

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.



A tape-to-film transfer system of broadcast quality has been announced by Teledyne Camera Systems, 131 N. Fifth Ave., Arcadia, CA 91006. Designated Model CTR-2 (Color "Telefilm" Recorder), the system includes a special, high-resolution, high-light-output display tube, complex signal processing, complete built-in test facilities, pneumatic-transport camera and a new closed-loop phase-locked camera drive system. Special consideration has been given to human factors in the system's operation.

Prior to photographing program material from the face of the 19-in display tube, the video signal undergoes extensive processing. Both horizontal and vertical aperture equalizers are used to provide optimum detail resolution. The composite signal is routed to a comb filter decoder to separate chrominance and luminance. Maximum chrominance information is obtained with minimum degradation of the luminance signal. A built-in vectorscope permits analysis of the demodulator output. The signal is applied to an electronic mask in the gamma amplifier and is gamma corrected to best match the transfer function of the film. The system is suitable for both negative and reversal color film. Scan reversal is available.

No external test equipment is needed other than that normally available in a modern TV studio. A built-in waveform monitor is switchable to all major subsystems. Independent brightness and gain controls for each gun allow high exposure levels. A built-in ten-step gray scale generator and a photometer with

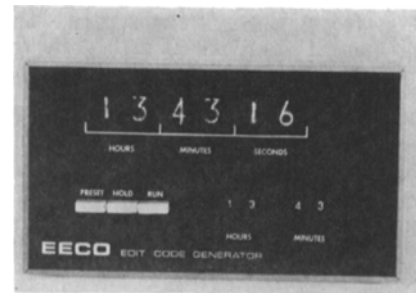
high- and low-level scales and digital readout permit setting correct relative level of each color prior to recording. Exposure repeatability is within 2% at two light levels.

The camera is the Teledyne DBM-64B equipped with a 35mm f/1.3 lens. A burst of air advances the film. A fixed register pin assures accurate registration. All moving parts are rotary with no cams, claws or reciprocating parts and vibration is eliminated. The phase is continuously compared with the air discharge of the film pulldown. On 60-Hz systems the camera runs at a synchronous speed of 24 frames/s with every fifth TV field blanked out by a shutter. On 50-Hz the camera runs at 25 frames/s with no field blanking. The CTR-2 is priced at \$75,000.

The CTR-2 is designed for film laboratories who make large numbers of prints for domestic and foreign distribution. It will be useful to educational audiovisual activities, to large industry, aerospace, and military users. It provides a means of recording and storing certain computer data.



A time-code videotape editing system developed by RCA Government and Commercial Systems, Moorestown, NJ 08057, is based on recording a time code on the tape cue track. The code is a succession of digits that identifies the hours, minutes, seconds and each frame of the recorded material. When editing takes place, the RCA system's programmer unit controls the editing function by comparing time-code information stored in its memory with the codes on the tape. The programmer is, in effect, a miniature computer which automatically controls the tape machine transport — starting, stopping, playing or rewinding the tape being edited — in addition to instructing the electronic editor through an editing sequence. The programmer's other automatic functions include rapidly searching for a specified TV frame, synchronizing a selected TV frame with any other on a second videotape machine and starting the machines at a previously determined point. The time-code editing systems are supplied on a custom basis. For a typical editing situation involving two videotape recorders, the complete editing system would cost about \$40,000. The price would not include the videotape recorders.



The BE-520 Edit Code Generator, the BE-420 Edit Code Reader and the BE-400 Video Character Generator have been announced by EECO Broadcast Group, 1441 East Chestnut Ave., Santa Ana, CA 92701. The units conform to the proposed Time and Control Code for Videotape and Audio Recorders reported by Ellis K. Dahlin, Chairman of the SMPTE Subcommittee on Videotape and Audio Time Control Codes, in the December 1970 issue of the *Journal* (pp. 1086-1088).

The BE-520 Edit Code Generator produces the proposed Edit Code used for videotape indexing and editing. The code is a digital electronic signal — 80 bits per video frame — recorded on audio and helical or quadruplex videotapes. It supplies accurate control indexing representing real or elapsed hours, minutes, seconds and frame count.

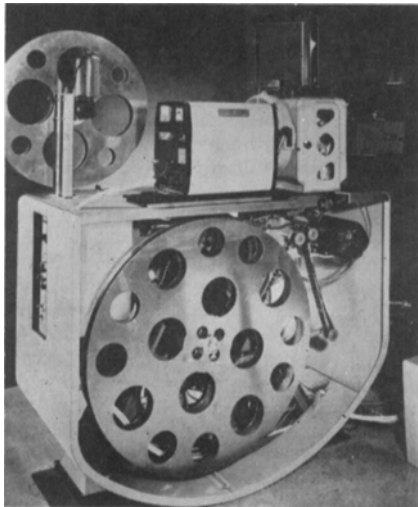
The BE-420 Edit Code Reader reads the Edit Code signal during tape play, fast forward or rewind. It produces a visual display of time and frame count and also produces supplemental outputs that can be used in synchronizing multi-unit operations. The reader is used for fast location of desired scenes and for preparing a schedule of scenes for later electronic editing or for inclusion in live programs.

