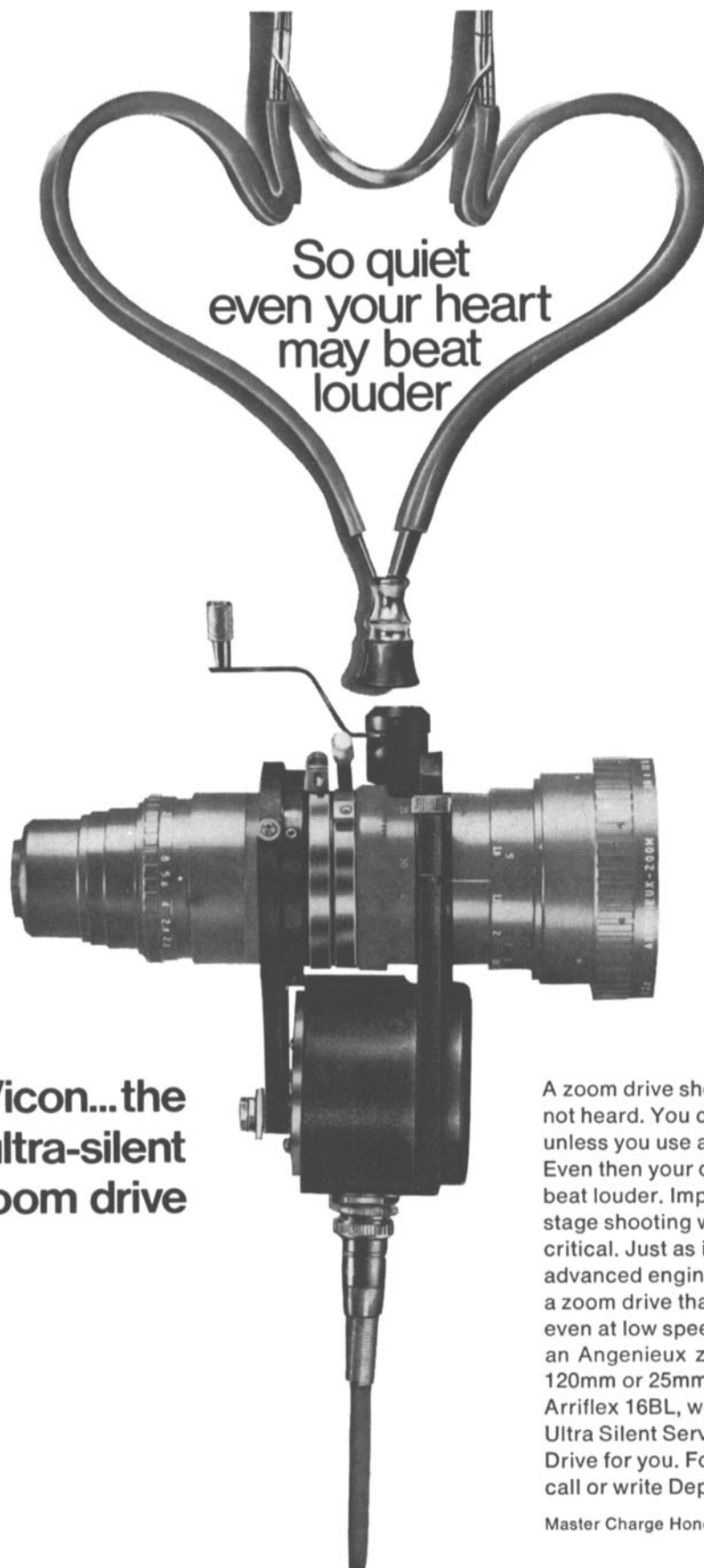
The ABTO decoder uses the principle of Fraunhofer diffraction to separate spatially the three encoded images which contain the recorded color information. The spatially separated images are then passed through the ABTO decoder where each is colored by a color filter.

The ABTO process is available to TV stations on a lease-license arrangement based on a per foot charge for exposed film. For the average station this is reported as probably amounting to between \$15,000 and \$45,000 depending on the use of film.

without a vectorscope. Features include a subcarrier notch filter which improves the signal-to-noise performance of the camera when operating at low light levels. Active circuit elements are accessible either on pullout modules or on the rear panel. Circuit modules, transistors and integrated circuits are plug-in for easy maintenance. The encoder is packaged in a single 19-in rack drawer, one rack unit high. Price of the TV-115 is \$3,600. The new encoder is incorporated in the PE-400 live color camera system.



A 22-lb live color camera designated the TE-201 has been announced by General



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Electric Co., Schenectady, NY 12305. The camera has a 17-lb clip-on viewfinder. The TE-201 is designed to be operable by nontechnical personnel and to produce professional-quality pictures down to low light levels. In addition to the built-in viewfinder, the camera system includes a 10:1 zoom lens, three 1-in lead oxide pickup tubes, 50 ft of camera cable and remote operator's control panel including a 9-in monochrome video monitor and the GE TV-115 color encoder. The price is \$29,605. A system including a vertical aperture corrector, waveform monitor and operator's console is priced at \$34,570.

The new Norelco PC-100 color TV camera has been announced by Philips Broadcast Equipment Corp., One Philips Parkway, Montvale, NJ 07645. In the new camera utilization of digital control techniques has made possible the use of small triaxial cable instead of conventional camera cable. Triaxial is about one-tenth the weight and significantly lower in cost than regular cable. The new ACT (anti-comet-tail) Plumbicon imaging tubes, used in the three-tube PC-100, provide an important improvement in the handling of highlights. Three electronic bays in the camera head, one for signal processing, one for deflection and one for power supply, contain the all-solid-state circuitry on 3-by 5-in plug-in boards. Some 86 digital signals are converted into analog camera control signals by a digital/analog converter card. Digital signals are multiplexed with the audio signals and transmitted to the camera on high-frequency carriers.

All video, audio, control signals and power are combined and carried on two of the three triaxial conductors. The outer triaxial conductor serves only as a shield. The PC-100 is priced at \$89,850.

The camera was described at the Society's Winter Television Conference in Atlanta in a paper by A. C. Cuomo, "A Digitally Controlled Color Television Camera to Meet Today's Operational Requirements," presented on January 30, 1970.

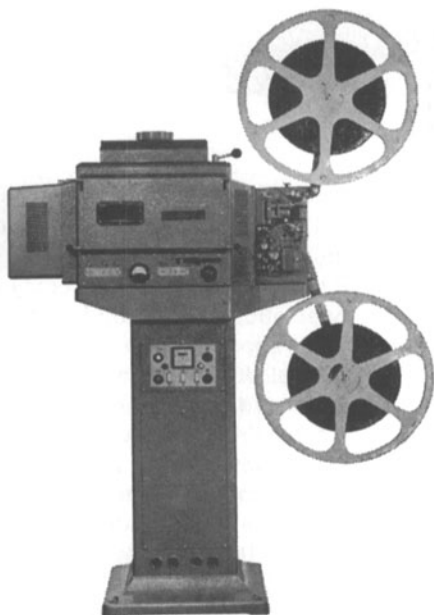


The Norelco PCP-90 Minicam portable color TV camera has been announced by Philips Broadcast Equipment Corp., One Philips Parkway, Montvale, NJ 07645. The camera is equipped with a digital control system that enables it to be operated with triaxial cable or with wireless by

microwave. In addition to live broadcast from a backpack by microwave or triaxial cable the PCP-90 can be used with a portable recorder to tape action for playback. In the wireless mode, control signals can be beamed from as far as 30 miles and the camera's transmission signals are beamed back. The camera produces a real-time color-composite signal and does not send separate color signals to its base station for processing, but does all signal processing in the backpack. The PCP-90 is priced at \$98,920.

