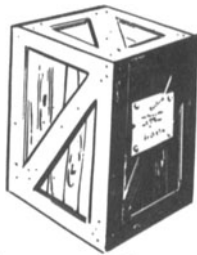


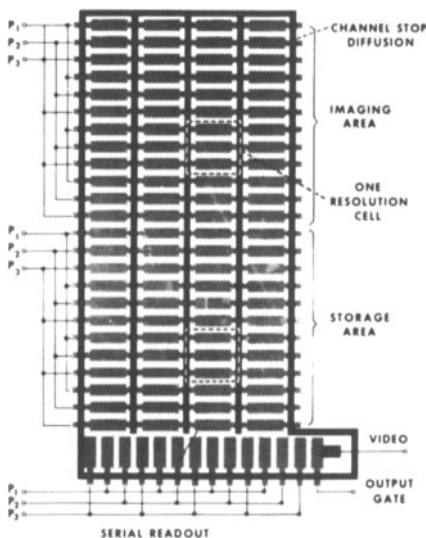
# new products

(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.

## CHARGE COUPLED AREA IMAGING DEVICE FRAME TRANSFER PRINCIPLE



An exploratory model of a new solid-state video camera has been built at Bell Telephone Laboratories. The camera represents a major application of charge coupling, a semiconductor principle discovered at Bell Telephone Laboratories (*Journal*, p. 520, June 1971). Heart of the camera is a flat chip of silicon covered with an insulating oxide over which is an array of metal electrodes. The charge-coupled imaging device is self-scanning; it does not require the electron beam, high voltages and vacuum envelope required by conventional video cameras to convert an optical image into an electrical signal in a video format.

The exploratory imaging system is a two-dimensional array of  $128 \times 106$  light-sensitive cells. The active area of the device is  $3 \times 5$  mm and it is largely covered with metal electrodes  $9 \mu\text{m}$  wide spaced  $2 \mu\text{m}$  apart. Light focused on the silicon chip generates free electrons within the silicon, more where the light is brighter and fewer where it is less bright. The free electrons collect at the surface of the silicon under the electrode with the highest positive potential in the area where they were generated. The packets of charge are then transferred along the surface of the silicon

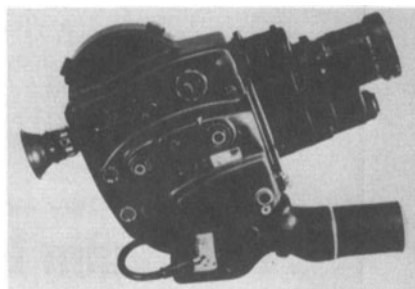
by decreasing the potential on the electrode holding the charge while applying a more positive potential to the next electrode. This causes the charge packet to move from under one electrode to the next along a well-defined path. This process (charge coupling) is repeated until the packets of charge reach the end of the device and are read out through a serial register. The analog variations of the current represent variations in light flux from the original image. The charge coupling principle makes this a self-scanning device with simplified external circuitry.

The camera focuses the image on half the silicon area of the device and integrates an image on  $64 \times 106$  light-sensitive cells. The integrated frame is then transferred to a  $64 \times 106$ -element storage area on the other half of the device and is shifted down line by line to be read out through a serial register while a new frame is integrated in the imaging area. By the time the new charge pattern has formed, the preceding frame has been read out and the storage area is ready to receive the new frame. This cycle is repeated 60 times a second.

With further development of charge coupling technology, it is expected that small, very sensitive video cameras, that would be simple and inexpensive, may be produced.

The TK-630, a broadcast-quality color TV camera, has been announced by RCA Corp. Government and Commercial Systems, Moorestown, NJ 08057. It is a three-tube camera intended especially for educational broadcasters and closed-circuit and cable TV systems. The camera has a removable viewfinder which improves camera portability and permits the viewfinder to be used as a floor monitor. The camera is priced below \$40,000.

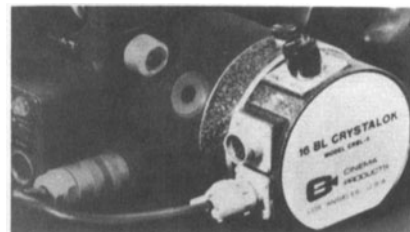
The TK-28, a color TV film camera for telecine chains, has been announced by RCA Corp. Government and Commercial Systems, Moorestown, NJ 08057. It is a three-tube camera and can be used with vidicons or with lead-oxide tubes. The camera has a color-correcting system that automatically maintains color balance at black-and-white levels. The technique is used to improve incorrectly exposed or printed films and to correct color balance variations that result from differences in projector light sources. A neutral density filter wheel in the light path provides automatic light control. It is designed to correct for a two-to-one increase in light input in less than one-tenth of a second. The camera with vidicons is priced at \$45,000. With lead-oxide tubes the price is \$50,000.