The BE-400 Video Character Generator also reads the Edit Code signal during tape play, rewind or fast forward and generates a visual display on related video monitors. The display can be rapidly adjusted for size and location. It can appear on the monitors without affecting video signals being broadcast or transferred from recorder to recorder. It can also be added to the video signal being transferred from a quadruplex recorder to a helical recorder. A pre-edit review can then be made on inexpensive helical equipment and an editing schedule written showing desired scenes and sequences.

Each unit is 4.9-in high, 8.3-in wide and 11-in deep. The units can stand alone or be rack-mounted in pairs. The BE-520 is priced at \$2,625; the BE-420 at \$2,890 and the BE-400 at \$3,195.

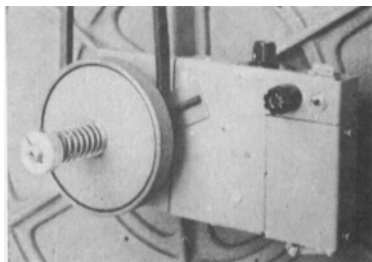
The Selectake, a counter locator which will search and automatically locate a pre-selected tape position, has been developed for 8- and 16-track 3M brand professional recorders, it was announced by 3M Company, Professional Audio Products, 300 South Lewis Rd., Camarillo, CA 93010. The instrument can be used during a recording session to search the tape automatically and to locate previously logged takes. The tape is then stopped at the pre-selected location within ± 2 counts of the readout counter. It can be

overridden manually. The Selectake has four digital display tubes to indicate recorder tape position. Controls include the "preselector" which sets the location of a predetermined tape position on the recorder, a "count enable" which allows the operator to maintain a registered count during such modes as editing and a "search-stop enable" which inhibits automatic search operation. It is priced at \$895.



The Eprad Sword (Show-Without-Re-threading Device) a projector described as "the final link in the automation chain" is a product of Eprad Inc., Box 4712, 123 West Woodruff, Toledo, OH 43620. The machine has 3½-h capacity and is capable of carrying an entire show on a projector with up to 14,000 ft on one reel. However, the manufacturer recommends the use of two projectors. In conjunction with Eprad Automation Controls, the Sword device will provide total automation, rewinding the projected reel completely unattended, without necessity for rethreading. During the make-up procedure of the program reel, foil strips are

attached to the edge of the film in appropriate locations to signal the controls which initiate start and stop, changeover, intermission, rewind, etc. Take-up of the film is controlled, throughout the winding from the hub to the full 36-in diameter, by a tension-sensing device which controls the take-up reel drive-motor speed. Features include a make-up spindle attachment in which the same devices control tension in the make-up and breakdown procedure. A speed control knob operates for clockwise rotation when turned in the other direction. The main drive automatically takes up or pays out film from the large reel, maintaining constant tension irrespective of direction or the amount of film on the reel. Prices, including the make-up spindle and control, range from about \$3000 to about \$4000 when the Sword is equipped with a built-in soundhead and provision for automatic rewinding by reversing through the projector. The Sword is also available with packaged automation ranging up to total theater automation at about \$11,000 for two units with soundheads and all automation controls.

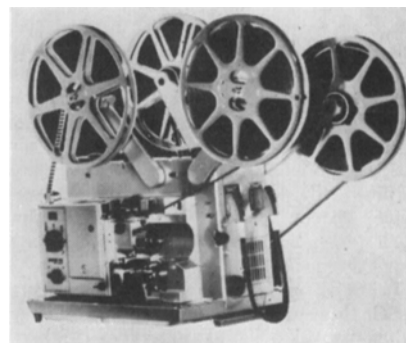


A magazine safety control, designated MSC-2, which mounts onto the drive shaft assembly of the lower take-up magazine of a projector, has been announced by Century Projector Corp., 165 W. 46 St., New York, NY 10036. MSC-2 is a solid-state device operating on a magnetic principle and does not require bearings, belts or other moving parts. No com-

ponent of the control touches the film. The lower film magazine is the final unit of the projector setup that handles the film; any abnormality which prevents the film from properly winding up on the take-up reel will stop the operation of the projector. The device is designed to operate independently of any automation equipment and can be installed in theaters that are not automated.

