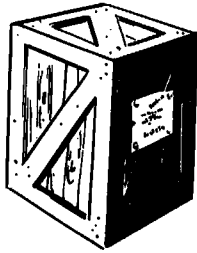


new products

(and developments)



.....
 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.

The Gretag 5070 Eidophor, announced by Gretag AG, P.O. Box CH-8105, Ragensdorf, Switzerland, in December 1970, is an improved control layer projector for large, high-intensity, real-time color displays on screens up to 40-ft wide; It is compatible with international color television standards. The basic technique is the same as in previous Eidophor projectors, i.e., a high-intensity light source and liquid control layers are combined with a number of specific optical elements to form a dark-field projection system, a light-control configuration based on the phase contrast principle. The

control layer is a thin film of oil with specific physical properties. The control layer provides a clean separation into independent image generation and high-intensity light source which eliminates need for compromise between brightness, resolution and contrast. The 5070 Color Eidophor utilizes essentially three mechanically integrated projection channels with individual control layers, electron guns and mirror bar systems for the red, green and blue picture channels. A single 2.5-kW xenon arc lamp is combined with a system of dichroic filters and mirrors which select the red, green and blue primaries for the individual channels. Picture registration between the three channels is controlled and automatically maintained by a built-in servo system. Further control circuitry is used to maintain consistent color balance and fidelity by tracking alignment of the three transfer functions.

Apart from the light source with its three-color illumination optics, the optomechanical system includes three removable vacuum vessels which accommodate the concave mirror, the oil layer with the devices necessary for its continuous application to the mirror, a thermostatically regulated heater for close control of its viscosity and indexing electrodes for the automatic color registration servo. Each vessel is connected with an electron gun and all these units are tied to a common vacuum equipment consisting of a rotary fore-vacuum pump, a high-vacuum diffu-



sion pump and some control and safety circuitry. The equipment also includes a central cooling blower with intake filter and appropriate air ducts.

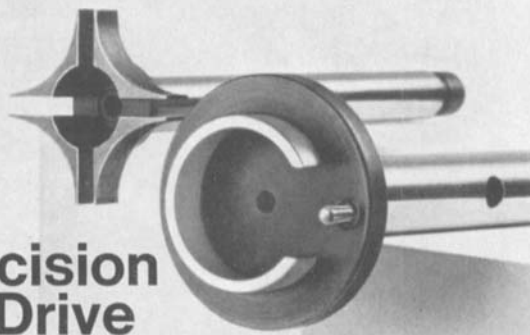
The Gretag 5070 Eidophor will be commercially available in the last half of 1971, the announcement stated.

Charge-coupling, a recently discovered semiconductor principle, is used in a solid-state device developed at Bell Laboratories for electronically "reading" graphic material. The device can be used to scan print or photographs line by line and convert variations in light intensity into an electrical signal. Transmitted to a remote location, the signal can reproduce an image of the original with high resolution. The imaging device is a silicon chip oxidized on one surface with a linear array of 288 electrodes deposited on top of the oxide. Electrodes on the device operate in groups of three and every third electrode is connected to a common conductor running the length of the device. The region under each three-electrode group serves as one light-sensitive element for a total of 96 elements.

On operation, the lens focuses an image of the document onto the surface of the silicon chip. Light from the document causes minority carriers or negative charges to be generated within the silicon. More charges are generated where the light is brighter; fewer where the light is less bright. In each element, the center electrode is connected to a more positive voltage with respect to the silicon than the other two. Charges generated by the light near that element collect at the surface of the silicon under the center electrode. Since the number of collected charges at each element is proportional to the light flux falling on the silicon at that position during an accumulation period, the groups of charges are transferred along the surface of the silicon by successively applying a more positive voltage to the electrode next to the one holding the charge, while decreasing the voltage on the electrode over the charge packet. This causes the packet to move from under one electrode to under the adjacent electrode. This transfer process, called charge coupling, is repeated until each charge packet has passed along the array of electrodes to the end of the device.

When they reach the last electrode, the packets of charge are collected by an output electrode, forming an electrical current whose analog variations represent variations in reflected light intensity

available now --



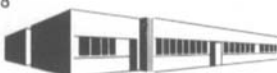
high precision
Geneva Drive
 components & assemblies
 in several styles

for extremely critical indexing. Four-position Geneva Starwheels, one-piece construction of hardened tool steel. Drivers of hardened steel. Both available in several styles. Complete intermittent movement assemblies also available. Send for catalog AB-61.

LaVezzi

Geneva specialists since 1908

machine works, inc.



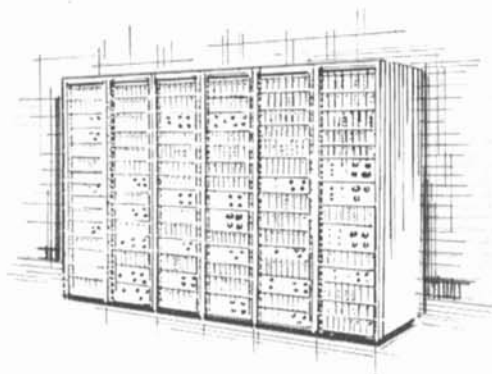
4635 West Lake St. • Chicago, Ill. 60644 • (312) 378-1636

Craftsmanship lives ...

Cintel quality isn't based on thin air. The British tradition of fine, inventive workmanship that created this delicate Chippendale armchair in the 18th century, today surprises the world with advanced color TV equipment ...