The Beaulieu R16B(PZ) 16mm camera

with a built-in power zoom has been announced by Heric Corp./Cinema Beaulieu, 14225 Ventura Blvd., Sherman Oaks, CA 91403. The camera is compact and lightweight ( $4\frac{1}{2}$  lb). Features include fully automatic prefocus control. The design is for fingertip pressure on the prefocus control button for instant and automatic zooming the lens out to its maximum telephoto position and, at the same time, automatically opens the diaphragm to its maximum aperture. With the Angenieux 17-68mm zoom lens the camera is priced at \$1,980. With the Angenieux 12-120 zoom lens the camera is priced at \$2,611.95.

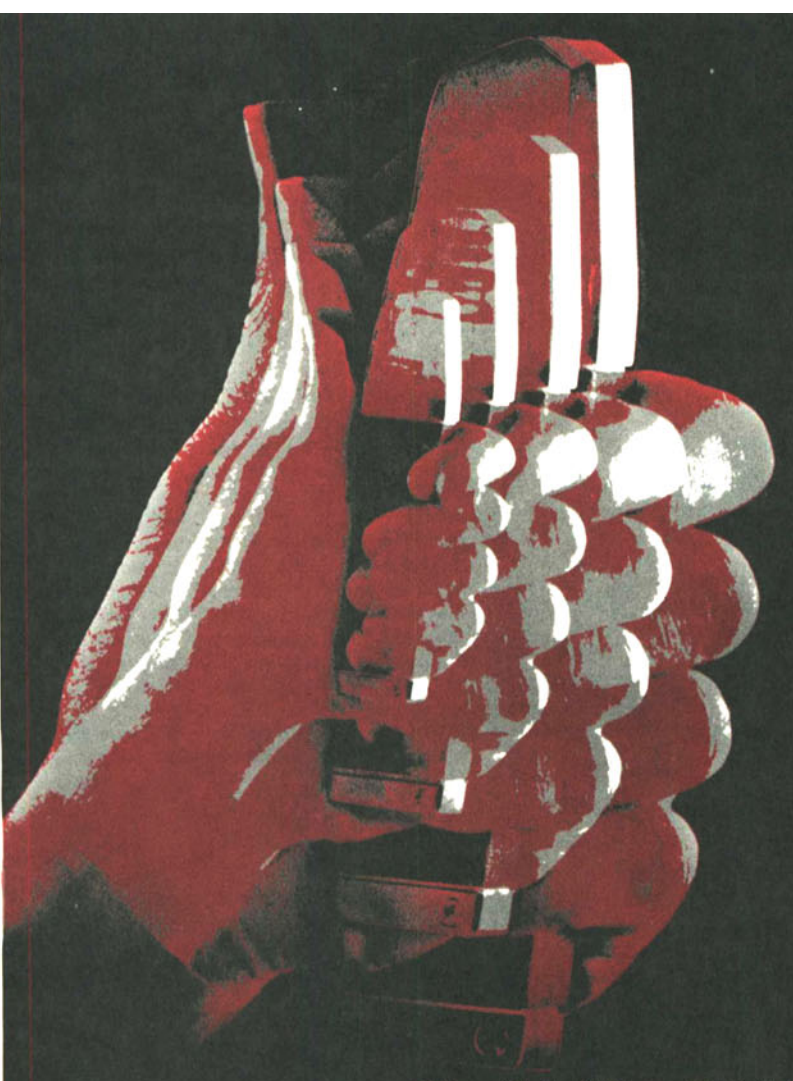
The Kinoptik 18mm *f*/1.8 Apochromat lens has been announced by Karl Heitz, Inc., 979 Third Ave., New York, NY 10022. The lens is designed to cover a viewing angle of  $73^\circ$  on an  $18 \times 24$ -mm format without distortion. The 18mm *f*/1.8 lens is available in "C" mount for 16mm motion-picture cameras, in Arriflex mount for 16mm or 35mm and in a nonfocusing barrel mount. The 16mm format lens is different in design from the 35mm format lens. In the 16mm format, the lens has a focal length between wide-angle and standard format, but a wider angle than a regular "standard" focal length. It is a wide-angle lens for 35mm motion-picture and an extreme wide-angle lens for the 35mm SLR Alpha camera to which it can also be fitted. The 18mm lens in a 16mm C-mount is priced at \$299.



The 16BL Crystallok, an accessory which makes crystal sync recording possible with Arriflex 16BL cameras equipped with universal motors, has been announced by Alan Gordon Enterprises, Inc., 5362 N. Cahuenga Blvd., North Hollywood, CA 91601. Designed and developed by Cinema Products Co., the device requires no modification of the BL camera or battery. A switch on the device permits filming at 24 frames/s in crystal sync or at variable speeds ranging from 14 to 48 frames/s. It is priced at \$775.