The MSC-2 assembly clamps the fixed hub of the lower magazine and its rotating permanent magnet becomes part of the spindle assembly. As the permanent magnet rotates it passes a sensor inside the device. The pulses from the sensor are counted by the solid-state circuit in the assembly. As long as the induced pulses are uniform and regular the circuit does not react. If the lower take-up reel starts to increase in speed the speed of the pulses will increase, cutting off the power relays controlling the projector motor and arc lamp. The MSC-2 is equipped with a signal light. If power is cut off the light will go out and an audible signal will be given. The device is priced at about \$100.

A new xenon lamphouse, called the Christie Xenolite Lamphouse, Model BFD16F, has been developed by Christie Electric Corp., P.O. Box 60020, Los Angeles, CA 90060. This lamphouse for motion-picture theater projection has a computer-designed deep dish, explosion-proof reflector. It has been designed for use with vertically-operated xenon bulbs. It is included in various Christie systems.



Two new 16mm projectors, the Bauer P6 Studio, a double-band sound projector, and the P6 Synchron sound projector, have been announced by Allied Impex Corp., 168 Glen Cove Rd., Carle Pl., L.I., NY 11514.

The P6 Studio (illustrated here) can be used for post-production operations, such as editing-control, sound-transfer, etc. The picture projection side provides projection of 16mm film, reproduction of optical or magnetic sound, recording of magnetic sound and transfer of optical sound to magnetic track on picture film. The magnetic tape deck (perforated 16mm tape) permits reproduction of magnetic sound, center and edge track; recording of magnetic sound, center and edge track; and transfer of magnetic sound from center to edge track, and vice versa. The projector also permits transfer of optical sound to the magnetic deck side to record on either center or edge track; transfer of magnetic sound from the pic-



The AKAI Model VT-100, a self-contained, battery-operated videotape recorder using ¼-in tape, has been announced by Akai America, Ltd., 2139 East Del Amo Blvd., Compton, CA 90220. The system includes a camera, videotape recorder-player, battery charging adapter and a built-in video monitor which provides instant replay of picture and sound. The camera has a zoom lens, built-in microphone, optical viewfinder and a built-in automatic light compensator. The

VTR utilizes twin, helical-scan rotating heads and has a recording time of 20 min using a 1200-ft tape. It can operate on ac or dc and weighs about 10 lb. The video monitor, which attaches directly to the VTR, contains a 3-in picture tube with a 50° deflection angle as well as all normal controls for TV picture adjustment. The system also includes an ac adapter/battery recharger capable of recharging the batteries in 8 h. The complete VT-100 system is priced at about \$1,295.

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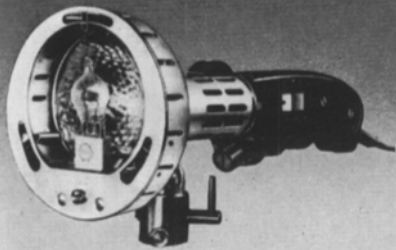
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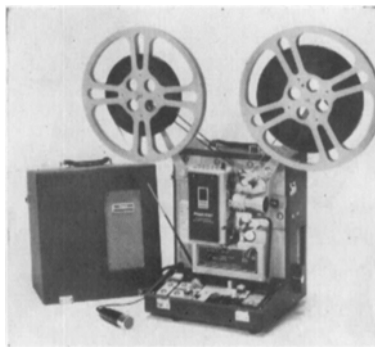
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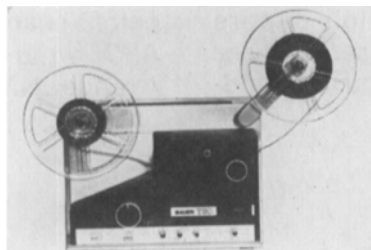
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ture side to the magnetic deck side and transfer of magnetic sound from the magnetic deck side to picture film. The unit provides lip-sync and a specially designed recording control permits sound-on-sound recording on either the picture film or the magnetic sound deck. A built-in monitoring amplifier can be used to monitor either the picture film or the tape deck. The P6 Studio is priced at \$3,575.

The P6 Synchron is used for 16mm film, TV production and processing laboratories. It has a synchronous motor for exact speed accuracy at 24 frames/s, making it possible to interlock with other projectors or sound units. It has quick-access manual threading. Power rewind is possible without changing reels. The P6 Synchron plays back optical or magnetic sound and records magnetic sound. It also allows superimposing of sound on sound. The price is \$1,495.