Cintel international color television standards converters and synchronizers



These all electronic units (developed under licence from British Broadcasting Corporation) utilize advance delay line and field store techniques. They can be used for the conversion of satellite color pictures, in-house tape-to-tape conversion or as synchronizers for locking remote color program sources to a studio.

Basic unit configurations are as follows:

525/60 NTSC to 625/50 PAL Converter.

625/50 PAL to 525/60 NTSC Converter.

Two-way Converter

(Any of the above can be supplied with synchronizers and full monitoring facilities).

525/60 RGB to 525/60 RGB Synchronizers.

625/50 RGB to 625/50 RGB Synchronizers.

THE MAN
WITH THE GONG
A MAN
OF MANY SKILLS



Write for descriptive leaflet to Cintel Marketing

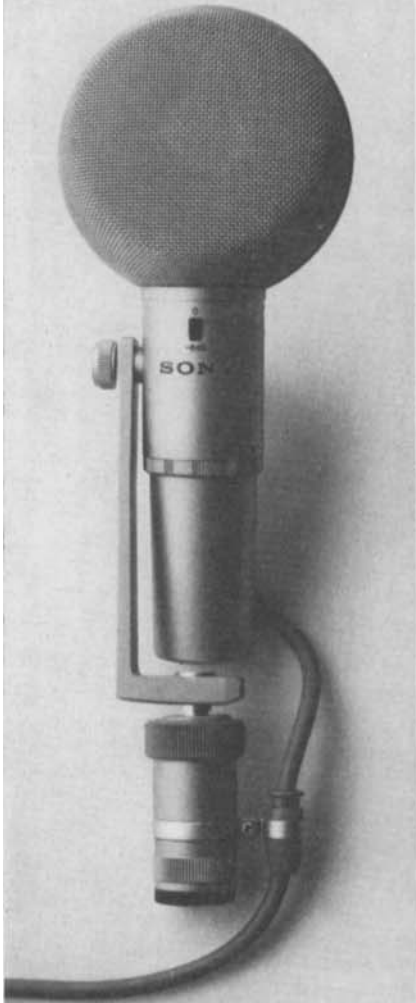
RANK PRECISION INDUSTRIES LTD

Watton Road Ware Hertfordshire England Telephone Ware 3939

Cables Rank Ware Telex 81415

BROADCAST DIVISION

The best
microphone
money can buy.



Recently Sony engineers measured the distortion* of the Sony C-500 and its most prestigious competitor. Here's what they found:

SPL	Sony C-500	Most Prestigious Competitor
100dB	<.05%	.8%
110dB	<.05%	2.3%
120dB	<.05%	>10 %
130dB	<.05%	>10 %
140dB	.05%	>10 %
150dB	.97%	>10 %

If you think the most prestigious competitor sounds good up close, imagine how the Sony C-500 sounds! Better yet — see your nearest Sony / Superscope Special Application Products Dealer. Or write: Sony / Superscope, 8132 Sunland Blvd., Sun Valley, Calif. 91352.

SONY SUPERSCOPE

*Intermodulation Distortion: 70Hz and 7kHz, 4:1 ratio; applied to input of impedance translator at level which is equivalent to capsule output at specified SPL.

© Superscope, Inc.

along a line of the original document: Readout from the device requires about 96 millionths of a second. The experimental line-imaging device scans the document to be transmitted along one dimension and converts light and dark areas into an electrical signal. The document being scanned must be moved relative to the device to generate a two-dimensional image. In the experimental version of the device, the scanning system consists of a light source to illuminate the document, a lens to focus an image of the document onto the surface of the imaging device, a drive mechanism to move the document from line to line as it is scanned and the silicon imaging device itself.

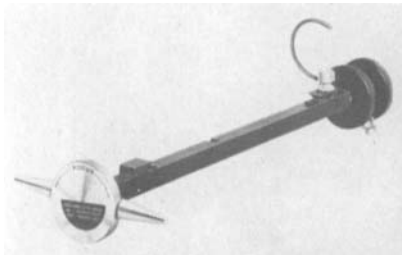
The Canon 25-120mm nonanamorphic (spherical) zoom-varifocal 35mm lens has been developed to specifications of the Motion Picture and Television Research Center of the Association of Motion Picture and Television Producers, 8480 Beverly Blvd., Hollywood, CA 90048. According to Wilton R. Holm, Executive Director of the Research Center, the new lens is intended to eliminate the need for a whole range of fixed-focal-length lenses. He said that the lens is shorter in length, lighter and faster than any currently available zoom lens of comparable focal range. The lens has a macro-focusing capability down to 2 in. It has the ability to run from complete macro at 25mm to no macro at 120mm. The lens contains calcium fluoride elements, used for the first time in a motion picture lens, which permit more contrast and less color distortion. The lens is exported by Ryu-Den-Sha & Co. of Japan. It is available in the United States from the importer, Milton Forman, 708 N. Alpine Dr., Beverly Hills, CA 90210. The price is about \$4,500 including adapters for Mitchell and Arriflex cameras. A 2X extender which doubles the focal range of the lens is available at a slight extra cost. Repair and maintenance of the lens will be handled by Cinema Product Development Co., 2044 Cotner Ave., Los Angeles, CA 90025.



A line of motorized lens attachments designed specifically for Angenieux zoom lenses has been announced by Cine 60 Inc., Film Center Bldg., 630 9th Ave., New York, NY 10036. Features include fingertip speed control, a rechargeable battery pack and a transistorized regulating circuit. The motors have a gear assembly which mounts on the lens barrels which is coupled via a flexible shaft to the power-

supply/motor unit to remove any source of vibration from the lens barrel. Prices range from \$275 to \$435.