The Norelco PC-70S-2, latest model in the PC-70 series of three-Plumbicon Norelco color TV cameras has been announced by Philips Broadcast Equipment Corp., One Philips Parkway, Montvale, NJ 07645. Features of the new camera include increased low-light sensitivity resulting from the use of new 48-dB FET preamplifiers and extended-red sensitivity Plumbicon tubes to provide faithful color reproduction and the capability of achieving special color effects by means of an optional nonlinear variable matrixing module providing infinite control over colors and hues. The PC-70S-2 can range up to 1,000 ft using a new "mini-cable" and up to 3,000 ft with standard color cable. It is priced at \$68,010.

A new TV camera tube called the silicon intensifier tube (SIT) has been announced by RCA Corp. The tube incorporates a special electronic light amplifier and a silicon target integrated circuit as a "retina"



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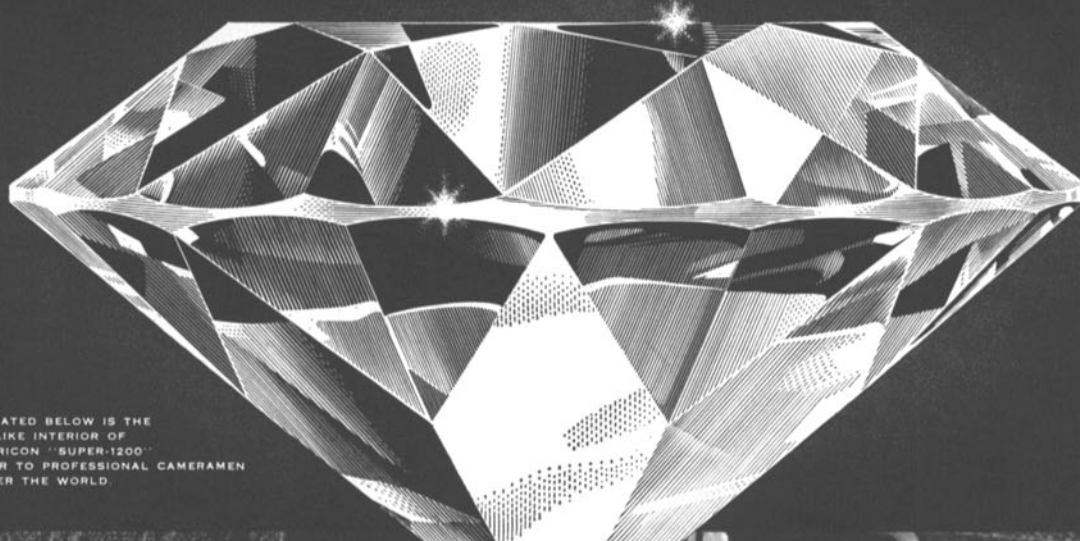
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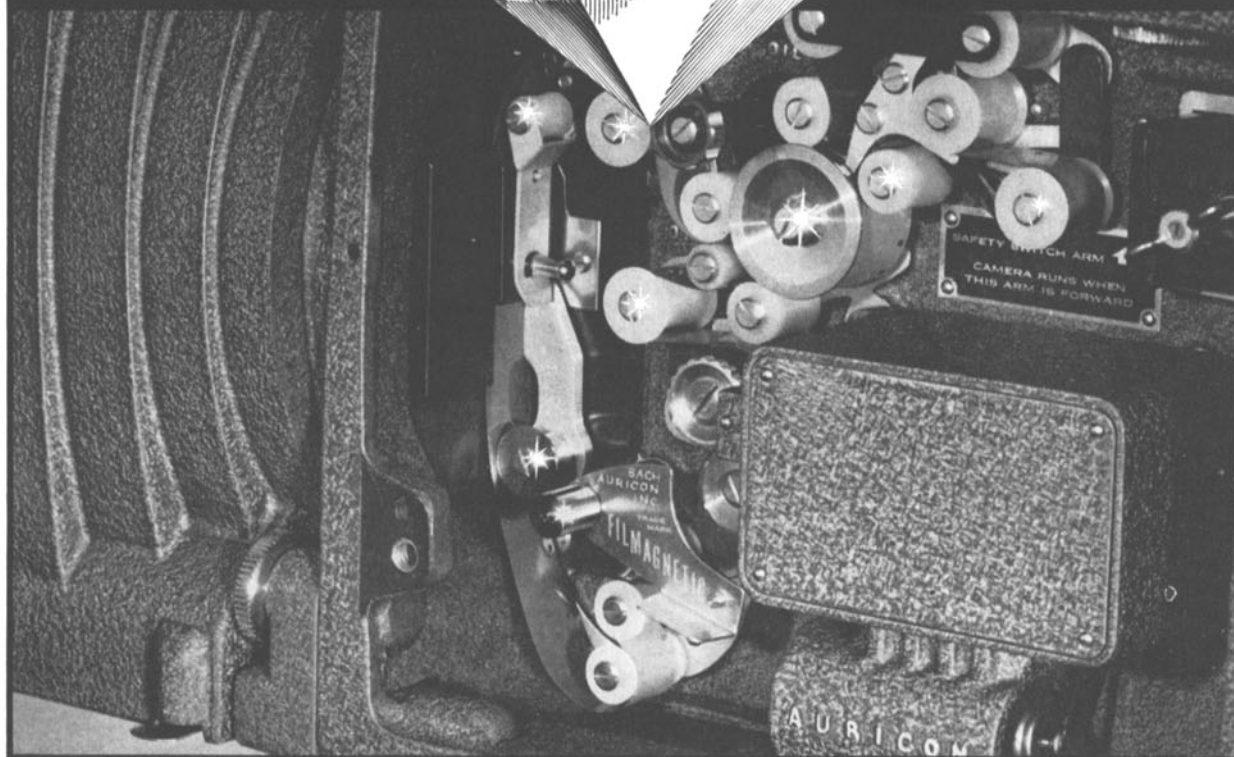
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which enables the tube to look directly into the sun without damage or to see in almost complete darkness. When only one stage of intensification is added to the SIT tube, a brightness magnification of 150,000 is achieved. It is reported that clear pictures can be obtained in a room illuminated only by the glow of a cigarette. The tube consists of a vidicon-type scanning electron gun and image intensifier section separated by a special silicon target with an integrated circuit array of more than 600,000 p-n junction diodes. The image intensifier section converts the light from the scene into a flow of electrons that is greatly accelerated and imaged on the silicon target. The target provides the gain which results in the ultrasensitive performance of the tube at low light levels. SIT tubes are now available on a development basis in three different diameters, 16mm, 25mm, and 40mm.

A new SEC (secondary electron conduction) camera tube has been developed with a burn-resistant target, it was announced by Westinghouse Electronic Tube Div., P.O. Box 284, Elmira, NY 14902. The element responsible for the tube's burn resistance is a fine copper mesh which serves as the mechanical support for the aluminum oxide signal plate and low-density potassium chloride layer in the SEC target. Other SEC tubes use an aluminum oxide film for mechanical support. The wire mesh protects the target when the tube is exposed to an intense light source

because the thermal capacity of the wire mesh is much greater than that of the standard aluminum oxide support layer. The initial rate of temperature rise is lower in the new target. Heat is efficiently conducted away through the mesh and the target reaches a lower maximum temperature than a target that relies on radiation cooling only. Improved resistance to burn is achieved with no loss in electrical performance.