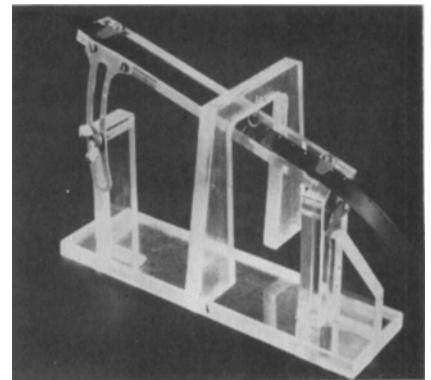
A new 16mm Kodak sound projector, magnetic-optical, Model AV-12M6 has been announced by Eastman Kodak Co., 343 State St., Rochester, NY 14650. The projector provides both magnetic and optical sound playback as well as magnetic recording on full, half or quarter-track film tracks at two speeds. The machine is equipped with a solid-state amplifier providing a 12-W "music power" output and a frequency response of 20 to 35,000 Hz. Features include a rubber shock-mounted mechanism for quiet operation, tungsten carbide pull-down tooth for easy film movement and permanently attached overhead reel arms for quick setup. The projector has a 2,000-ft film capacity and has an automatic-shifting three-bladed Super-40 shutter to provide optimum brightness at silent and sound speeds. The AV-12M6 is priced at \$1,250.



The Hahnel VB-200 Super 8/Single 8 Editor-Viewer has been announced by Allied Impex Corp., 168 Glen Cove Rd., Carle Pl., L.I., NY 11514. The unit has a 4½- by 3½-in Fresnel screen and utilizes a "V" channel film guide designed to eliminate film threading. The machine has

only one sprocket wheel. In operation, a roll of film is positioned on the feeding reel. The end of the film is pulled out and inserted into one of the slits on the take-up reel. The film is placed under the sprocket wheel and slight pressure is applied to a red bar on the front of the unit. The "V" channel opens and the film drops into it. When the bar is released the editor-viewer is ready for use. The price is \$59.95.

An auxiliary lens designed for the Kodak Super-8 Ektagraphic 120 projector to double the image size without increasing projection distance when used with the 22mm prime lens of the projector has been announced by Buhl Optical Co., 1009 Beech Ave., Pittsburgh, PA 15233. The lens can be adjusted to give 54 to 58.5 in of screen width from a projection distance of 10 ft. It is self supporting and attaches to a mount secured to the projector housing. The price is \$29.70.



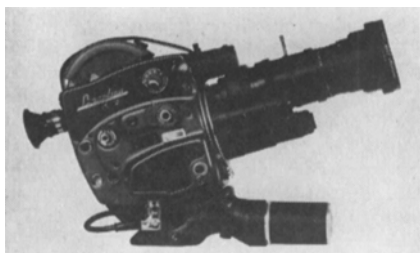
A device which uses the rounded end of a common paper clip sliding down an inclined plane to detect lubrication coatings on films has been developed at Eastman Kodak Co. It was reported at the Society's 109th Conference in a paper by T. Anvelt, J. F. Carroll, Jr., and L. J. Sugden ("Processed Film Lubrication: Measurement by Paper Clip Friction Test and Improvement of Projection Life"). The increased use of sprocketless amateur movie projectors has intensified the need for the lubrication of processed motion-picture film; however some processed films have not been effectively lubricated and the "paper-clip test" using a special slider was devised. The device can test even small areas of film surface, such as the narrow margin between perforations and film edge. It is commercially available at a price of about \$35.

The Model 772Q Dynamic Q Dissolve, an adaptation of the earlier Dynamic Dissolve unit, has been announced by Spindler & Sauppe, Inc., 13084 Satocoy St., North Hollywood, CA 91605. The new unit is designed to cue a standard tape recorder to control audio-visual slide presentations involving a mixture of multi-speed dissolves and special effects. It offers a multi-function dissolve and a self-contained mini-programmer in a single package. It can operate with two S&S Slectroslide projectors or with Kodak Carousel (or Ektagraphic) projectors. Using front panel pushbuttons, the operator can program medium dissolve, lap dissolve

(variable from 3 s), cut, standby and "alternate" functions on the two slide projectors. The pushbuttons activate internal audio tone generators, the output of which is recorded on one track of a reel-to-reel stereo tape recorder. When played back, the programmed magnetic tape automatically controls the entire presentation. Model 772Q is priced at \$865.

The Crystal Vision Stretch Screen produced by Charles H. Brotman, 201 E. 36 St., New York, NY 10016 (*Journal*, p. 341, Apr. 1971) is available in three sizes, widths of 8, 12 and 16 ft that can be stretched to widths of 10 to 40 ft. The basic screen is in a rectangular shape and can be stretched to various shapes including a bat wing effect. The price range is from \$170 to \$350, including rigging hardware. The screens are also available for rental.

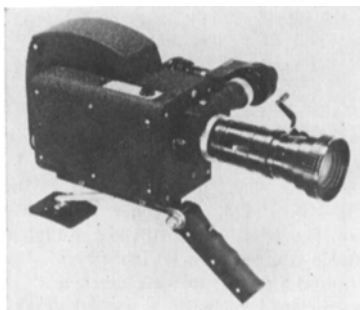
Reinforced fiber glass plastics used for stage sets and backdrops have been announced by M. G. Gill Corp., 4050 East St., El Monte, CA 91731. The panels are fire retardant, moisture resistant and are not subject to warping. The scenes are painted on the glass fiber in a variety of colors. The panels are lightweight and the scenery is easily changed on the same backdrop. On one side is a scene which changes to another when flipped over, e.g., from a summer to a winter setting.