Cine 60 also announced the Arri 70 "C" Lens Mount to make it possible for users of 16mm "C"-mount cameras to use Arri-mounted lenses. The lens amount adapter is priced at \$75.



Manually-operated rear zoom and focus controls for viewfinder closed-circuit television cameras have been announced by D. E. Carlson Co., 1024 Michigan Ave., South Milwaukee, WI 53172. The attachments can be attached to the rear of Panasonic and Sony TV cameras, without modification, to eliminate reaching in front of the camera to zoom and focus. Focus and zoom are operated by a handle and knob combination which controls rotation of drive wheels. The wheels are held to the lens by a variable pressure hook arrangement. The units are made of anodized aluminum with Teflon bearings in all moving parts. The price is \$99.95.

The 2X Cine Telephoto Extender Lens for 16mm cameras has been announced by Century Precision Cine/Optics, 10661 Burbank Blvd., North Hollywood, CA 91601. The lens fits any "C" or RX mount tele-lens and is used to double the power of a tele-lens of 75mm or longer focal length. For example, a 150mm f/2.8 Tele-Athenar becomes a 300mm f/5.6 compact lightweight tele-lens focusing as close as 7 ft. The extender can also be used with closed-circuit TV zoom lenses. It is priced at \$59.50.

A liquid gate for use with optical printers has been introduced by Producers Service Corp., 1200 Grand Central Ave., Glendale, CA 91201. Following the basic design of Howard F. Ott and manufactured under a patent license from Eastman Kodak Co., the system is known as the PSC/Ott Liquid Gate. It is available as original equipment or retrofit for 16mm and 35mm Acme optical printers and is adaptable to Oxberry, Research Products and other printers using the Acme type film movement. The PSC/Ott is designed to conceal scratches on original film, to eliminate dirt and to reduce film damage, thus increasing film life. The film is vacuumed when entering the gate to remove all loose dirt. Then both sides of the film are wetted and while in the printing aperture it is completely immersed in controlled uniform layers of liquid. The film is vacuum-squeegeed upon leaving the gate so it is dry when it enters and when it leaves the gate. The position of the film is constantly controlled. The film travels at speeds from hold-frame to 640 frames/min in either direction. The

7-to-70mm Power Zooming A 10:1 ratio with Rokkor f/1.8, seventeen-element lens.

Variable Shutter Lets you obtain effective shutter speeds between 1/18th and 1/450th of a second.

Variable Zoom Speeds Cover entire range in from 2 to 12 seconds.

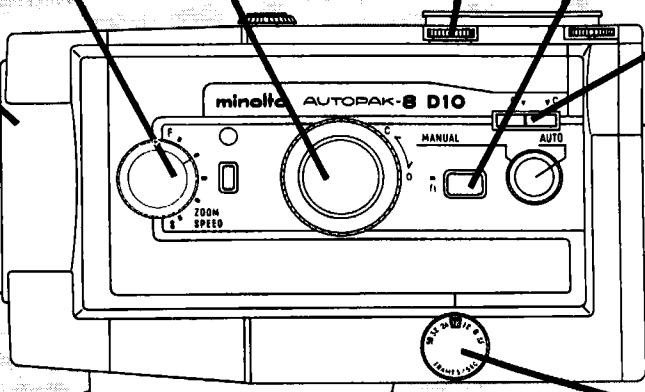
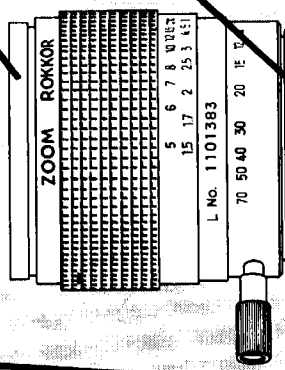
Manual Fading For slower, faster, partial or variable speed fades, just turn the wheel at your own pace.

Viewfinder Curtain Blacks out the finder to eliminate light leak during remote operation.

Footage Counter Re-sets to "start" when the film chamber door is opened.

Automatic Fading A complete fade-in or out at the push of a button, uniformly paced over approximately 54 frames.

Time Lapse, Motion Analysis, Remote Control, Sound Synch and Multiple Camera Operation Just unplug Minolta's exclusive electromagnetic shutter release and plug in one of the optional Autopak-8 system accessories, including your choice of two intervalometers, remote control cords, wireless remote receiver and tape synch cord.



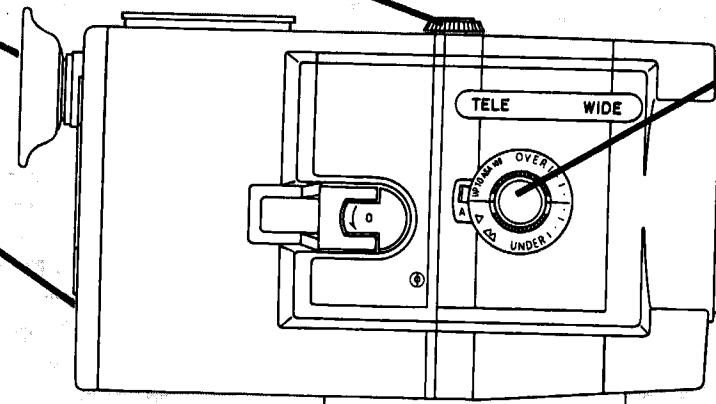
Total Information Viewfinder Besides an extremely bright image, the finder shows aperture, over/under exposure warnings, film transport and the progress and direction of a fade.

