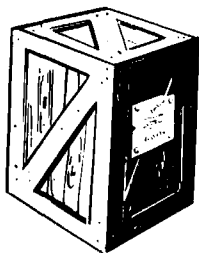


# new products (and developments)



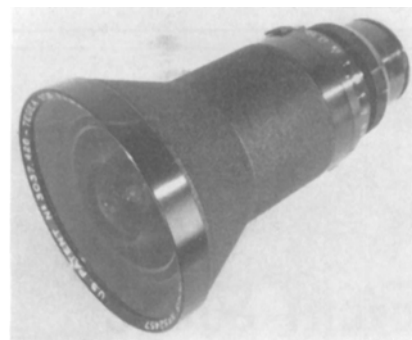
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Further information about these items can be obtained direct from the addresses given. As in the case of technical papers, the Society is not responsible for manufacturers' statements, and publication of these items does not constitute endorsement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

When Surveyer I landed on the Ocean of Storms on the moon on June 2 it immediately began transmitting pictures of the moon's surface, in both black-and-white and color, to the earth. A zoom lens designed and built by Bell & Howell Co. enabled the photographs to be taken from as close as 4 ft, displaying details of the lunar surface never seen before. As the spacecraft

filters: red, green, blue and clear. Any one of the filters can be placed in position above the lens by a slave motor upon command from earth. Colorimetric measurements and transmittance of the color pictures are made with the use of three colored filters. The filters have spectral transmissions such that, considering the lens transmission and the television camera vidicon spectral response, they will provide chromatic pictures. The lens is capable of operating in a vacuum environment of  $10^{-11}$  mm of mercury. Operating temperature range is from  $-65$  to  $+250$  F and the lens can also withstand the radiation dosages encountered in transit to the moon and on the moon's surface.

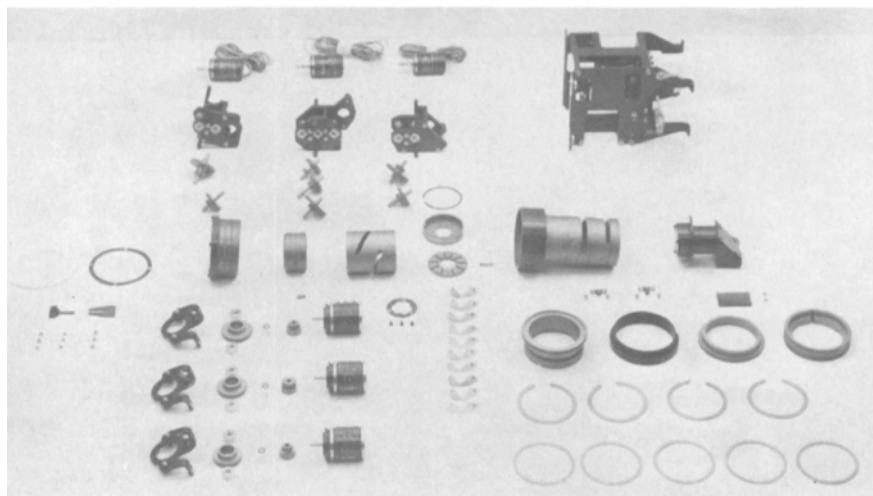
While lunar exploration with plans for landing human beings on the moon are well underway and tend to dim the news about weather satellites, these satellites continue their useful work.

Since the launching of Tiros I (*Journal*, pp. 272, 274, Apr. 1960), a series of Tiros and Nimbus weather satellites have been launched. (The Tiros satellites now in orbit are known as Essa I and Essa II. For the edification of the public, a weather satellite ground station can be seen in operation in the window of the RCA Exhibition Hall in Rockefeller Center, New York. Each time Essa I or Essa II, now orbiting the earth, passes within range, photographs



**Kinoptik 5.7mm f/1.8 Tegea Super Wide Angle Lens.**

The APT system also includes a Kinoptik 5.7mm f/1.8 Tegea Super-Wide-Angle Lens supplied by Karl Heitz, Inc. Mounted on the 1-in. diameter vidicon, the lens daily takes 200 pictures of the earth from an orbital height of about 680 mi. Especially protected against radiation, each lens covers a field of  $108^\circ$ , equalling an earth area of 2 million square miles. A  $40\text{-}\mu\text{s}$  exposure with an electromagnetic shutter produces an 800-scan-line picture on the vidicon for automatic transmission to receiving stations. Such line resolution makes landscapes two miles across clearly visible, giving detailed weather information even of the smallest part of the earth.