The Beaulieu R16B(PZ) 16mm camera with built-in power zoom has been announced by Hervic Corp./Cinema Beaulieu, 14225 Ventura Blvd., Sherman Oaks, CA 91403. The camera has an integral power zoom coupled to the Angenieux 12-120mm "auto" zoom lens to provide an infinitely variable zoom range from 3 to 15 s. Zoom speeds can be changed while running and the power zoom can be manually overridden when desired. The camera also has an automatic pre-focus control which automatically zooms the lens to its maximum telephoto position and at the same time automatically opens the diaphragm to its maximum aperture to provide the shallowest possible depth of field required for critical focusing. Other features include an automatic exposure control system, lens interchangeability, mirrored shutter and extremely bright reflex viewfinder. The camera weighs 4½ lb. The price is \$2,474.50.

The Beaulieu 4008ZM2 super-8 camera with double-system sync sound capability, an improved version of the 4008ZM (*Journal*, p. 605, July 1969), has been announced by Hervic Corp./Cinema Beaulieu, 14225 Ventura Blvd., Sherman

Oaks, CA 91403. Several sound systems can be used with the camera, such as Synchro Pilot, E.T.S., Erlson, Uher 1000N Neo-Pilot, Nagra, Stellovox and other similar ¼-in sync tape recorders. Other features include an automatic tape recorder Start/Stop control. The new camera retains the features of the earlier camera, including motorized macro focusing from front element to lens, a variable motorized zoom (2 through 12 s) and zoom speeds of 2 frames/s through 70 frames/s, variable shutter, and fully automatic exposure control. Price of the 4008ZM2 is \$899.

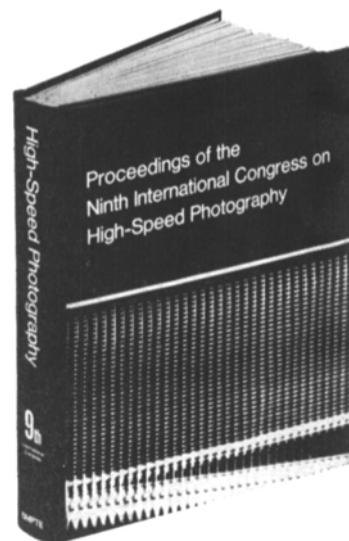


The Photo-Sonics Model 1PD 16mm camera with speeds from 16 to 200 frames/s has been announced by Instrumentation Marketing Corp., 820 S. Mariposa St., Burbank, CA 91506. It is a pin-registered camera designed for applications such as sports and documentation photography. Features include continuous reflex viewing with a swivel eyepiece to keep the image correct in any position. Dual preset speed controls are available to allow switching speeds while the camera is running. Daylight load magazines with capacities of 200, 400 and 1200 ft are available. Prices start at \$3,125.

The Shackman Super Seven Mark II, a camera using Polaroid film which fits principal makes of oscilloscopes, has been announced by Shackman Instruments Ltd., Mineral Lane, Chesham, Bucks.; England. The camera is available with a choice of aluminum alloy adapters which replace or fit onto the bezel of an oscilloscope. The camera has a self-cocking shutter with speeds of 1 to 1/125 s as well as "B" and "T" facilities. It is capable of recording a single sweep spot on BE (P11) phosphor tubes at a speed of 2 ns/cm. Three interchangeable film back modules are available with a choice of Polaroid 4- by 5-in single-sheet films, 3.25- by 4.25-in pack and roll films and, when fitted with various film holders, either 4- by 5-in cut film or 120 roll film. The camera is priced at less than \$500.

Two new conversion filters for use with Ektachrome EF film 7242 (tungsten) exposed under daylight conditions have been announced by Eastman Kodak Co. Kodak Wratten Filters No 85BN6 (equivalent to 85B + 0.30 neutral density) and No. 85BN3 (equivalent to No. 85B + 30 neutral density) are available in either 2- or 3-in gelatin film squares. The 2-in squares are priced at 87 cents. The 3-in squares are \$1.30.

New advances in high-speed photography



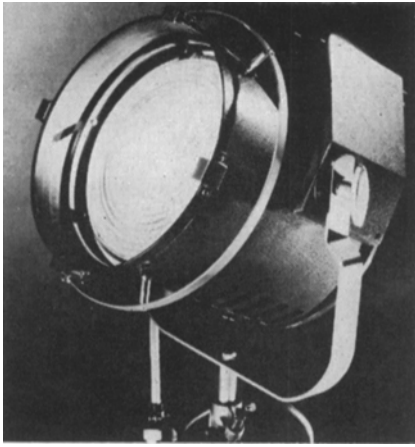
The most recent advances in the technology of photo-instrumentation have been made available to the scientific community in the *Proceedings of the Ninth International Congress on High-Speed Photography*. The volume includes the 107 papers presented at the Congress in Denver, Colorado on 2-7 August 1970, 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%.