Transistorized Micromotor Provides Seven Filming Speeds 8, 12, 18, 24, 32 and 50 frames per second, plus single frame.

Movie Light Outlet Built-in type A filter is positioned automatically.

Focusing Eyepiece Adjusts from +1 to -4 diopter. Can be locked in position.

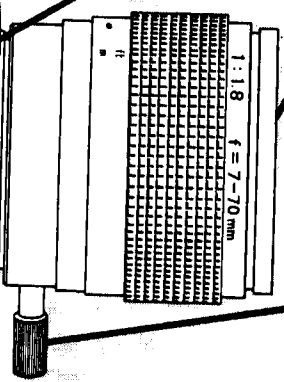
Strobe Light Outlet Fire an electronic flash in perfect synch with single frame exposures.



Semi-Automatic and Completely Manual Exposure Control Meter override by $\pm 2EV$, or meter lock to fix aperture at any opening from f/1.8 to f/45.

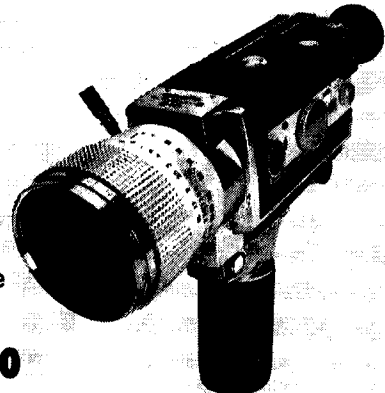
Fully Automatic, Through-the-Lens Exposure Measurement Instant and continuous adjustment for perfect exposure between f/1.8 and f/45, based on CdS readings from behind the diaphragm. (With all films ASA 10 to 640.)

Manual Zooming



Would you believe this is super-8?

Now, for the first time, it becomes possible to seriously consider the convenience and economy of super-8. For full information on the Minolta Autopak[®]-8 D10 System, write to Minolta Corporation, 200 Park Avenue South, New York, New York 10003. In Canada: Anglophoto Ltd., P.Q. **Minolta Autopak-8 D10**



new

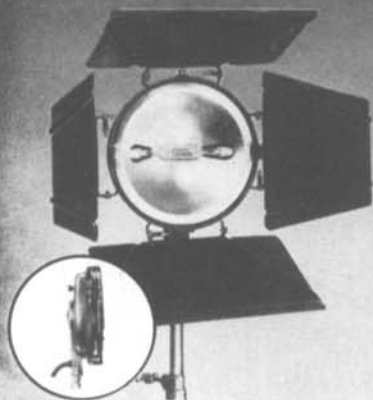
Slimline II

packs up in 3" of space, delivers more light than any flood or fill of its size.

It's another advance from

B & M

THE INNOVATORS IN LIGHTING EQUIPMENT



What a combination for a 2,000 watt quartz lamp! So slim you can put 3 in the space of one ordinary flood. So high in intensity it does the job of much larger units. And with Slimline's extra sharp barndoor cutoff, you control light better and easier than ever before. Want to know more? Write Dept. SM6-1.

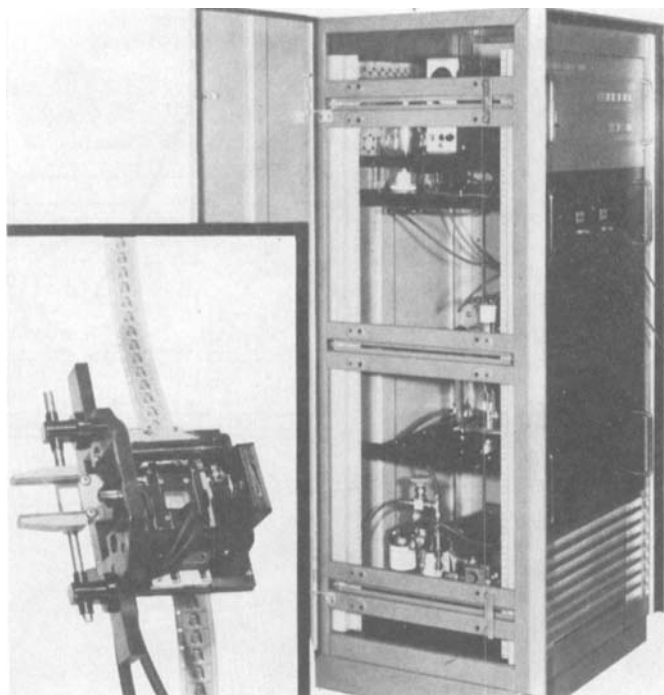


Bardwell & McAlister Inc.

A DIVISION OF F&B/CECO INDUSTRIES, INC.

12164 Sherman Way
North Hollywood, California 91605
(213) 875-1913

315 W. 43rd St., New York, N. Y. 10036
(212) 586-1428



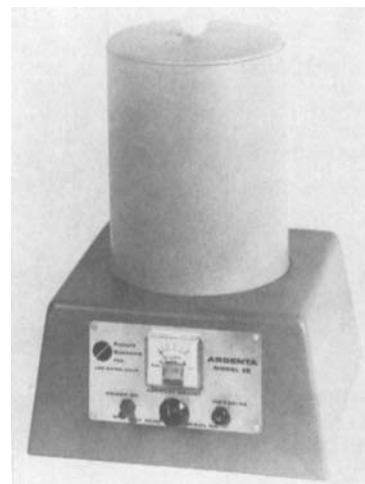
liquid gate is interchangeable from one printer to another.