**Components for the variable focal length lens for the Surveyer TV camera.**

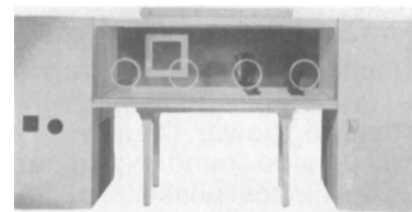
touched down, the "eye" of the system was activated with the zoom lens scanning in all directions by means of a revolving and tilting mirror. A  $360^\circ$  circle was made with an additional sweep both above and below the lunar horizon. Slave motors controlled from earth were able to focus, zoom and adjust the iris of the lens as well as the multicolored filter wheel. Specifications of the lens include: focal length range, 25mm to 100mm; focus range, 4 ft to infinity; aperture,  $f/4.0$  to  $f/22$ ; field of view,  $9.06^\circ$  to  $35.3^\circ$ ; image size,  $\frac{5}{8}$ -in. diameter circle. The lens assembly was mounted in a vertical cylindrical camera housing. A mirror placed above the housing can be rotated  $360^\circ$  about a vertical axis and can tilt about a horizontal axis to allow the lens to see objects that are  $50^\circ$  below the horizon to  $70^\circ$  above. The mirror unit and camera housing were made by Hughes Aircraft Co.

A Bell & Howell filter wheel mounted in the mirror housing contains four color

are received direct from space on the facsimile machine in the Hall. The weather exhibit, sponsored jointly by RCA and NASA, also features a life-size model of the Nimbus II.

The Essa II and Nimbus II are equipped with a camera system called Automatic Picture Transmission (APT) which automatically transmits weather pictures to one-man ground stations. APT pictures are normally recorded on paper by a facsimile machine rather than a kinoscope-film camera system, as with earlier Tiros pictures. Heart of the APT system is the RCA vidicon camera that has been specially designed to store the pictures for 200 s while they are being read out electronically to ground stations below. During the 208s that the picture and synchronizing signals are being printed on the 9-in. format provided by the ground station printers, the satellite moves 1,300 mi to take the next picture.

**The Arri Automatic Closure Eyepiece**, a device that automatically prevents stray light from entering the camera finding system, has been announced by Arriflex Corp. of America, 25-20 Brooklyn-Queens Expressway, Woodside, N.Y. 11377. Pressure against the eyecup opens the shutter mechanism automatically. When the pressure is removed the shuttering device closes automatically. If desired the eyepiece can be locked "open." A 15.5-mm recess is provided in the snap-on eyecup into which a prescription eyeglass lens can be installed. The device fits all Arri 35-2C cameras, all Arriflex 16M cameras, and all Arriflex 16S cameras with serial numbers above 5901. It is priced at \$148.



**The Bioclean Laminar/Flow Work station Model 342S** has been announced by Agnew-Higgins, Inc., 7532 Anthony Ave., Garden Grove, Calif. 92641. The work chamber is isolated from the personnel performing the work. Parts enter and leave through an access door and work is performed using shoulder length neoprene gloves. Designed for performing work under sterile conditions, the work chamber is designed so that clean air flows in laminar fashion from HEPA filters in one end to HEPA filters in the opposite end. These are reported to be 99.97% effective on particles down to 0.3 microns in size.

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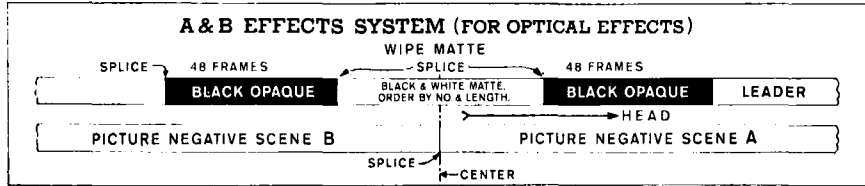
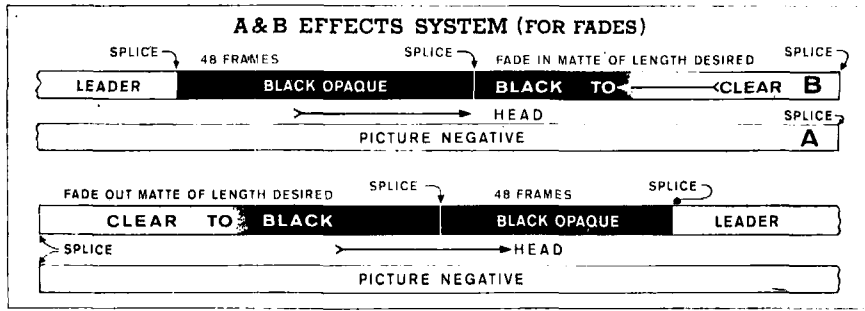