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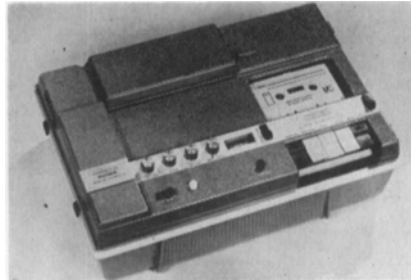
The 10-in Ring-focus Fresnel, first of a new line of Fresnel spotlights, has been introduced by Berkey Colortran, Inc., 1015 Chestnut St., Burbank, CA 91502. It is a 2000-W light which has a ring-focus mechanism which permits focusing from any point around the housing. The movable lens permits the socket to remain stationary with no flexing of the input wiring. A new split-diamond socket design provides 4-point contact which gives longer lamp life and eliminates cracked lamp posts. The socket is mounted to a quick-access rear door for rapid relamping. This feature permits lamp changes without moving the light or disturbing barn door adjustment. The new spotlight weighs 25 lb and accepts either 2000-W or 1500-W 3200°K Mogul bi-post lamps. It is available as a hanging model for grid use or as a stand model for floor operation. It is priced at \$225.

A television camera, 1½-in square and 5-in long, has been developed for military and space applications at Westinghouse Electric Corp.'s Defense and Space Center in Baltimore, Md. The camera weighs 9 oz and has a space-qualified ½-in-diameter vidicon. The camera's circuitry is virtually immune to the effects of vibration because it is made up of inherently rugged hybrid integrated-circuit units. Features include a switchable synchronization format enabling the use of American or European standards, an automatic light control capability and an all-digital sweep failure detection mechanism. According to the chief designer, James H. Mcacham, the camera was developed for testing as a feasibility prototype "to mate the latest technologies in the image sensor and packaging areas."

A new process to increase greatly contrast on both new and existing display storage tubes (DST) has been developed at Westinghouse Electric Corp., P.O. Box 284, Elmira, NY 14902. Most phosphors used in display storage tubes are light in color and have a high reflectivity. When a DST is operated under high ambient light conditions, the reflection of light from the phosphor results in a high background brightness and a low image-to-background brightness ratio. Thus, the image may become hard to resolve visually from the background brightness.

The Westinghouse enhanced tubes attenuate the ambient light both before and

after it is reflected from the phosphor, thereby reducing it by a factor equal to the square of the transmission of the attenuator. The result is a high display luminance against a much less intense background. This is contrast enhancement which provides easily readable images under high ambient light conditions.



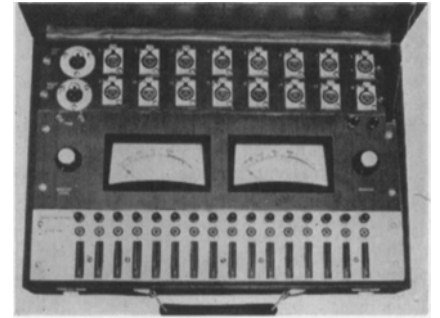
A series of three audio educational cassette equipments has been announced by Telex, 9600 Aldrich Ave. South, Minneapolis, MN 55420. They are a monaural play-only model, a record-play model and an audio-comparator which plays a pre-programmed cassette on one track and provides the student with a second track to record and play for the listen-respond-compare method of individualized instruction. Features include die cast aluminum tape transport frames and a two-motor drive system. A hysteresis synchronous capstan motor drives the tape in recording and play and a separate high-speed motor is used to fast forward and rewind the tape. Another feature is review control; by depressing a key, the tape is reversed at moderately high speed and returns instantly to play when the key is released. This allows the user to repeat sections of the tape at will without going through stop-rewind-stop-play functions. The play-only model is priced at \$179.95. The record-play model is priced at \$224.95, including a dynamic microphone and the audio-comparator, with microphone, is priced at \$249.95.

The Sony automatic-reversing stereo tape deck, Model 580, has been announced by Superscope, Inc., 8150 Vineland Ave., Sun Valley, CA 91352. The machine, designed specifically for automatic reverse operation, uses a central capstan to provide the same quality of performance in both forward and reverse modes. A solenoid-operated three-motor transport with a servo-controlled capstan drive motor is used to facilitate tape handling in all modes. Model 580 is priced at \$449.95.

A new dynamic cardioid microphone designated the MD 421 U-2 has been announced by Sennheiser Electronic Corp., 500 Fifth Ave., New York, NY 10036. The new microphone has a Cannon connector. The response is from 40 to 17,000 Hz, frequency independent directionality and high output level. The new microphone has no bass equalizer which is described as an advantage since in its main application as a recording studio instrument, all frequency shaping should be done at the console. It is priced at \$114.