The liquid support system for the gate is mounted on wheels and can be used with any printer supplied with the gate. Of closed-loop design it is comprised of supply and replenishment systems, heater and thermostat, bubble traps, liquid pump, filters, check valve, liquid trap, vacuum pump, vacuum gage, exhaust and drain. Prices range up to \$14,000 depending on how many gates are tied into one liquid support system.



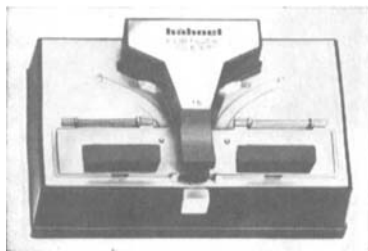
A new cross-modulation oscillator designed to work with the RCA PM 80 Optical Film Recorder for quality control of 16mm or 35mm soundtracks has been announced by Sound Engineering, 71 Crescent West, Hadley Wood, Barnet, Herts., England. The oscillator is available cased or uncased. The cased version is for use as a portable instrument and the uncased version fits into the oscillator bay of the PM 80 Recorder. The instrument is solid state throughout. Carrier frequencies range from 4 to 10 kHz and the modulating frequency is 400 Hz. Reference tones are 400 Hz and 1 kHz. All frequencies are individually adjustable for level. Reference levels, modulated and unmodulated, are pushbutton selected. The portable version in its case is 11 in long, 5 in high and 4½ in wide. It is priced at £ 225. The PM 80 version is £ 220.

The Argenta Series of electrolytic silver recovery systems, described as "the world's smallest," has been announced by Future Systems Inc., P.O. Box 1820, Los Gatos, CA 95030. Five models are available, ranging in size from 21 by 15 by 25 in down to a table-top unit 22 by 16 by 12 in. Features include flexible, nonconductive strips, or boundary layer trippers, which are attached to a stationary anode. They prevent electrical resistance build-up in the boundary layer by allowing a continuous flow of fresh, silver-rich solution to the system's rotating cathode.

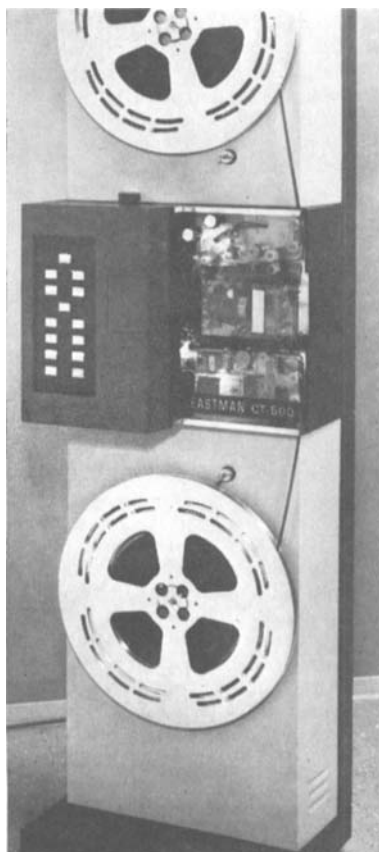


The smallest unit (Model 5) uses only 2 W and the largest unit (Model 75) uses up to 300 W. Model 5 recovers 0.5 troy oz/h and the cathode collects up to 8 lb of silver before desilvering is necessary. Model 75 recovers 9 troy oz/h and collects 60 lb of silver. Price range is from \$255 (Model 5) to \$3,895 (Model 75).

The Hahnel 16mm Motorized Film Splicer for 16mm film has been announced by Allied Impex Corp., 168 Glen Cove Rd., Carle Place, L.I., NY 11514. The



splicer is cordless and battery powered with two "C" cells and features a sapphire-coated scraper. Due to the placement of the cutter both film ends are cut squarely on the frame line. The emulsion is scraped by means of a high-speed (6000 r/min) sapphire-coated, wedge-shaped scraping wheel to produce a wedge-type, jump-free splice. The splicer can be used for both single- and double-perforated 16mm films either sound film (magnetic or optical) or silent. The price without batteries is \$49.95.



The Eastman CT-500, a television film projector designed to withstand heavy use in a television film chain, has been announced by Eastman Kodak Co., 343 State St., Rochester, NY 14650. Features include rapid film transport in forward and reverse modes, reverse projection at 24 frames/s, automatic shutdown of the projector at the end of the film or in case of film breakage, variable lamp voltage control, automatic projection lamp and exciter lamp changers in case of burnout, lighted pushbutton control panel and a Geneva intermittent-type drive. An integral solid-state cuing system provides convenient automatic cuing. The rapid film transport enables a 4,000-ft reel to be rewound in less than seven minutes. The tungsten-halogen pro-

Professional Services

TIME LAPSE—HIGH SPEED SCIENCE MOTION PICTURES

Bacteriology, chemistry, scientific special effects applied to motion pictures and TV
Consultation and production since 1929
LESTER V. BERGMAN AND ASSOCIATES, INC.
 8 E. 12 St., New York, N.Y. 10003
 924-3632

Thomas M. Lemons, P.E. Lighting Consultant

Lighting Installation Designs • Lighting Product Designs
 Optical System Designs • System Evaluation and Testing
 Product and Market Planning

TLA-Lighting Consultants
 72 Loring Ave. Salem, Mass., 01970
 617/745-6870

Consulting & Product Development by Professionals for Laboratories — Studios — Aerospace — TV

(213) 769-2521
L. M. DEARING ASSOCIATES, INC.
 12345 Ventura Blvd. / Suite R / Studio City, Calif. 91604
 Instrumentation. Photometry. Data Recording
 Light Sources. Quality Control. Materials.