A universal crystal sync unit interchangeable on all motion-picture cameras has been introduced by Communication Arts, Inc., manufacturers of the device.



We are very proud to have been honored in 1972 with TWO Academy Awards for technical achievements for the design and development of our J-4 Zoom Control and the hand held Arri Crystal Motor. This continues our recognition by the academy for technical achievement. Our first academy award was won in 1969 for developing Pellicle Reflex Viewing for the BNC.

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Ed Di Giulio Says:

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But the real surprise is that a zoom control as sophisticated as the J-4 "Joy Stick" has been accepted by 16mm cameramen as well!



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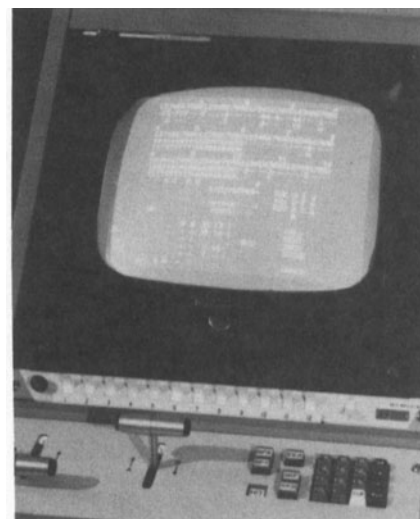
## CINEMA PRODUCTS

2044 Cotner Avenue, Los Angeles  
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The unit is distributed by Cine 60, Film Center Bldg., 630 Ninth Ave., New York, NY 10036. The unit uses miniaturized CosMos integrated circuitry with accuracy of  $\pm 15$  parts per million. It fits a Cine-60 belt battery, switchable 50/60 cycles out of sync warning light. It operates all dc motor-equipped cameras including ariflex BL (variable-speed capability), Arriflex S, M and 35 (utilizes standard variable speed motors), Auricon Conversions (variable-speed capability), Bolex (MST motor), Eclair CM2, Mitchell R35, NC and BNC with available motors (variable-speed capability). It is priced at \$650.



**The Sho-Pak**, a portable battery power pack providing selectable 6-, 12-, 18-, 24- and 30-V dc outputs with a 7½ Ah capacity at a 20-h rate, has been announced by Shotec, Inc., 1717 Junction Ave., San Jose, CA 95112. The unit is powered by a series of sealed lead/colloidal-electrolyte batteries designed to be spill-free, to require no water or level checking and to be operable in any position. Because of the voltage selectability feature, the recharging unit uses a built-in diode logic circuit to accommodate an unbalanced cell-discharge pattern. At the beginning of the charge period, the unit automatically selects the lowest cell, raising it to the level of the next lowest cell and proceeding in this way until all cells are at the condition of full charge. Charging time is 10 hours from full discharge and the unit is capable of 500 or more charge/discharge cycles. The Sho-Pak is contained in a cabinet 10¼ in deep, 13 in wide and 5½ in high. It weighs 27 lb. Possible applications include photoinstrumentation, photographic lighting, cinematographic equipment and laboratory applications where isolated sources of pure dc are required. The price is \$360.



**The AutoCue**, a computer memory lighting control system, has been announced by

Skirpan Lighting Control Corp., 41-43 24th St., Long Island City, NY 11101, which has acquired the manufacturing and patent rights. The system was invented by Adrian B. Ettlinger (Adrian B. Ettlinger and Salvatore J. Bonsignore, "A CBS Computerized Lighting Control System," *Journal*, pp. 277-281, Apr. 1972). The system uses a combination of computer and television technology to memorize complete sequences of lighting effects for theatrical or television productions. It is presently in use at CBS Television Studios in Hollywood. AutoCue systems are specially designed by Skirpan for each installation.

A new 12-in, 5000-W Ring-Focus Fresnel has been announced by Berkey-Colortran, 1015 Chestnut St., Burbank, CA 91502. The new Fresnel has a new lens design to provide increased performance and a focus ring that permits rapid focusing from any position. Features include the Colortran four-point contact socket for positive mounting and improved lamp life, and a special cooling design. Focusing is done by moving the lens rather than moving the lamp. Thrust-out relamping permits lamp changes without moving the fixture or disturbing barndoor adjustment. The unit accepts 5-kW 3200° and 3400° tungsten-halogen lamps. The bipost lamp socket remains stationary. The unit weighs 36 lb. The price is \$325.