A high-speed duplicator for color and monochrome broadcast videotape recordings, Model ADR-150, has been announced by Ampex Corp., 401 Broadway, Redwood City, CA 94063. The machine is designed for modular expandability to accommodate up to five slave reel systems, permitting duplication of from one to five copies in a single operation. Duplicates made on the ADR-150 can be played on any standard quadruplex broadcast videotape recorder and are interchangeable with all conventional transverse-oriented 2-in videotapes. All broadcast formats, including high-band and low-band color and monochrome and 525- and 625-line standards can be duplicated.

The duplicator uses a dynamic transfer system by which a specially formulated master tape is brought into direct contact with conventional blank transverse-scan video tape. The blank, or slave tape, assumes the arrangement of magnetic particles present on the master tape with insignificant degradation of video signals

on the master tape after repeated uses. The duplication process occurs in a magnetic transfer chamber located in the center of the tape paths on the ADR-150. Both master and slave tapes, which are loaded on separate reels, are threaded through the same transport area and brought into direct contact in the magnetic transfer chamber. Price range of the ADR-150 begins at \$79,950, depending on the modules employed.

The duplicator was described at the Society's Winter Television Conference in Atlanta in a paper by Charles P. Ginsburg, "Contact Duplication of Quadruplex Tapes," presented on January 31, 1970.

The TR-70C, a new high-band TV tape recorder, has been announced by RCA Corp. Extensive use of integrated circuits and new packaging techniques have made possible a new servo system that provides faster machine response and improved reliability. The new servo reduces tape "pre-roll" by a substantial margin, enabling the machine to produce stabilized color pictures in one or two seconds. Other features include a newly designed headwheel panel employing Alfecon II, a recently developed alloy, as magnetic head material. The machine has an automatic FM standards selector, record current optimizer, automatic stop cue and automatic warning and mode indicators. The TR-70C is priced at \$93,500.

A videotape recorder, Model VL-7404, specifically designed for program logging and verification by TV stations, has been announced by Ampex Corp., 401 Broadway, Redwood City, CA 94063. It can record up to 38 h of video programming on a 9.75-in reel containing 3,000 ft of 1-in video tape and it directly records video, audio and time information. It accepts a standard video input and can record directly from a studio's transmission output or from a regular TV tuner. The VL-7404 records continuous audio and every 32nd field of video information. It operates at a tape speed of 0.24 in/s in record or real time playback. The machine is 27 in long, 16 in deep and 12 in high. It weighs less than 100 lb. The price is \$5,900.

A cassette broadcast videotape recorder/-player that can play automatically up to 25 commercials or other programs ranging in length from 10 s to 6 min has been announced by Ampex Corp., 401 Broadway, Redwood City, CA 94063. The machine has two tape transports. While one transport is playing a cassette, the second cassette is automatically loaded and cued on the second transport. Each transport can rewind a finished program and cue up a new program in less than 10 s, permitting the system to play continuously a series of 10-s commercials, each recorded on a separate cassette, without a roll interruption between cassettes. Run-up time between activation of the play mode and the appearance of a color synchronous picture is 2/10 s. The transports operate at 15 in/s or 7.5 in/s and are vacuum loaded with tape from Ampex videotape cassettes. Up to 25 cassettes can be randomly loaded on a rotating storage carousel. The ACR-25 is a quadruplex system designed to



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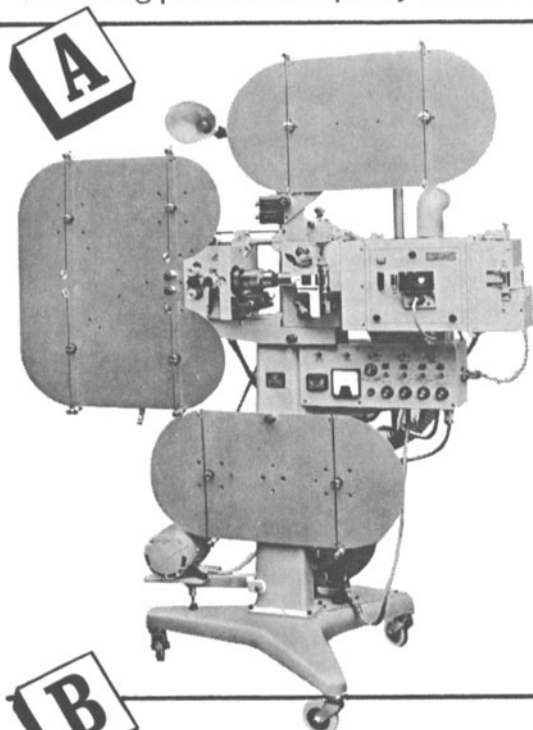
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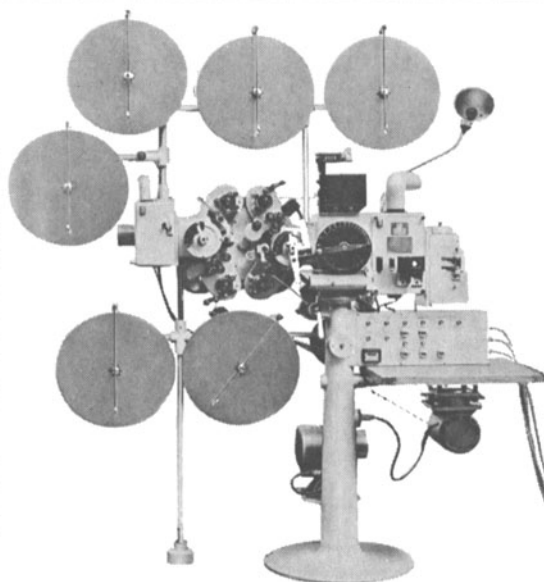
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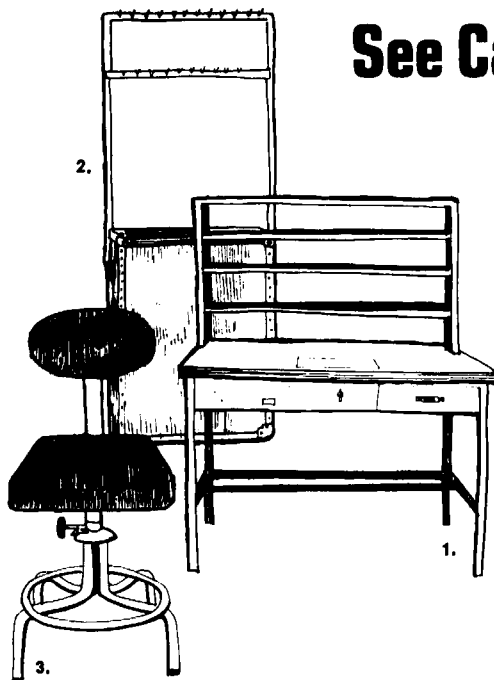
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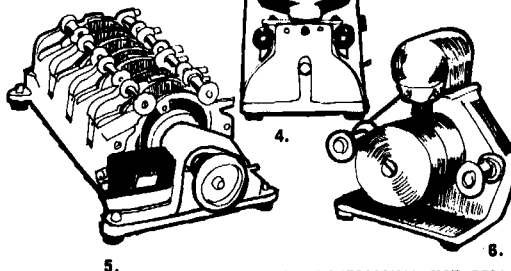
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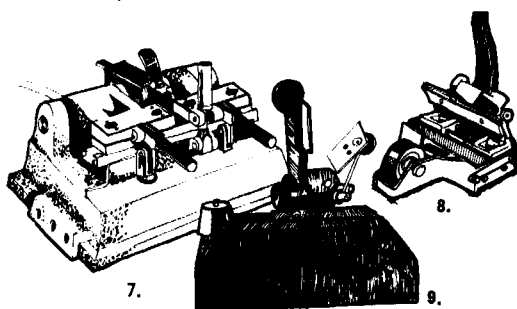
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record and play back conventional transverse-scan 2-in tape in all broadcast formats including high-band and low-band, color and monochrome and 525- and 625-line standards. It is priced at \$165,000.