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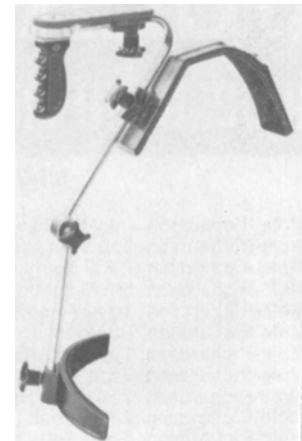


- NOTE: A. Mattes can be used in either A or B rolls  
 B. When effect mattes occur close together, continue with opaque black leader  
 C. Use normal A&B cutting methods for dissolves  
 D. All leader should be B&H perforated

A method for producing optical effects through A&B printing has been developed by Bob Richard, film editor for Don Feddersen Productions, assisted by Darrell Anderson of Howard Anderson Co. and Joseph Lee of Consolidated Film Industries, 959 Seward St., Hollywood, Calif. 90038. Basically, the system consists of a specially manufactured matte which is intercut with the original picture material during assembly for A&B printing. Previously A&B

printing had been able to create lap dissolves and fades in TV color prints. Other effects required the use of optical duplicate negatives. The new system, using black-and-white traveling mattes, makes possible numerous special effects at a small additional cost over that of regular A&B printing. The new method is presently available in 35mm Eastmancolor, but is adaptable to 16mm. Howard Anderson Co. is presently manufacturing some 40 or 50 different

matte effects of varying lengths and formats, and also plans to develop similar techniques for more sophisticated effects.




The Arri Body Brace, a lightweight brace designed for ease and convenience in handheld motion-picture filming, has been announced by Arriflex Corp., 25-20 Bklyn-Queens Expy. West, Woodside, N.Y. 11377. Parts that come in contact with the cameraman are foam-rubber-covered fiber glass. The brace is designed to rest firmly on the shoulder while an adjustable extension arm places a curved support across the waist. Special holding clips are provided for the power supply which rests on the back of the shoulder, counterbalancing the camera. The brace comes in two versions, the De-

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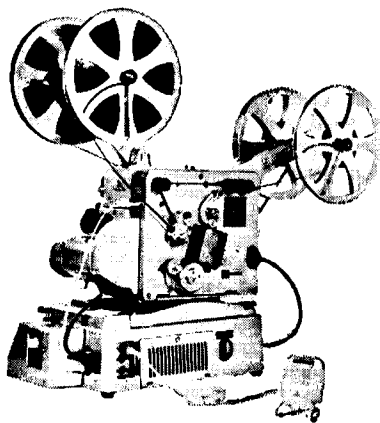
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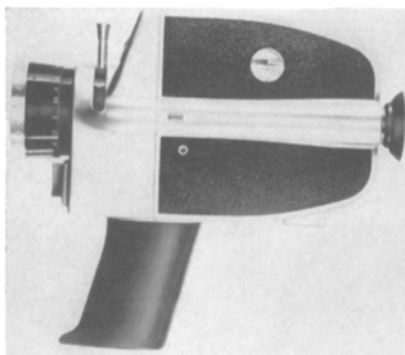
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Luxe model, supplied with a special Arri Pistol Grip, for use with the Arri 16S, Arri 16M and Arri 16BL. It is priced at \$149.50. The Utility model is supplied with a camera retaining screw and can be used with a variety of other motion-picture cameras. It is priced at \$124.50.

**Vitafix**, a new liquid fixer/hardener, has been announced by FR Corp., 951 Brook Ave., Bronx, N.Y. 10451. Vitafix is said to be noncorrosive and can be used for fixing all sensitized materials. It can be used with safety in stainless-steel sinks, trays or machines. A case of 12 qt (each qt makes 1 gal) is priced at \$19.20. The liquid is also packaged in 5 qt and 5 gal containers.