REELS • CANS • FIBER CASES

MOTION PICTURE ENTERPRISES INC.

Tarrytown, N.Y. 10591
 N.Y.C. Tel: 212-245-0969

MOTION PICTURE PRODUCTIONS

Motion Picture Productions and complete laboratory services. All related Filmmakers services, script-to-screen. Industrial, Educational, Training Films and T.V. Commercials. Write or phone us today.

THE FILMMAKERS, INC.
 1001 Terminal Road
 Lansing, Michigan 48906 (517) 487-3735

Creative sound effects editing for your films. Also complete post production editing services.

Ronald H. Plant Productions
 Box 21034
 Long Beach, Ca 90801

HERMAN GALLI CAMERA SERVICE

Expert repair and service on all professional movie and still cameras and accessories
ARRIFLEX, ECLAIR, ZOOM LENSES
 modifications, custom design
 6804 Melrose Ave., Los Angeles, Calif. 90038
 Phone 213-931-4111

SMPTÉ MEMBERS!

Are you a consultant?
 ... or self employed?
 Advertise in the SMPTÉ Journal
 Professional Services page
 Only \$60.00 per year.
 Write: Advertising Manager,
 SMPTÉ Journal
 9 E. 41 St., New York, N. Y. 10017

THE CAMERA DOCTOR

Repairs all types of professional cameras and equipment
 Phone or write The Camera Doctor at
ALAN GORDON ENTERPRISES INC.
 1430 N. Cahuenga Blvd., Hollywood, CA. 90028
 (213) 985-5900 or (213) 466-3561

FILM PRODUCTION EQUIP. RENT • LEASE • SERVICE

World's largest source of equipment for producing, processing, recording, editing, etc.
S.O.S. PHOTO-CINE-OPTICS, Inc.
 EAST: 40 Kere Rd., Carlstadt, N.J. / (201) 839-8250
 315 W. 43rd St. N.Y.C. / (212) JU 6-1420
 HOLLYWOOD/MIAMI

RENT

16mm, 35mm, 70mm
 Motion Picture Cameras
 High Speed Cameras
 Special Cameras
 Lenses—Lights
 Processing Equipment
 Editing Equipment
ALAN GORDON ENTERPRISES INC.
 1430 N. Cahuenga Blvd., Hollywood, CA. 90028
 (213) 985-5900 * (213) 466-3561

Complete Laboratory and Sound Services for the 16mm Movie Producer
 Daily Processing of the entire family of Ektachrome Films.

16mm Color Internegative/Positive Service with "Traid" Scene-to-Scene Color Corrections
 Only self-contained, single source, 16mm laboratory in the Southwest.
 Write for price list today.
SOUTHWEST FILM LAB. INC.
 3024 Ft. Worth Ave., Dallas, Texas 75211
 A/C 214 331-8347

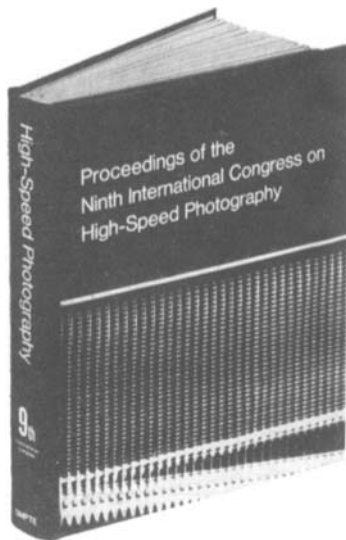
FRANK P. HERRNFELD

Engineering Consultant
 299 East Elfin Green
 Port Hueneme, Calif. 93041
 Tel. 805-487-9762

AURICON & K-100 CONVERSIONS to 400 & 1200 ft.

Filter slot Auricons & Films
 Transistor amplifiers, processors, etc.
 Write for details
GORDON YODER
 Professional Cine Products
 2959 Ladybird Lane, Dallas, Texas 75220

New advances in high-speed photography



The most recent advances in the technology of photo-instrumentation have been made available to the scientific community in the *Proceedings of the Ninth International Congress on High-Speed Photography*.

The volume includes the 107 papers presented at the Congress in Denver, Colorado on 2-7 August 1970, together with all pertinent discussion of the papers during the technical sessions. Subject areas covered in the volume are

holography and image-dissection cameras, lasers, rotating mirrors and streak cameras, light sources and x-rays, and high-speed photographic applications.

In addition, a Current Bibliography on High-Speed Photography, prepared by the Research staff of Eastman Kodak Company especially for the *Proceedings*, will prove valuable as a research tool. A report on the Congress, a list of delegates, and an index of authors and discussers complete the volume.

The book comprises 605 pages, 8½ x 11 inches, in hardbound edition. The price is \$40.00 each, with discounts to SMPTE members, libraries, and booksellers: 1 to 4 copies 20%; 5 to 49 copies 25%; 50 or more 33⅓%.

Society of Motion Picture and Television Engineers
9 EAST 41 ST., N.Y., N.Y. 10017

jection lamp has a 100-h rated lamp life and a spare lamp mounted on an easy-access dual turret provides rapid, automatic replacement of a burned-out lamp. Other features include dual supply and take-up spindles for large and small reel loading and rewinding and a flywheel accelerator to provide a minimum of stabilization time and improve sound drum life. The CT-500 is priced at \$16,000.