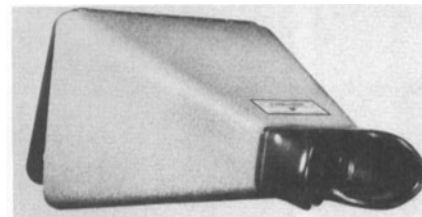
A new diffusion material called Super Silk, a continuous glass fiber weave designed to hold up in front of the hottest lights, has been announced by Berkey Colortran, 1015 Chestnut St., Burbank, CA 91502. The material has no sizing to turn brown as spun glass does. It is reported to be nonirritating to the skin. Super Silk is available in 48-in widths. A 10-yd roll is priced at \$30, a 35-yd roll at \$100 and a 100-yd roll at \$270.

**The TS-52 multimix production switcher** has been announced by RCA Corp. Government and Commercial Systems, Moorstown NJ 08057. The switcher can mix simultaneously six video signals and a background color. The individual signals, or all of them, can be mixed, faded or dissolved at the same time. An associated device, the TG-7 hue generator provides backgrounds in almost any color by means of its continuously variable hue control, making possible fades to a choice of colors, rather than to traditional black.

**The Model 324 Video Storage Terminal** has been announced by Systems Research Laboratories, Inc., 2800 Indian Ripple Rd., Dayton, OH 45440. The terminal contains an advanced silicon target scan converter tube which permits storage and retrieval of video signals at resolutions up to 800 TV lines and 10 shades of gray. The stored video signals can be scanned in the "read" mode and the video output signals are then used to drive standard TV monitors, printers and other devices. During the readout of the video signals, additional information can be simultaneously added to the stored image by use of a light pen. A simultaneous read and write capability (operating at a 15,750 Hz rate) permits

dynamic X-Y plotter type CRT displays. The stored information can be held for up to 30 min without significant image deterioration. Erase time for the stored video signal is one TV frame (less than 33 ms) for the complete raster. Model 324 is offered on a custom tailored basis to fit requirements of each user.

**The Chiron Graphics II**, a flexible electronic device providing character fonts for use in television broadcast titling applications has been announced by Systems Resources Corp., 223 Newtown Rd., Plainview, NY 11803. The system uses a programmable font which can be created locally at the station directly from artwork using a broadcast camera and stored on a Vidiloop magnetic tape cartridge in digital form. Many different fonts can be kept on hand and brought out for use on different TV programs as required. Operating from a typewriter-like keyboard, as many as six different font styles in different sizes, shapes or languages can be selected from keys and "typed" on the TV screen. An unlimited library of different type fonts can be stored on Vidiloop magnetic tape cartridges and then preselected for use in the Chiron II titling system. Price range for the system is from \$33,500 to \$37,000.



**The Stereotronics System**, designed for 3D viewing of industrial TV, has been announced by Stereotronics Television Co., 13720 Riverside Dr., Sherman Oaks, CA 91403. The system includes the Stereo-Captor that fits on the lens of any TV camera, the Stereo-Screen that replaces the glass implosion plate in front of the TV monitor, the Stereo-Hood that swings down in front of the monitor for individual viewing in 3D and Stereo-Glasses for group viewing in 3D. The system is optical and requires no electronic modification. The stereo pictures may be recorded on a conventional videotape recorder and played back for stereo viewing. The Stereo-Captor is priced at \$1,950. The Stereo-Screen for 8-in monitors is priced at \$150. (Larger sizes are available.) The Stereo-Hood for 8-in monitors is priced at \$550. Stereo-Glasses are priced at \$50.

**Four Scotch brand U-Matic videocassettes** have been announced by 3M Company, St. Paul, MN 55101. They are the UC-10 and UC-20 (10- and 20-min versions) and the UC-30 and UC-60 (30-min and 1-h). Using a ¼-in format compatible with Wollensak, Sony and all other U-Matic videocassette systems, the cassettes are loaded with 3M's cobalt-energized High Energy helical video tape. Price range is from \$17 to \$35.

A new 2-in, backcoated transverse videotape for use with four-head broadcast videotape recorders has been announced by Ampex Corp., 401 Broadway, Redwood

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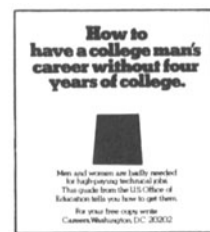
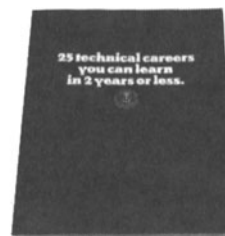
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City, CA 94063. Called the 145 Series, the videotape is designed for use in educational and commercial monochrome broadcasting and closed-circuit applications. A new binder formula incorporating smaller oxide particles than previous monochrome tapes and an advanced tape coating process result in reduced head wear and increased head and tape life. The back coating, a thin layer of carbon black in a binder system, acts as a shield to reduce the electrostatic attraction of dust and particles that lead to dropouts and picture degradation. The tape is available in ½-, 1- and 1½-h versions. The price is about \$190 for a 1-h reel.