The TCR-100, a videotape cartridge system which can reproduce in sequence as many as 22 cartridges of up to three minutes programming each, has been introduced by RCA Corp. The new system is capable of recording as well as playing back TV information and can be used to broadcast any combination of commercials, news features or other short subjects in a predetermined sequence. Each program segment is recorded on videotape completely contained in a molded plastic cartridge measuring about 2.5 by 3.5 by 5 in. The cartridges will be available with either one or three minutes of tape. The TCR-100 is programmed for a sequence by loading the cartridges into the belt-like changer in the order in which they are to be played. The sequence, which may consist of up to eight cartridges, is entered on a control panel and the play command given by a single pushbutton. The system will handle as many as nine sequences, or station breaks. The TCR-100 is priced at about \$89,500.

A "third generation" studio videotape recorder, Model AVR-1, has been announced by Ampex Corp., 401 Broadway, Redwood City, CA 94063. It is compatible with all previous Ampex recorders, including the VR-2000 color recorder series. Improved performance of the new recorder is achieved by the use of integrated circuits and state-of-the-art electronics. It can record nonsynchronous picture source material with minimum perceptible discontinuity in playback. Its output is continuously synchronized and it is automatically adjusted for maximum picture quality as soon as the play button is activated. A system of color-coded warning lights alerts the operator that a nonstandard condition or malfunction exists. The colors correspond to the urgency of the problem. Many operation and maintenance functions performed manually on other recorders are handled automatically by the AVR-1. The machine uses the new Mark IV editor which permits single-frame editing and automatic color framing which matches the phase of incoming video signals to that of the recorded signals. The new recorder is designed to be easily interfaced with computers used in automated programmers. Prices for the AVR-1 begin at about \$100,000.

A new film recording system, consisting of the FR-30 double film system, the TP-66 film projector and the PX-13 interlock motor drive and control, has been announced by RCA Corp. The FR-30 handles the soundtrack separately from the picture print. The audio is handled on sprocketed 16mm film to which sound is transferred from 0.25-in tape recorded at the scene. The FR-30 and the TP-66 projector are electrically interlocked when the film footage is broadcast. With the motor-drive system interlocking the picture and sound equipments, each machine is driven by its own synchronous motor.



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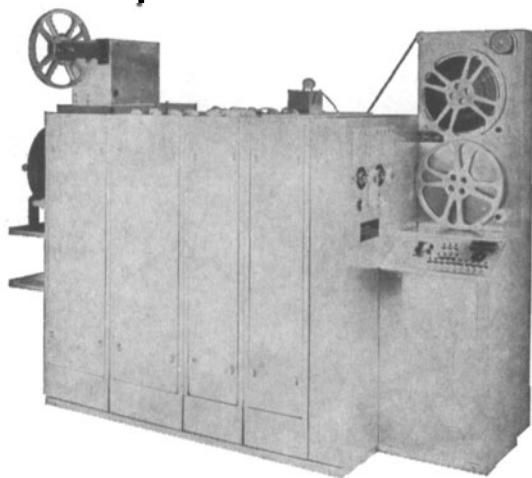


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The interlock motors are interconnected and energized only during run-up and run-down to assure frame-to-frame synchronism between picture and sound during start and stop operations. The FR-30 design permits switching from 16mm to 35mm film handling and back again in seconds. The system is intended especially for news broadcasts so that fast-breaking news stories can be put on the air without the distraction of an out-of-sync presentation. The FR-30 is priced at \$7,150. The TP-66 projector is priced at \$13,125 and the PX-13 interlock motor drive and control is priced at \$2,350.

Two new audio consoles are among new equipments recently announced by RCA Corp. The BC-15A is a self-contained five-mixer audio console for AM, FM, and TV applications. Features include push-button selection of input sources, Daven step attenuators, Mossman lever switches, a 10-W monitor amplifier, cue amplifier, muting relays, cue speaker and self-contained power supply. It is priced at \$1,495. The BC-18A is an eight-mixer audio console for AM, FM, or TV use. It has the same key features as the BC-15A and is priced at \$1,995.

Two new professional audio recorder/-reproducers (Model ABR-10 and Model ABR-15) with bidirectional capability have been announced by Ampex Corp., 401 Broadway, Redwood City, CA 94063. The machines have been designed especially for use in automated broadcast systems. The recorders accept reel sizes from 5 to 15 in in diameter. They are servo-controlled for time base accuracy and have a direct drive system for constant tape speeds from 15/16 in/s to 15 in/s regardless of power line variations. The new recorders are available in full- to quarter-track configurations in bidirectional and unidirectional versions. A playback unit is also available. Price range for the ABR series is from \$2,000 to \$3,800.



The Media Mix Programmer, a compact (10-lb), 27-channel, punched tape multi-media control has been announced by Spindler & Sauppe, Inc., 1329 Grand Central Ave., Glendale, CA 91201. The solid-state unit, which has a built-in, 1,000-Hz synchronizer, is designed to control three S&S Dynamic Dissolve Systems as well as nine pieces of auxiliary equipment, such as other audio-visual equipment, lights, curtains and powered displays. Eight-hole computer tape is used and with a combination of holes 27 channels are produced, six for each of three slide dissolve systems and nine auxiliaries. Each dissolve system can be programed for four different dissolve speeds, the instantaneous "Cut," the 2.5-s "Medium Dissolve," the 10-s "Slo-Dis-



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Last but not least, 7252 is probably going to mean greater efficiency in the lab. That's because it's designed for the new ECO-3 process which is more compatible with the popular ME-4 process.

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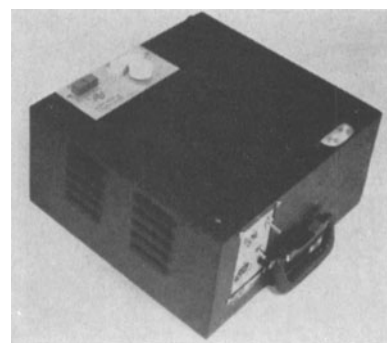
solve" and the infinitely variable "Lap Dissolve" in addition to the special-effects functions of "Standby" and "Alternate." Each of the nine auxiliary channels can be programmed for momentary pulses or for on-off sequences. Both local and remote manual controls are available and the built-in synchronizer makes possible automated presentations. The Media Mix Programmer is priced at \$1,495.

A 35-kW VHF television transmitter, the TT-35FH, has been announced by RCA Corp. The transmitter has a solid-state design that includes only three tubes in each of the two complete 17.5-kW transmitters making up the system. Features include automatic switching to the "hot spare" exciter, should there be a failure in the "on air" unit. In this event, the station remains on the air with little noticeable change in signal over the primary coverage

area. Since the transmitter uses only six tubes the demand for cooling air is below that of other transmitters. The TT-35FH incorporates such new techniques as diode visual modulation which increases linearity and reduces change in color information for more stable full-fidelity color pictures. It is capable of remote control. The price is \$287,000.

A new Norelco UHF 55-kW transmitter, Model PTU-55A, has been announced by Philips Broadcast Equipment Corp., One Philips Parkway, Montvale, NJ 07645. The transmitter is designed for both monochrome and color transmission and for unattended remote control operation. Features include continuous monitoring by solid-state logic and use of long-life vapor-cooled klystron power amplifiers. The transmitter is designed for use singly, in paralleled pairs or in a passive, standby

configuration. The PTU-55A is priced at \$314,000.