The improved TK-27B color TV film camera with built-in contour-enhancing circuits has been announced by RCA Government and Commercial Systems, Moorestown, NJ 08057. The contouring is produced from the camera's luminance signal. The camera has a four-tube design with three pickup tubes handling chroma signals. The fourth, a 1¼-in vidicon, handles luminance, or brightness. The controls have also been improved so that setup and target tracking are more easily handled. The TK-27B is priced at \$46,000. The unimproved TK-27 cameras can be retrofitted with a contouring accessory for \$4,000.

Two new videotape recording accessories, the VBL-1 Bin Loop Adapter and the ADT-1 Tailoring Device, have been announced by Ampex Corp., 401 Broadway, Redwood City, CA 94063. The accessories are designed for use by production companies and stations which require many duplicate copies of commercials or other short duration TV segments. The Bin-Loop Adapter is used on the master videotape recorder in place of the regular supply and takeup reels. Up to four minutes of video material can be recorded on the master tape. The tape plays continuously because of the use of

the bin loop, eliminating the need to rewind the tape each time the recording is played. Copies are continuously recorded on a second videotape recorder. The Bin Loop Adapter is priced at \$6,950.

The duplicated tape from the master recorder is placed on the Tailoring Device which winds each program segment onto a takeup reel or cassette hub and then cuts and codes the tape for beginning and end of tape sensing. A series of three cue tones placed on the tape during duplication designates the proper place to cut and code the tape. The Tailoring Device is priced at \$14,050.

The IVC-500 color television camera using the new Tivicon tube to permit operation at less than half the normal light level requirement has been announced by International Video Corp., 675 Almanor Ave., Sunnyvale, CA 94086. The Tivicon tube, used in the red channel of the camera, is matched with Plumbicon tubes in the green and blue channels. The Tivicon (*Journal*, p. 894, Sept. 1970) has the performance features of the Plumbicon, including the same gamma spectrum. It is reported to be seven times more sensitive in the red region with a spectral response to 700 nm. The IVC-500 is priced at about \$26,795.

The Mark VIII, an automatic color TV camera, has been introduced by Marconi Electronics Inc., a new company of the GEC-Marconi Group established in Elmsford, N.Y. (*Journal*, p. 422, May 1971). The camera is completely automatic, including line-up, color balance, dynamic centering and check-out and is all push-button controlled.

A studio console version of the IVC-900 color videotape recorder, designated the IVC-4190, has been announced by International Video Corp., 675 Almanor Ave., Sunnyvale, CA 94086. Designed for broadcast and closed-circuit applications, the console-mounted monitor is available in either color or monochrome versions. The color videotape recorder in the new console, when used with dropout compensator, processing amplifier and time base corrector, meets FCC standards for color and monochrome broadcasting. Prices for the IVC-4190 begin at \$14,000.

A new time base corrector, designated the IVC-4102, has been developed for use with the IVC-900 color videotape recorder, it was announced by International Video Corp., 675 Almanor Ave., Sunnyvale, CA 94086. When coupled with the IVC-900, the IVC-4102 permits the combined use of helical-scan equipment with quadruplex recorders for dubbing in broadcast teleproduction. The IVC-4102 is reported to reduce time base jitter to 4000 times less than jitter present on standard helical-scan videotape recorders and offers a time base correction down to 7 ns. The unit can also be used as an input source to a television production switcher. It is priced at \$9,000. A monochrome version is available at a price of \$6,000.

The Silver Star Variable Delay Line Unit UN14/511 has been added to the existing

PUT AN INFORMER ON YOUR STAFF



You read journals to be informed about the important discoveries, processes, products, and techniques being discussed. A professional like you simply has to devote more and more time to staying informed. To do otherwise risks almost certain obsolescence. It is difficult to stay properly informed just by scanning dozens of journals—not to mention the patent literature. But your company or library can add an inexpensive assistant to your staff that will see that you and your colleagues stay informed of all the significant developments in all photographic specialties.

Abstracts of Photographic Science and Engineering Literature keeps you informed each month with over 7,000 abstracts

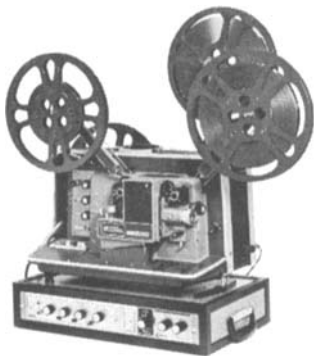
per year of both literature and patents. Over 350 domestic and foreign journals are covered. Abstracted by over 150 experts from SPSE. Organized, indexed, and cross-referenced. Translations simplify staying informed about foreign publications and patents from over 36 countries. (Patents often disclose information long before journal publication—something missed by those who read only journals!)

Stay informed more reliably and make your research more efficient, your writing easier, your patent searching quicker. For information about *APSE*, write SPSE, 1330 Massachusetts Avenue, N.W., Washington, D.C. 20005.



Society of Photographic Scientists and Engineers

NEW! PALMER INTERLOCK PROJECTOR



Play back separate picture and sound in perfect sync.

New Model PGSS-2 Palmer Interlock is a complete system to project picture with optical or magnetic track, record on stripe or 16mm magnetic film, and make sound transfers.

 Write for details.

W. A. PALMER FILMS, INC.
611 HOWARD STREET • SAN FRANCISCO, CA 94105
San Francisco's complete 16 mm film service

Projecting the Perfect Image...

with know photometric specifications



SPECTRA®
TV OPTOLINER™

PROJECTS A UNIFORM, HIGH RESOLUTION ILLUMINATED PATTERN DIRECTLY ON SENSOR FACEPLATE. TEST AND EVALUATE — LINEARITY — RESOLUTION — DISTORTION — LUMINOUS SENSITIVITY — REGISTRATION — AND CONTRAST.