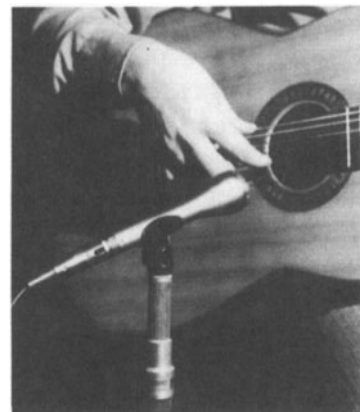
The **Hermes-Magnetek B-601**, a tape evaluator-cleaner designed for use in television stations and TV tape production facilities, has been announced by Television Equipment Associates, Box 1391, Bayville, NY 11709. The unit is intended for major users of quad (2-in) tape and can provide inspection capability to evaluate tapes prior to recording VTR use. Features include a blade and tissue cleaning system and a constant-tension device to maintain consistent tape tension under all operating conditions. The B-601 can evaluate a one-hour tape in 9 min, producing a double-pen graph recording in which one pen plots video dropout and the other pen plots edge damage. An adjustable threshold provides tape grading to differentiate the master from dub-stock. Prices begin at \$18,000.

The **Video Noise Meter**, Type UPSF, a new all-solid-state video noise meter for noise voltage measurements on composite video signals, has been announced by Rohde & Schwarz Sales Co., P.O. Box 148, Passaic, NJ 07055. The new instrument is based on the same principle as its tube-type predecessor (Rudolph Feldt, "Measurement of Noise in Video Systems," *Journal*, pp. 458-466, Apr. 1968). It is basically a wideband (10-Hz to 17-Hz) millivoltmeter with two independent detectors, true rms and peak-to-peak calibration. The measuring range of -85 dB, referred to the standard picture and blanking value of 0 dB = 0.714 V, is obtained by gating out the sync and blanking pulses and measuring the remaining noise level. Standard weighting filters, low- and high-pass filters, permit complete analysis of

the noise component. An oscilloscope output is available for this purpose. Plug-in filters for NTSC or PAL enable the use of the same instrument for different standards. A sag and tilt corrector is incorporated in the instrument. The repeatability of the Video Noise Meter is of the order of 0.1 dB. It is priced at \$4,400. The filter is priced at \$425.

An **environment-resistant oscilloscope**, Model 1700 E, has been announced by Hewlett-Packard, 1601 California Ave., Palo Alto, CA 94304. The oscilloscope can be used in dusty environments, or in chemical plants or other places with adverse atmospheres. It can be used even under water with slight modifications. On an ac power line Model 1700E consumes less than 25 W; on an optional internal battery pack or on dc line the power consumption is 18 W, thus no vent holes are required. The instruments can be sealed with no concern for heat build-up within. The amplifiers have 10-ns risetime (35-MHz response) and 10-mV/div minimum deflection factor. It is a dual-channel instrument with time base capabilities suited as well for digital testing as for analog measurements. Maximum sweep speed is 10 ns/div. The price is under \$2,600.

The **4210 Series Variable Electronic Filters** has been announced by Ithaco Inc., 735 W. Clinton St., Ithaca, NY 14850. The series consists of five models designed for measurement of a wide variety of signals in the presence of interference. The five models cover the frequency range, 0.01 Hz to 1 MHz. Each model covers six decades. Four-pole Butterworth filters are used in the Normal mode for maximal flat amplitude response. A four-pole Bessel filter is used in the Pulse mode to provide superior transient response. The series has controlled filter characteristics with frequency accuracy of  $\pm 1\%$ , phase shift of  $\pm 2^\circ$  and amplitude response of  $\pm 2$  dB. A table with the -3-dB frequencies, center frequency, -3-dB bandwidth, noise bandwidth and filter gain for all settings is printed on the top. Price range for the five models is \$695 to \$765.



A new **omnidirectional microphone**, designated Model 655AL, has been announced by Altec Lansing, 1515 S. Manchester Ave., Anaheim, CA 92803. The microphone has a flat response to provide faithful reproduction of drums, acoustic guitars and other musical instruments requiring exacting sound fidelity. The microphone

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has a frequency response of 50 to 15,000 Hz and an output impedance of 150 or 250  $\Omega$ . Pop and windblast noise have been virtually eliminated by filtering which precludes the need for a windscreen when the microphone is used outdoors. It is priced at \$85.