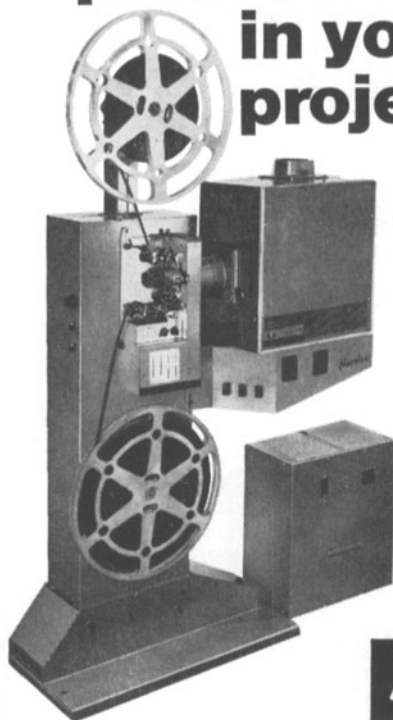
An instant playback, slow-motion and stop-action video disc recorder that can be plugged into any closed-circuit or video monitoring system has been announced by Newell Industries, Inc., A/V Equipment Div., 795 Kifer Rd., Sunnyvale, CA 94086. Designated the 1310 Video-Disc Recorder, the unit records a 10-s or 20-s segment direct from a camera or from a videotape recorder for immediate playback at speeds adjustable from 2 frames/s to 60 frames/s. During playback, any one of 600 frames can be stopped and held indefinitely for study or analysis. The recording surface of the 1310 is a highly polished disc. Pushbutton controls are designed so that if the operator pushes the wrong button the operation of the recorder will not be affected. The recorder weighs 34 lb and is housed in a ruggedized portable case. It is priced at \$2,995.

The PDR camera, a new pilot display recorder, has been announced by Teledyne Camera Systems, 131 N. Fifth Ave., Arcadia, CA 91006. The camera accepts 50 ft of 16mm film. It operates at 16 frames/s with a pulse rate of 2 pulses/s. The camera weighs 2 lb 12 oz and the lens focal length is 25mm f/1.9. A reflex mirror is supplied with each camera. The price is \$2,500.

The IRT Color Monitor Comparator, an illuminant-D color monitor comparator, has been developed by the Institute of Radio-Television, Munich, Germany, and introduced in the United States by Television Equipment Associates, Box 1391, Bayville, NY 11709. The comparator (handheld or tripod-mounted) is presented to the face of the TV kine. The operator, looking through the device's ocular, observes a circular field where half of the area is a direct view of the kine face and the other half the illuminant-D reference produced by the light emitted from a bulb. The light is filtered through conversion filters and stabilized by a control to a constant current. A neutral wedge filter is positioned in front of the reference area to change brightness in the comparator from a peak white at 19 fL to a low-light brightness at 0.95 fL. The operator can adjust the monitor's screen and gain control that the kine white balance will match with the comparator in both high light and low light. It is priced at \$500.

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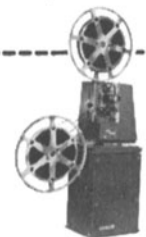
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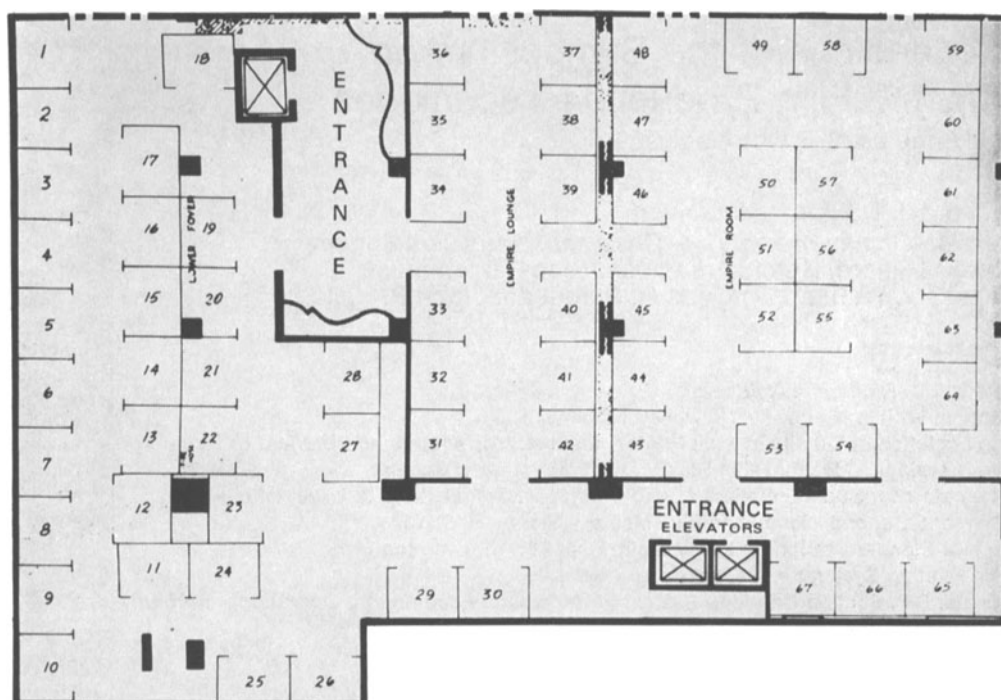
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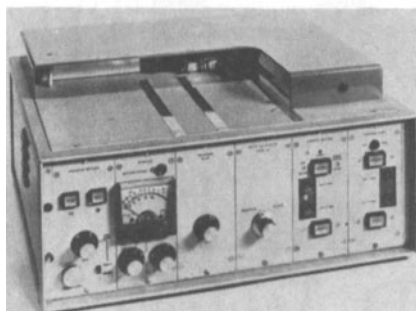
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silent automatic control of speech asymmetry, has been announced by CBS Laboratories, High Ridge Rd., Stamford, CN 06905. The automatic peak phasing function of the modified Volumax continuously monitors the polarity of the asymmetry of a broadcast during split-second pauses in speech programs, thus eliminating obtrusive clicks resulting from indiscriminate switching. Volumax Model 4000 enables the broadcaster to turn the characteristic asymmetry of speech waves to his advantage by ensuring automatically that the highest amplitude peaks always modulate the transmitter, allowing maximum program power for each watt of carrier power. Solid-state packaging techniques have reduced the 19-in wide rack

mount to a height of less than two inches. Volumax Model 4000 is priced at \$725.



Cuemaster audiotape recording and playback equipments manufactured by

Consolidated Electronics, Sydney, Australia, have been introduced in the United States by Television Equipment Associates, Box 1391, Bayville, NY 11709. Features include heavy-duty deck construction with full-travel pressure roller for ease and simplicity of operation. Full monitoring with meter and headphones is provided on the recording machines. Both playback and recording machines are of solid-state design and some use silicon semiconductors. The price range is from \$630 to \$7,400.

The CVM-1200U Trinitron, a portable color monitor/receiver, has been announced by Sony Corp. of America, 47-47 Van Dam St., Long Island City, NY 11101. The monitor employs a single gun to produce three electronic beams, one for each primary color. Instead of the usual shadow mask, the Trinitron uses an Aperture Grill that permits more electrons to reach the screen to produce a picture of greater brightness. The picture tube measures 12 in diagonally. Other features include automatic adjustment circuits, independent AGC pulse oscillator from the deflection circuit, three independent output connectors and a built-in 75-Ω output connector for single or multiple monitor operation. The CVM-1200U Trinitron is priced at \$595.