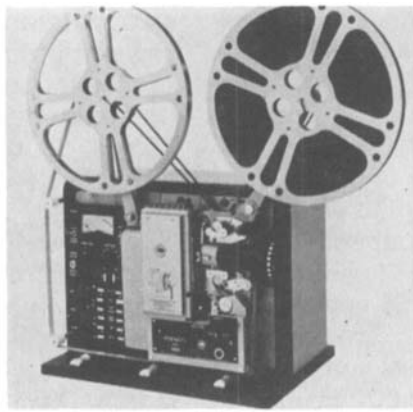
PHOTO  RESEARCH

A Division of KOLLMORGEN Corporation
3000 N. Hollywood Way • Burbank, Calif. 91502

range of 75-Ω equalized delay line modules by Matthey Printed Products Ltd., William Clowes St., Burslem, Stoke-on-Trent, ST6 3AT, England. It is a plug-in unit providing selection of any delay time from 10 ns to 165 ns. It is intended primarily for use with color television mixing equipment to facilitate rapid and exact timing on a temporary basis for specific, special event programs. It measures 4½ by 2½ by 1¼ in. Fitted with MUSA plugs the unit can be connected into cable lines and can be cascaded with an 75-Ω delay. The price per unit is \$21.60 to \$36 depending on the quantity ordered.



The Delta-T Model 101 Audio Signal Delay System incorporating digital processing of wideband audio signals has been announced by Gotham Audio Corp., 2 W. 46 St., New York, NY 10036. It has no mechanical moving parts and incorporates within a 7-in rack unit the equivalent of some 600,000 discrete solid-state devices. It provides up to five separately controllable outputs from a single input, each adjustable in 5-ms time delay steps to a maximum of 320 ms while maintaining SNR of 60 dB and a response range from 30 to 12,000 Hz with both harmonic and intermodulation products below 1% for line level outputs. The basic unit, equipped for single output adjustable in 5-ms steps up to a maximum of 40-ms is priced at \$3,192. The Model 1010 output plug-in module is priced at \$336. The Model 1013 40-ms delay circuit card is priced at \$588. A unit fully equipped with all possible outputs and delays would be priced at \$8,652.



The L-W Athena 4000-TSM, a new 16mm stop-motion telecine sound projector, has been announced by L-W Photo, Inc., 15451 Cabrito Rd., Van Nuys, CA 91406. It is designed for multiplex use as well as uniplex and direct screen hook-up. Audio is magnetic playback and record in addition to optical. Features include frame rates from 1 to 24 frames/s. Operation is compatible with the 60-scan rate of TV broadcast. Other features

include instant still/run capability for both picture and sound, instant forward/reverse direction at any frame rate and unlimited hold on single frame. Reel capacity is 2000 ft. The price is \$4,590.

The Norelco PIP (Programmed Individualized Presentation) Audio and Visual Cassette System, designed to bridge the gap between sound motion pictures and slide or film strip presentations through a simple, economical method of variable-speed projection, has been announced by North American Phillips Corp., Training and Education Systems, 100 E. 42 St., New York, NY 10017. The principle of the system is to divide sound and film by using separate audio tape and super-8 film cassettes electronically coupled in complete synchronization. The tape moves at a constant speed to provide a clear, distortion-free soundtrack while the film moves at predetermined speeds appropriate to the action. Using a variable-speed projection technique, the film can advance at speeds from 24 frames/s to 1 frame/s, and slower. A single frame can be projected for 5 s and live motion and animation can be shown at speeds as slow as 8 frames/s and 12 frames/s. By separating soundtrack and film into cassettes, programs for the PIP can be duplicated at a low cost.

The Bauer T30 super-8 sound projector has been announced by Allied Impex Corp., 168 Glen Cove Rd., Carle Place, L.I., NY 11514. The projector can show super-8 motion pictures with magnetic sound, at 18 or 24 frames/s, or silent films. The magnetic head lifts automatically during showing of silent films. A built-in sound mixing control allows superimposing of sound on pre-recorded sound. Automatic reel-to-reel film threading and forward or reverse running speeds at 18 or 24 frames/s are electronically controlled by a single-phase motor. The projector has an Isco-Kiptagon 1.3/15-30mm zoom lens and a quartz iodine bulb with cold-light mirror. The price is announced at \$499.50.

The C-37P variable-directivity condenser studio microphone, an improved version of the Sony C-37A, has been announced by Superscope, 8150 Vineland Ave., Sun Valley, CA 91352. A new low-noise FET amplifier which provides a dynamic range of 130 dB has been incorporated. Noise level has been reduced by 10 dB and the overload point has been increased by 20 dB. The C-37P utilizes standard phantom powering and may be used with any 48-V phantom supply with 2.5 mA or greater capacity. Frequency response and directional characteristics remain unchanged from those of the C-37A. The C-37P is priced at \$295.

A full line of cans especially designed for 16mm film in standard 100- and 200-ft reels and for 35mm film in 100- and 1000-ft lengths has been announced by Ellisco, Inc., American and Luzerne Sts., Philadelphia, PA 19140. The firm also supplies special cans for 8mm film, 10 ⅜-in diameter cans for ⅜- and 1-in audio magnetic tape reels and custom-designed cans to meet any film or tape packaging requirements.