**The HP Model 4304B dc volt-ammeter** has been announced by Hewlett-Packard, 1601 California Ave., Palo Alto, CA 94304. The instrument measures voltages from  $\pm 1$  mV to  $\pm 300$  V full scale in 12 ranges and currents from  $\pm 1$  nA to  $\pm 300$   $\mu$ A full scale. Accuracy for both voltage and current measurements is reported at  $\pm 1.5\%$  of full scale. An FET chopper amplifier is incorporated to assure negligible drift and low noise, with drift less than 0.2% of full scale and internal noise less than 1% of full scale; ac voltages 50 Hz and above and 40 dB greater than full scale affect readings less than 1% of full scale. The negative input terminal can be floated up to  $\pm 500$ -V dc above chassis or power line ground. The instrument can also be used as a dc amplifier. Battery operation using rechargeable nickel-cadmium cells is available as an option. Model 4304B is priced at \$410.



**A servo control professional audio recorder/reproducer** which can be expanded to higher track configurations has been announced by 3M Company, St. Paul, MN 55101. The dc servo capstan system, which is incorporated in the 3M professional recorder Isoloop differential drive system, enables operation of the unit at variable speeds ranging from 5 to 45 in/s in addition to fixed speeds of  $7\frac{1}{2}$ , 15 and 30 in/s. The machine, designated Series 79 3M Professional Audio Recorder/Reproducer is available in 8-, 16-, and 24-track configurations. The 8- and 16-track machines can be converted to higher configurations by means of expansion kits. Space has been provided in the recorder cabinet for addition of noise reduction circuitry. Complete record electronics for each track

has been reduced from four printed circuit cards to one. Remote transport and electronic controls are incorporated in the recorder cabinet but may be removed for use at the control console. A convertible 110-120-V power supply is provided to make the recorder/reproducer adaptable for overseas applications.

A Series 79 synchronizer is available as an accessory to provide versatility of the audio portion of videotape productions. The unit is capable of synchronizing the recorder to quadruplex or helical videotape recorders, film chain or another audio recorder. The SMPTE time code is utilized by the synchronizer to phase lock the video and audio recorders together. Prices are about \$29,000 for the 24-track recorder, \$20,000 for the 16-track and \$15,000 for the 8-track. The synchronizer is priced at about \$8,500. Prices for conversion kits range from about \$7,500 to about \$17,500.



**A film lock system** for the Ampex MM-1000 multichannel recorder has been announced by Ampex Corp., 401 Broadway, Redwood City, CA 94063. The new system permits filmmakers to record up to 15 channels of sound, add special effects, dub down to one or two channels and play back the final soundtrack in synchronization with the pictures. Also, the MM-1000 when equipped with the film lock can start, stop and reverse in synchronization with sprocketed equipment and can return to sync from a stop. The system locks an MM-1000 to an interlocked film chain of projectors and sprocketed recorders. It consists of a tachometer coupled to a projector which produces 100 pulses per film frame. The pulses are compared with a prerecorded control track on the MM-1000 to maintain synchronization. The film lock system is mounted on an MM-1000 under the electronic channel controls for ease of operation. Controls on the film lock rack permit raising or lowering the original soundtrack a half tone for special sound effects. The film lock is priced at \$7,500.

**The Arriflex Automatic Remote Control** for the Arriflex 16BL for use with the Arrivox-Tandberg Tape Recorder (*Journal*, p. 676, Aug. 1971) has been announced by Arriflex Co. of America, 25-20 Brooklyn-Queens Expwy. West, Woodside, NY 11377. The device enables the cameraman

to control the stop-start functions of the recorder remotely and automatically as he stops and starts the camera. It can also be used with other tape recorders designed for remote control of stop-start. The device consists of a miniature electrical relay installed on the start-mark circuit board of the 16BL, a new 6-pin Pilotone outlet on the camera and a special Pilotone cable. The parts for the Automatic Remote Control come in a kit priced at \$80. Installation is priced at \$36.

**A desk-top cassette copier** designed for operation by nontechnical people has been announced by Telex, 9600 Aldrich Ave. South, Minneapolis, MN 55420. The copier is available in two configurations. Cassette Copier I (master) provides all controls and makes one cassette copy from the original. It has add-on capabilities for two Cassette Copier II (slave) modules. Each Copier II makes two cassette copies but relies on Copier I for power and control. Copier II has a single emergency stop button. Inserting a cassette in the original (master) position automatically turns the unit on. All the operator has to do is to set the track selector to copy channel 1 or 2 or both, activate the rewind button to assure that all cassettes are copied from the beginning of the tape and then push the copy button to automatically copy the selected channels. The Cassette Copier is priced at under \$900.