A low-light-level Image Isocon Camera has been introduced by Maryland Telecommunications Inc., Cockeysville, MD. The camera uses the isocon tube manufactured by English Electric Valve Ltd. Sole distributor in the United States is Visual Electronics Corp., 356 W. 40 St., New York, NY 10018. The camera is designed for use in applications where light levels are as low as 10^{-6} fc. A significant increase in sensitivity may be realized in static applications permitting integration of charge buildup. The MTI isocon tube has a long life and is burn resistant. It is available in a variety of photocathode surfaces with different spectral responses and a fiber-tensifier for extremely low light level pickups. Price of the camera is approximately \$12,000; Type P880 isocon tube is priced at \$4,125.

An experimental video tape featuring a new "high energy" magnetic oxide formulation capable of producing greater signal output for crisper picture quality has been announced by 3M Company, 3M Center, St. Paul, MN 55101. A new ferric oxide formulation and dispersion in the "high energy" segments is reported to show a 6-dB increase in SNR over other videotapes. The new tape is designed especially for mastering and duplicating applications.

3M Company also announced a new 2-in videotape designed to reduce color and high-frequency dropouts featuring new lubrication and binder dispersion system.

The Auto-Light, an automatic light control unit designed specifically for use with Marconi Film Equipment Type B3402, has been announced by Marconi Communications Ltd., Broadcast Div., Marconi House, Chelmsford, Essex, England. The unit

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Proceedings of the Symposium on Super 8 Film Production Techniques

Los Angeles, 2-3 October 1969

Richard J. Goldberg, *Chairman*

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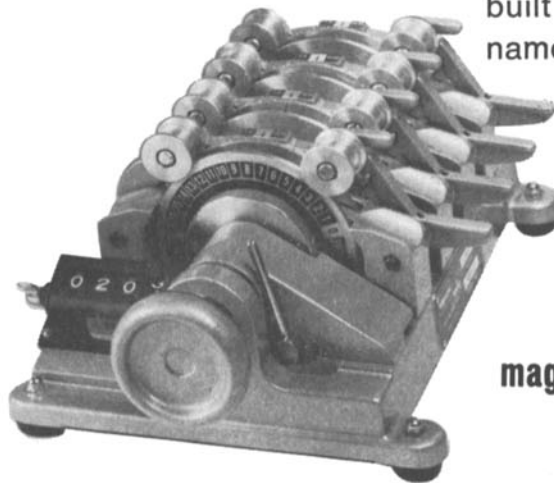


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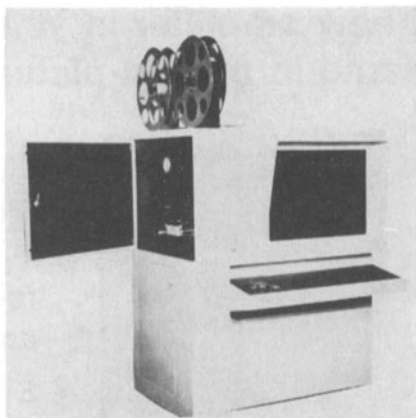
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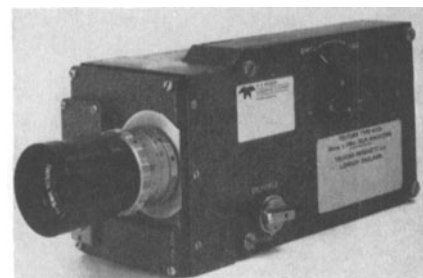
Silent Pellicle Reflex Conversions for the BNC Mitchell camera are available from F&B/Ceco Industries, Inc., 40 Kero Rd., Carstadt, NJ 07072, according to terms of an agreement between Arthur Florman, President of F&B/Ceco Industries, and Ed DiGuilio, President of Cinema Product Development Co., Hollywood. The SPRC conversions are priced at \$6,000 each.



A film viewing machine with a 3,000-ft film capacity, called Model V/R Film Reader, has been announced by Traid Corp., 777 Flower St., Glendale, CA 91201. The size of the machine permits a huge reel of film, such as those used in flight simulators, to be run through the viewer mechanism in the original, uncut version. The reader can accept films in 16mm, 35mm and 70mm, running either emulsion in or emulsion out. The 1,000-ft internal storage space makes it possible to run shorter records within the machine case. Motor take-up drives can be quickly changed from internal to external positions by means of a switch. The V/R-100 Film Reader is priced at about \$17,000.

A new heat-developing microfilm used for duplication of computer microfilm has been introduced by Xidex Corp., 305 Soquel Ave., Sunnyvale, CA 94087. The microfilm, called Xidex-HD is based on light-scattering principles. It is developed with heat and requires no chemicals or darkrooms for processing. It is compatible with all presently available heat-developing processors; normally processed it is stable up to 160 °F. The film is available with 3- or 4-mil polyester bases

and in special sizes upon request. It has a diffuse density gamma of 0.35 and a projection density gamma of 3.00. Xidex-HD has a 1.30 log exposure scale and provides over 200 lines/mm resolution. Spectral sensitivity is in the near ultraviolet with a maximum around 3900 Å.



The Telford 16mm Recording System Type N, a medium-speed instrumentation camera system, has been announced by Teledyne Camera Systems (formerly D. B. Milliken Co.), 131 N. Fifth Ave., Arcadia, CA 91006. The system offers a wide variety of sampling rates from pulse mode to 150 frames/s. An optional data chamber with 16 gallium phosphide lamps to provide digital timing adjacent to the picture frame is available. Displacement magazines with 50-, 100-, 200- and 400-ft film capacity are also available. The camera can also be fitted with an underwater housing accepting a 200-ft magazine with built-in rechargeable batteries. Type N system is priced at \$900.

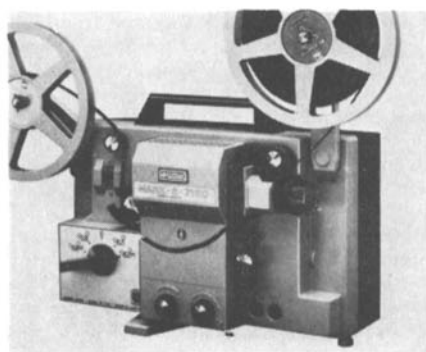


The Timelapse Super 8 Analysis System designed especially for documentation and surveillance has been announced by Instrumentation Marketing Corp., 830 South Mariposa St., Burbank, CA 91506. The system includes a self-powered camera with a 5:1 zoom lens, reflex viewing and auto-exposure control. It operates at two speeds of one picture every two seconds or one picture every four seconds. Other speeds are available. The system includes a remotely controlled flickerless automatic threading projector with single-frame viewing plus speeds ranging from 0.5 frames/s to 54 frames/s both forward and reverse. The camera operates unattended and provides continuous recording of up to eight hours' events on two conventional film cassettes. The system is priced at \$1,995.

The Bolex 160 Macrozoom, a new super 8 camera designed for flexibility and reli-



ability, has been announced by Paillard Inc., 1900 Lower Rd., Linden, NJ 07036. The camera has a power zoom and also has a manual zoom control. Focusing is from one inch to infinity. The power zoom is driven by motor batteries. Focusing is through the viewfinder which has a corner-to-corner corrected image and coincident image rangefinder over the entire area of the viewfinder. The camera can film at 18 frames/s, 24 frames/s for sound and 36 frames/s for slow motion and built-in single frame. A through-the-lens light-metering system is controlled by a CdS resistor. The Bolex 160 includes a Multi-trix that can be used as a built-in titler. The camera is priced at \$300.



Three new movie cameras and two new projectors have been announced by Eumig (U.S.A.) Inc., 101 W. 31 St., New York, NY 10001.

The Viennette 3 is a super 8 automatic zoom reflex camera with a zoom range from 9 to 27mm. It is priced at less than \$140.