The AKG D-160E omnidirectional dy-

amic microphone has been announced by North American Philips Corp., 100 E. 42 St., New York, NY 10017. Features include a removable, rugged wire mesh windscreen which, when mounted, locks securely to the microphone body. Without the windscreen, the microphone has an absolute linear frequency response. With the windscreen, the microphone has a presence rise of 4 to 5 dB between 3,000 to 12,000 Hz. It is priced at \$60.



Fnörk, a compact 16-channel portable microphone mixer, has been announced by Television Equipment Associates, Box 1391, Bayville, NY 11709. The machine has 16 low-impedance microphone inputs, miniature straightline faders, left-center-right microphone channel switching, two 20-W monitor amplifiers, VU meters, 16-6-4-2-1 channel output, 16 switchable 20-dB input pads for high-level mixing, and a built-in test oscillator. Fnörk is priced at \$1,600.

Three electronic intervalometers, Models FRI-1, 2 and 3, have been announced by Flight Research, P.O. Box 1-F, Richmond, VA 23201. All three models have a pulse width of 22 ms ± 5% (internal adjustment range for about 17 to 27 ms), input power of 28-V dc or 115-V ac, 60 or 400 Hz, output level of 28-V dc nominal, pulse power of ½ A and cine power for ¼ A or ½ A for 10-min intermittent 50% duty cycle. Model FRI-1 is uncalibrated and Models 2 and 3 are calibrated. All three models have a manually variable pulse rate control knob with output lamp flash and Off-Pulse-Cine switch. Model FRI-3 has a power lamp and time base multiplier. Model 1 is priced at \$259, Model 2 at \$329 and Model 3 at \$395.

New magnetic heads for professional motion-picture film recording have been announced by Nortronics Co., 8101 Tenth Ave. North, Minneapolis, MN 55427. The new line includes 1-, 3- and 4-track 35mm record/playback heads with corresponding erase heads and 1-track edge, center and stripe 16mm record/playback and erase heads. All record/playback heads are optionally available with Mumetal, Alfenol or ferrite cores. Erase heads are supplied with ferrite cores only. All heads have relieved tracks, ground and polished into the faces after finishing. Each head in the line of ½-in and 1-in frame size units is available in a wide variety of electrical and mechanical configurations and mounting and terminal arrangements. Price range is from \$130 for a 1-track 16mm record/play head to \$290 for a 4-track 35mm record/play head.

The Oxberry Liquid Gate System has been announced by Oxberry Div. of Richmark Camera, 516 Timson Pl., Bronx, NY 10455. The system provides liquid immersion of the film without bubbles, streaks or turbulence. The film in the gate is passed through a controlled liquid environment but is dry at take-up. Precision pin registration is maintained and the film can be run forward, reverse, stop motion or freeze frame. Splices can be passed without causing bubbles or liquid spillage. A vacuum-liquid circulating system maintains the proper liquid environment in the printing gate and the vacuum collects and recirculates the liquid. A set of filters in the liquid path separates and filters out all particles above micron size to provide for a dirt-free aperture area. The window is made of an optically flat thick glass to minimize the effects of dust and dirt on its outer surface and is specially coated to maximize light passage. The system is self contained and transportable. The liquid gate is interchangeable with other Oxberry gates and is available for Acme and Research Products printers. It is priced at \$8,700.

A new soundtrack-developer applicator with stationary track rollers to eliminate application tracking errors has been announced by Carter Equipment Co., 232 Glasgow Ave., Inglewood, CA 90301. The applicator is available in all film formats as a single unit (16mm or 35mm) or as a combinations unit (such as 16/35, etc.). Price range is \$995 to \$1,295. An entire soundtrack system for developing Eastman Kodak type 7389, including two of each track applicators, solution feed system, film pre-dry facilities, wash-off units and loop trees, is priced at \$4,630.

A new film-splicing machine developed specifically for use with films having a polyester base has been announced by Gryphon Corp., 101 E. Santa Anita Ave., Burbank, CA 91502. Featuring the thermal butt-weld technique, splices less than 0.025-in wide can be made consistently in exact registration. The film thickness is increased by 0.004 in. Models are available for super 8, 16mm and 35mm motion-picture film, filmstrips and microfilm. The machine is priced at \$925 for any model.