**The Tele-Beam Super**, a large-screen TV projector that can project images as large as  $9 \times 12$  ft, has been announced by Kalart Victor Corp., Plainville, CT 06062. A newly developed cathode-ray tube employing rare earth (white) phosphor is used to double the normal light output and make possible a large picture under high ambient light conditions. The projector is available in models for off-the-air application and closed-circuit use through inputs from VTR, camera or videocassettes. All models are portable and include a projector head, control unit with 6-W high-fidelity audio amplifier, 12-ft power cable, 3-ft interconnecting control cable and termination fitting. Price range is from \$3,172.35 to 3,715.60. The projector can be supplied with a Cris-Pic TV Image Impressor (*Journal*, p. 1057, Nov. 1970) for an additional \$671.35 for any model.

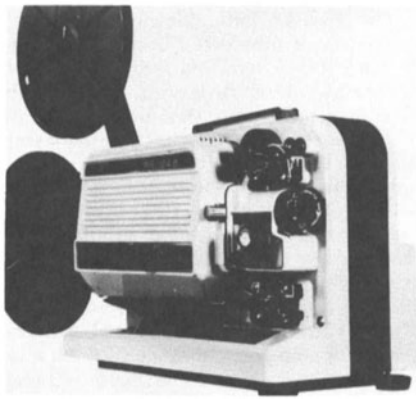
**The International TR 16mm projector** has been announced by International Audio Visual, Inc., 119 Blanchard St., Seattle, WA 98121. The projector consists of four basic modules, the motor, cam tank, amplifier and gate assembly. It is available in both a manual and a self-threading model. It has modular construction for faster and easier repairs. An automatic loop restorer protects damaged film from further damage. The projector has an  $f/1.4$  lens and solid state amplifiers with integrated circuits—separate bass and treble controls. The projector does not have stop-frame or reverse capability. Prices begin at \$682.

**The Heurtier ST 42 Stereo Super-8 Projector** with stereo sound has been announced by Hervic Corp./Cinema Beau- lieu, 14225 Ventura Blvd., Sherman Oaks,

CA 91403. The new projector provides individual volume controls for both microphone inputs. In addition to stereo sound, other sound features include VU-level meters (one for each track), sound superimposition, echo effect, tone control for bass and treble plus a selector switch for recording four different modes. The recorder/playback soundhead includes an instant flywheel and three magnetic soundheads to provide direct control during recording. The projector accepts 800-ft reels and provides speeds of 18 to 24 frames/s. It is priced at \$1,099. A monaural, non-stereo version is available at a price of \$769.45.




**The Bauer T16**, a new super-8 sound projector, has been announced by Allied Impex Corp., 168 Glen Cove Rd., Carle Pl., L. I., NY 11514. Features include an instant replay setting and a reel capacity of up to 600 ft. The projector can show films with magnetic sound at 18 or 24 frames/s or silent films. A high light output is provided from a 12-V, 75-W quartz-iodine bulb. The bulb works in conjunction with a cold light mirror which reflects only visible light to prevent overheating of the picture image. The projector is priced at \$299.95, including microphone, bulb and 600-ft reel.



**The Heurtier P6-24B Dual 8 projector** in silent or sound versions has been announced by Hervic Corp./Cinema Beaulieu, 14224 Ventura Blvd., Sherman Oaks, CA 91403. The frame conversion unit has a knob which is pulled out or pushed in to accomplish conversion between super-8

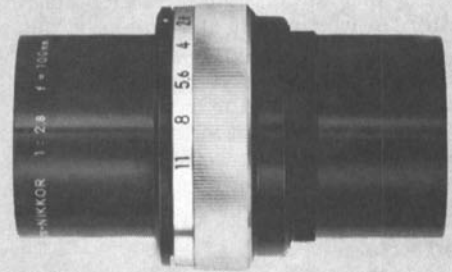
## Nikon 100mm f2.8 Repro-Nikkor lens

This special lens was designed primarily for use on animation cameras such as Oxberry and Acme. The 160 lines per millimeter resolution effects a noticeable improvement in image quality.

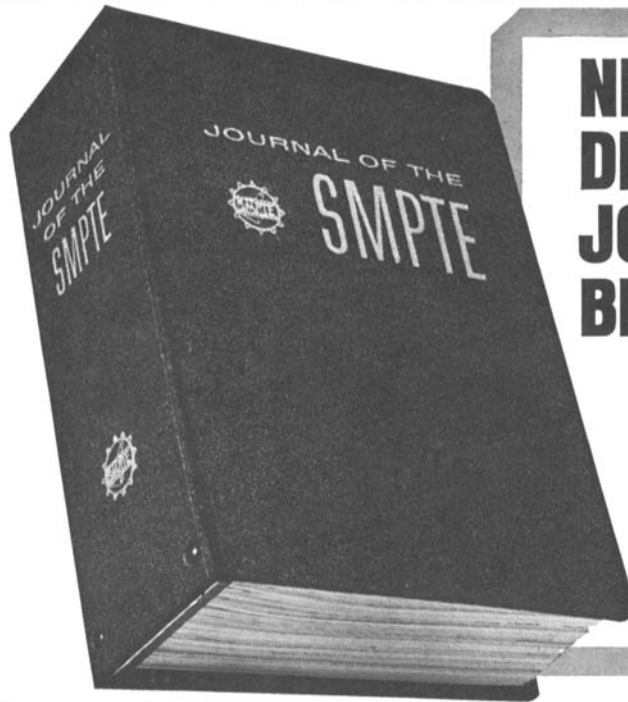
Adaptation is relatively simple—design work has already been done on an Oxberry adapter. For details, call or write Nikon, Inc./PTP Inc., Garden City, N.Y. 11530. (516) 248-5200. Telex 125855. Subsidiary of Ehrenreich Photo-Optical Industries, Inc. 