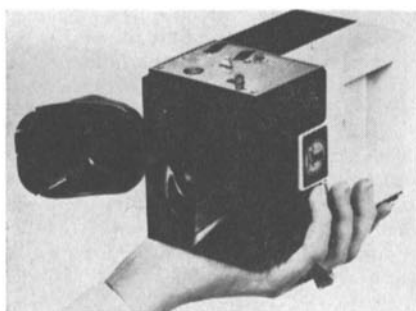
The Viennette 5, also fully automatic, has a Eumig 14-element Vario Viennar $f/1.8$, 8 to 40mm zoom lens. It is priced at less than \$230.

The Macro Viennette 8, a new 8:1 fully automatic zoom reflex movie camera, has an $f/1.8$, 7 to 56mm Macro Viennar zoom lens which focuses from infinity to 0, utilizing the full zoom range. It is priced at under \$320.

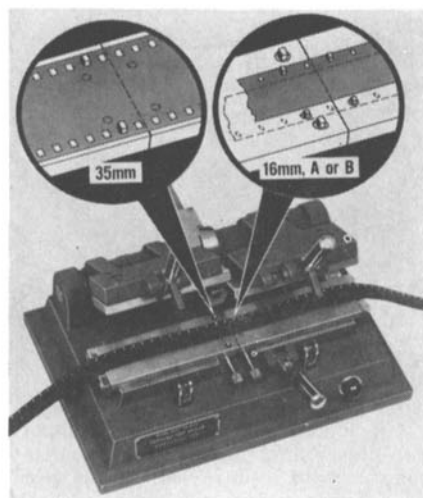
The Mark-501 dual 8 projector uses the Eupronet $f/1.6$, 15 to 27mm zoom lens. It is priced at less than \$105.

The Mark-S-712 D is a new dual 8 sound projector. It is priced at less than \$280.

A super 8 sound projector, Model 4600, designed specifically for individual viewing has been announced by Rheem Manufacturing Co., 400 Park Ave., New York, NY 10022. The projector is battery-operated and uses super 8 magnetic sound cas-



ettes. It can be handheld or mounted on a stand. The projector measures 5.75 by 3.25 by 4.5 in. No screen is needed and the sound level is controlled by a dial. Snap-in continuous loop cartridges provide up to four minutes of sound motion pictures at 24 frames/s. Longer running time is possible at 18 frames/s. The projector is intended for use in self-paced instruction, on-the-job training, and similar applications. It is priced at \$89.95.



A new professional portable hot splicer, Model 1635, has been announced by Maier-Hancock Sales, Inc., 14106 Ventura Blvd., Box 5135, Sherman Oaks, CA 91413. The machine accepts 35mm and 16mm A or B wind, sound or silent. It has two fixed pins for 35mm and two sets of retractable pins for 16mm A or B wind. Features include a built-in life-time carbide scraper blade that springs back out of the way when the scraping operation is completed, hardened chrome steel cutter blades and a narrow, low-visibility weld at the frame line. The price is \$399.

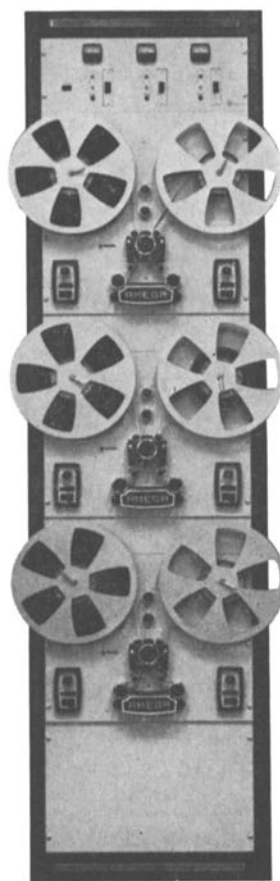


Printing machine power supplies and automatic lumen output control systems manufactured by RAMtronics have been announced by Carter Equipment Co., 232 South Glasgow Ave., Inglewood, CA 90301, distributors. A solid-state dc power supply is available with or without a light-sensing servo-feedback system which continually monitors the printing lamp and

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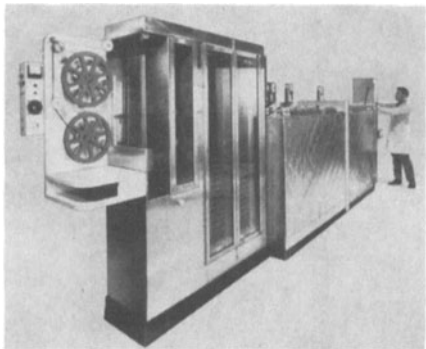
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modulates the light voltage to maintain a predetermined light level. The power unit is designed to be light and compact and the hermetically-sealed light sensing cell has internal ovens to maintain constant temperature and eliminate fatigue or drift. The units are for use with lamps ranging from 500 to 1,200 W and input power of 206 or 230 V \pm 10%, 60-Hz single phase. The units can be installed on all printers. Special adapter kits are available for Bell & Howell, Peterson and HFC printers. The price range is from \$980 to \$1,592.



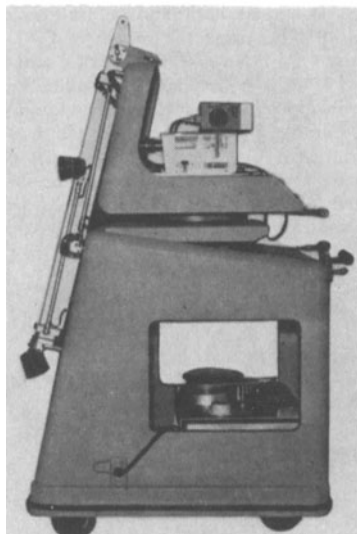
A new line of film processing equipment for color and black-and-white has been announced by Bell & Howell Professional Equipment Div., Dept. 8728, 7100 N. McCormick Rd., Chicago, IL 60645. The units are equipped with automatic replenishment systems controlled by solid-state circuitry. Two types of drive systems are available — the conventional spring-centered-roller and the wobble-roller bottom drive. Soft-touch or flat-tire rollers can be fitted for specific applications. Signal lights on the control panel signal changes in the supply system and enable the operator to maintain constant monitoring of the Processor's operation. Factory-set thermoregulators control the chemistry temperatures. Prices range from \$4,000 for compact Micro-Film processors to \$70,000 for high-speed, combination motion-picture processing machines.

CR 100 Cine Color Reversal Chemistry, primarily designed for use in CineTel Minicolor and Colormaster motion-picture film processors, has been announced by FR Corp., a subsidiary of Technology, Inc., 951 Brook Ave., Bronx, NY 10451. FR cooperated in the development of the new chemistry with the Westwood Div. of Houston Fearless Corp, which has also been acquired by Technology, Inc. (Dayton, OH) as a wholly owned subsidiary. Westwood is now known as CinTel Corp.

The CR 100 is reported to work at a speed about twice that of conventional chemistry. The Minicolor and Colormaster film processors have been developed to operate at about twice normal speed for use with the CR 100 chemistry.