The Find-R-Scope, a handheld infrared viewer of the active type operating in the near infrared range has been an-

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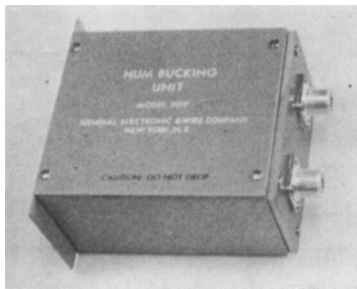
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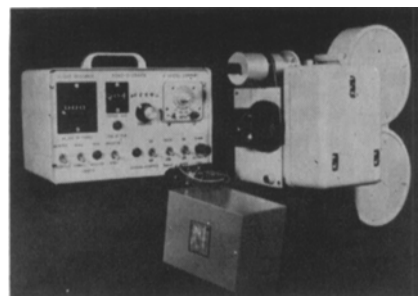
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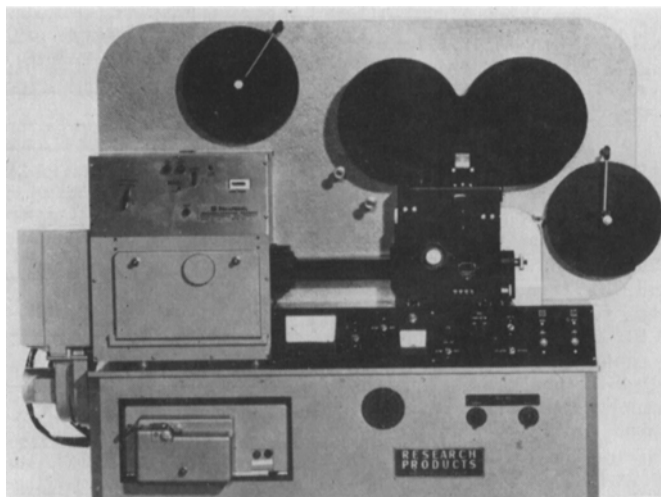
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nounced by FJW Industries, 215 E. Prospect Ave., Mt. Prospect, IL 60056. The viewer has wide monocular vision, focus range of 1 ft to infinity and an easily accessible "on" and "off" switch on the handle. Applications include nocturnal study of animals, search and surveillance purposes by law enforcement agencies and investigation of erasures and alterations of documents. Applications in the electronic industry include inspection of infrared emitting diodes and laser applications. It can be used in the photographic film industry for darkroom observation of film development processes and handling highly sensitive films. The price, including the battery, is \$490.

Norelco IF (intermediate frequency) modulation VHF transmitters have been introduced by Philips Broadcast Equipment Corp., One Philips Parkway, Montvale, NJ 07645. The remote-controlled transmitters were built partly in Sweden by Philips Teleindustries to meet United States requirements and were completed in Philips Broadcast's Montvale, N.J., plant. The transmitters have been designed for easy access to all modular components and circuits from the front. The 17.5-kW unit is 115-in long, 29-in deep and 83-in high. Features include continuous solid-state logic and use of long-life high-gain tetrodes power amplifiers.



A **photologging system**, introduced as an aid to highway engineering studies by Flight Research, a Cotel company, P.O. Box 1-F, Richmond, VA 23201, consists of camera, optics, control box and a data chamber. The technique is based on discrete exposures at defined mileage intervals rather than the time-base of 24 frames/s. Photologging is a new method of recording highway data on 35mm color film for a permanent, accurate record subject to detailed study and interpretation. The 35mm format provides high image definition and resolution. Data chamber readings provide significant information for automatic recording between each exposed frame. Data automatically recorded are mileage, direction traveled and frame number. A data slate allows users to write in such variable information as location, lens used and shutter speed. The system is priced at \$6,975.



A new daylight operating registration contact printer with the Bell & Howell additive lamphouse has been announced by Research Products, Inc., 6860 Lexington Ave., Hollywood, CA 90038. The machine operates on the step printing principle, i.e., the method of printing with two films held in stationary contact and exact registration during the exposure. It is advantageous for printing color duplicate negatives, color reversal, internegatives, interpositives, high contrast blue backing mattes, title mattes, etc. The printer is available in 16mm or 35mm configuration.

The camera assembly is equipped with a manually variable and an automatic dissolve shutter. The dissolve lengths are compatible with the Bell & Howell continuous printer. Other features include the facility for printing edge numbers on either side of the film, buckle switch, foot and frame counters and either notch or RF cue actuators for the light change and

automatic dissolve. The film movement incorporated in the printer is an Acme film movement with fixed register pins.

The Bell & Howell additive lamphouse incorporates a new optical system designed to achieve a variable balance between specular and diffuse light. By means of a light integrator, color banding is removed and an even field of illumination is produced at the film aperture. All light changes and automatic dissolves are programmed on punched tape and are read by a Bell & Howell tape reader. Two speeds are available — 40 ft/min continuous run only and 20 ft/min continuous run and stop motion mode for single frame tests or paper-to-paper printing. A manually operated Variac and voltmeter are supplied for adjusting the lamphouse. Film take-ups are driven by torque motors with individual pot controls. The printer is priced at \$41,500.