Focal length	100mm
Aperture range	f2.8-22
Optimum magnification	1.5:1
Magnification range	2.5x-1x (70mm-35mm 35mm-35mm 35mm-16mm 16mm-16mm)
Overall working distance	Approximately 400mm
Distortion	+0.1% on 50mm
Color correction	Apochromatic
Resolution	160 lines/mm
Price	\$1150

Price subject to change without notice.



**Off-the-shelf special optics by Nikon**



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# Video Cartridge, Cassette and Disc Player Systems

## Proceedings of the Symposium

OCTOBER 7 AND 8, 1971, MONTREAL

Stanley F. Quinn, *Chairman*

**From the Foreword:** It was the purpose in organizing the Symposium to examine the new technology of videoplayer systems and to consider the likely impact on education, industry and the home. It was hoped to attract not only engineers but also educators and other professionals interested in this new medium of communication. There were four sessions: Perspective Session, in which particular emphasis was placed on the social and economic aspect of the new technology; Utilization Session, in which plans and experience of prospective users were outlined; and two Technical Sessions, which provided a review of the technology of storing audio-video information and new information about videoplayer systems. The matter of the multiplicity of systems standards received particular attention in several of the papers on both days.

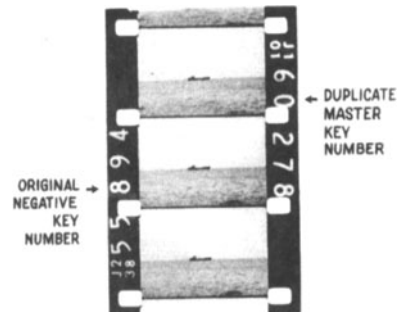
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and 8mm framing. The projector uses a quartz lamp with a built-in reflector. The lamp is self-centering and does not require adjustment. The voltage (117 V, 60 Hz) is permanently set. Features include projection speeds of 6, 8, 18 and 24 frames/s, automatic film threading and an SOM Berthiot 17-28mm zoom lens (f/1.3). The silent version of the P6-24B is priced at \$274.45. The sound version is priced at \$769.45.



A key-numbering service has been announced by Cinema Research Corp., 6860 Lexington Ave., Hollywood, CA 90038. The firm has developed optical printers for simultaneous reproduction of original key numbers from either side of 16 mm original negatives onto optical master or negative. The technique is intended to eliminate problems involved with other methods of synchronizing optical Ektachrome masters and duplicate negatives with workprint key numbers. Other methods include time-consuming visual synchronization and frequent film damage in coding and double printing. The key-numbering service is supplied by Cinema Research. The special 16mm camera and projector movements necessary are manufactured by Research Products, Inc. They are designed for use with any Acme head and together are priced at \$4,000.

A new and improved model of a Backflush Water Microfilter has been announced by the Oscar Fisher Co., Inc., Newburgh, NY 12550. The backflush principle has been modified so as to give more efficient backflushing of filtered-out residues. No valve on the downstream side of this microfilter is necessary. A continuous supply of clean water, devoid of particulate matter, is provided. Filtering action in the Backflush Microfilter is by means of a permanent, sintered bronze core, which needs no replacement. A simple change in valve position reverses the flow of water through the filter core. Accumulated sludge washes away through a petcock at the base of the unit. The filter is clean and ready for reuse in one or two minutes. Filter cores are furnished with fineness ratings ranging from either 2 to 4 or 6 to 10 µm. The filter unit has a flow rate of 10 gal/min with a pressure drop of 1 psi. Either hot or cold water may be filtered, and if greater flowrates are desired several of these units can be operated in parallel. The main body of the unit is fabricated of cast bronze with ½-in IPS connections. It is stated that no maintenance except for backflushing is necessary. The filter is not recommended for the filtering of photographic solutions, other than water. Price of the Backflush Microfilter is \$55.00.