A torque analyzer that measures the parasitic hub torques generated by the assembly variables of the tape and reels in twin-hub, four-track tape cassettes has been announced by Minnetech Labs, Inc., 8115 Tenth Ave. North, Minneapolis, MN 55427. The analyzer can measure the maximum friction torque of the full reel and the friction torque of both reels to-

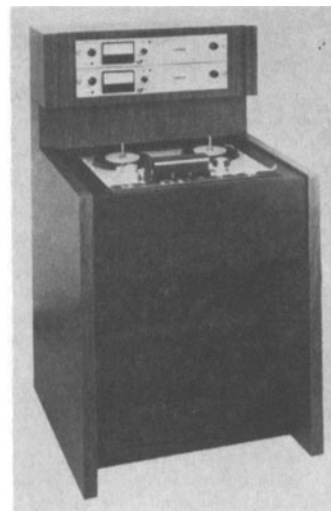
gether at the full reel hub. The machine has a low-inertia drive and brake system to ensure that only cassette performance is measured and that dynamic, intermittent torque conditions are not damped out. The meter on the amplifier has a range selection from 0-25 to 0-100 gcm. Charts, oscilloscopes and other recording devices can be connected to the amplifier output to display the high-resolution dynamic condition of cassette torque. Price range is from \$1,750 to \$2,475.



The TV Dolly-Lite, Model T-007, described as a self-contained portable TV studio, has been designed by Dolly-Lite Systems Div. of Super Mold Corp., P.O. Box 790, Lodi, CA 95240, for educational and industrial applications. The Dolly-Lite includes a cart-dolly camera support with provision for mounting closed-circuit cameras up to 70 lb in weight with space for a separate 5-in monitor beside the camera. A lower shelf is used to carry a videotape recorder or accessory equipment, a lighting and microphone boom fitted with a microphone bracket and five 3200-K quartz lights mounted on boom crossarms. The lighting system is mechanically locked to the camera so that with pan, tilt, dolly and truck movements, the same lighting pattern is maintained over the area being photographed. A single ac cable to 117-V outlet supplies power for all equipment and lights. The T-007 will accept all standard black-and-white vidicon cameras to 70 lb and all portable videotape recorder units. The Dolly-Lite is priced at about \$2,295.

The D3 Dolly and T10 Elevator Tripod, designed as lightweight TV support equipment, have been announced by Innovative Television Equipment, 11661 San Vicente Blvd., Los Angeles, CA 90049. The dolly is a lightweight unit with a load capacity of 300 lb. Each dolly leg has a 4-in diameter caster with brake. Each caster can be set for free swiveling or can be indexed for tracking by adjusting spring-loaded pins. Locking screws are provided for tripod leg attachment. The dolly is used in conjunction with the elevator tripod, which has a load capacity of 165 lb. The center elevator column utilizes rack-and-pinion and worm-and-worm gear of 5:1 ratio for

smooth, positive drive. Locking grooves are provided on leg extensions for attachment to the dolly. The D3 Dolly is priced at \$125 and the T10 Tripod is priced at \$225.



A new series of master audiotape recorder/reproducer systems with Edit-O-Matic control has been announced by Vega Electronics Corp., 2115 De La Cruz Blvd., Santa Clara, CA 95050. Features of the new 800 series include back-lighted pushbutton controls on the tape transport for ease of identifying all modes of operation. Control circuits, plug-in relays, power supply and oscillator are printed circuit boards mounted under the transport with adjustments and test points readily available for maintenance, even while in operation. The Edit-O-Matic permits "hand-free" edit and cue operation with foot pedal control. Electronics are all solid-state circuitry. A number of different head stacks and electronic configurations for multiple-track recording or reproduction are available. Prices begin at \$1,945.

The Limpet camera mount has been announced by Alan Gordon Enterprises, Inc., 1430 N. Cahuenga Blvd., Hollywood, CA 90028. The British-made camera mount can be attached to almost any smooth, nonporous surface in a horizontal, vertical or in-between position. Three suction cups, operated by levers, make it possible to fix a camera to the outside of a motor vehicle or window. The Limpet can support up to 40 lb. It is priced at \$895.

A new gaffer grip with a 0.625-in stud to accept most professional lights has been announced by Birns & Sawyer, Inc., 1026 North Highland Ave., Los Angeles, CA 90038. The new gaffer grip has rubber teeth and is designed as a heavy-duty accessory to clamp on chairs, pipes, doors, beams or anything firm enough to use as a solid support. It is priced at \$9.70.

The KingKlapper, a compact audio and visual clapboard with an integral signal generator and synchronizing light, has been announced by Alan Gordon Enterprises, 1430 N. Cahuenga Blvd., Hollywood, CA 90028. The generator and light are powered by a drycell battery housed

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within the KingKlapper. The clapboard measures 10 by 7 in and it can be secured to the casing of Nagra or similar recorders to provide silent scene slating. It is priced at \$150.

Specialized display screens, called Chromascreen, for use with film-based rear-projection screens, have been announced by Panelgraphic Corp., West Caldwell, NJ 07006. Chromascreen is an arrangement of microscopic translucent particles oriented in solution and then cast as a film onto a clear, rigid substrate and permanently cross-linked by a thermo-setting reaction. The rear-projection screen is durable and capable of diverging the transmitted light rays in a predictable manner. The company plans initially to produce screens for information retrieval and microfilm readout and for educational and industrial applications.

A compact electret cardioid condenser microphone, Model ECM-22, has been introduced by Sony Corp. and announced by Superscope, 8150 Vineland Ave., Sun Valley, CA 91352, exclusive U.S. distributors for Sony tape recorders. The microphone is equipped with a swivel-mount stand adapter, wind screen and vinyl case. A three-position switch turns the microphone on or off and selects either flat frequency response or a response that is "rolled-off" below 200 Hz. The ECM-22 uses a permanently polarized electret capsule to eliminate the requirement of a

polarizing voltage, a major source of noise in condenser microphones. It weighs 4.6 oz (without the cable). The price is \$99.50.

The Introductory Electronic Color Kit, designed to demonstrate the phenomenon of subjective color on black-and-white television screens, has been announced by Color-Tel Corp., 13720 Riverside Dr., Sherman Oaks, CA 91403. The kit contains a demonstration videotape, a compensating filter and an instruction book. The demonstration tape provides a variety of specially recorded scenes which are perceived in color on any monochrome TV monitor. The compensating filter can be temporarily positioned in front of the cathode-ray tube of the monitor to reduce the high (bluish) color temperature of the regular P4 phosphor. Instructions are given for making experimental black-and-white film and videotape which, when projected or played back, appear in subjective color.

The HFE Model 30 camera shutter synchronization tester has been announced by High Frequency Engineering Co., 2626 Frontage Rd., Mountain View, CA 94040. The unit, used for testing, adjustment and calibration of camera shutter contacts and external solenoid synchronizers, is a compact, bench-top instrument containing adjustable delay circuits and a xenon flashtube located at the top of the instrument behind a translucent diffusing screen. Two delay ranges are supplied, one

for zero delay and the other for a variable calibrated delay of 3 to 35 ms. Standard flash duration of the 1 W/s flash is about 1 ms with a 1-s recycling time. Life expectancy of the xenon flashtube is 10⁶ flashes. The instrument is priced at \$80.

Acrylic plastic filters used to convert window light to tungsten or to cut down the intensity of daylight coming through large windows has been announced by Alan Gordon Enterprises, Inc., 1430 N. Cahuenga Blvd., North Hollywood, CA 90028. The filters are available in Wratten 85 or ND 3, 6 and 9. The filters are made as stiff plastic sheets either 4- by 6-ft or 5- by 8-ft and 0.125 in thick and they can be nailed up or cut to size. The 5- by 8-ft filters are priced at \$125.

Kits for making overhead projection transparencies have been announced by Charles Beseler Co., 219 South 18th St., East Orange, NJ 07018. Each kit is designed to give the user a selection of materials which he can use to make his own overhead transparencies. Various types of kits are available including the Vu-Graph Materials Kit (\$9.95) which contains a minimum of items to make transparencies, the Basic Starter Kit (\$45), the All-Purpose Writing Kit (\$60), the Intermediate Starting Kit (\$75) and others.

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