A new **panchromatic motion-picture film** with exposure ratings of 320 daylight and 250 tungsten for reversal processing has been introduced by E. I. du Pont de Nemours & Co., Wilmington, Del. 19898. Designed for use under very low light conditions, such as football photography, the new film, called Type 932, is said to be twice as fast as the firm's Type 931 film, previously described as the firm's "top speed" film. Type 932 can also be exposed at ratings of 160 daylight and 125 tungsten for processing as a negative. The new film is available in 100-, 200-, and 400-ft daylight loading rolls in 16mm, in 100-ft 35mm daylight loading rolls and in lab pack putups of 400-, 600-, 1000 and 1200 ft in 16mm. Only 400-, 500- and 1000-ft lengths are supplied

in 35mm lab pack. Processing of Type 932 is the same as for Type 931.



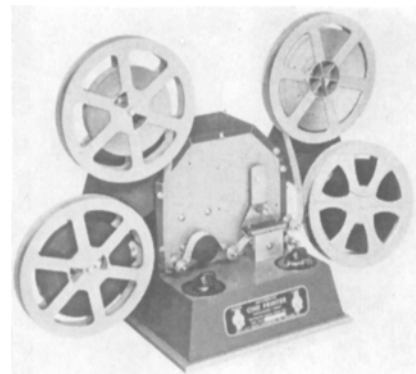
**The Bauer C-1 and C-2 Super 8 movie cameras** have been announced by the exclusive U.S. importer, Allied Impex Corp., 300 Park Ave. South, New York, N.Y. 10010. Features include a drop-in cartridge, an automatic exposure system with a CdS electric eye mounted behind the lens, and a Bauer  $f/1.8$  zoom lens with a 4:1 zoom ratio ranging from 9mm to 36mm. Reflex through-the-lens viewing, by means of an oversized aerial type viewfinder, allows the user to compose and frame his pictures accurately, exactly as they will appear in film, the announcement stated. The camera has three speeds, 12, 18 and 24 frames/s, as well as single frame. It has a built-in Type A conversion filter for color pictures. The battery-driven motor operates on penlight cells housed in the pistol grip. The C-1 is priced at \$199.95. The C-2 has the tech-

nical and design features of the C-1 but has a Schneider Variogon  $f/1.8$  lens with 5 $\times$  zoom range (8mm to 40mm). In addition it has a built-in fade-in, fade-out control. It is priced at \$259.95.

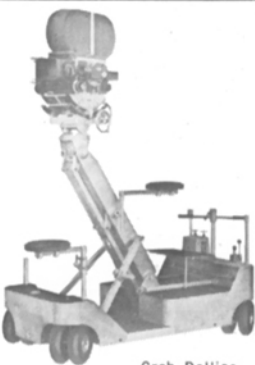


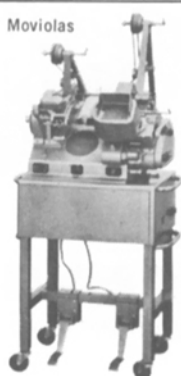





**The Bauer T1-S Super 8 movie projector** has been announced by Allied Impex Corp., 300 Park Ave. South, New York, N.Y. 10010, exclusive U.S. importers for Bauer products. Features include a built-in coupler for automatic sound synchronization with tape recorder; automatic film threading and a pushbutton loop restorer for immediate adjustment of the film if the loop is lost because of torn sprocket holes or a bad splice. Illumination is provided by a high-intensity 12-V quartz iodine lamp. A hi-lo switch is provided to prolong the life of the lamp up to 50 hr. Other features include a Bauer Vario  $f/1.3$  zoom lens (18mm to 30mm); pushbutton controls for forward, reverse, rewind and still projection; rapid rewind; frame adjuster; automatic heat absorbing filter for still projection; and a synchronous motor for a constant speed at 18 frame/s. The projector measures 10 by 6 $\frac{1}{2}$  by 5 in. with folding reel arms. It is priced at \$179.95.

**The Bauer Super 8 movie editor** has been announced by Allied Impex Corp., 300 Park Ave. South, New York, N.Y. 10010. The editor is compact and designed to be easy to use. It has a film notcher for accurate marking of splicing points. The unit has a 400-ft film capacity, an on/off switch, and collapsible arms. A variable voltage selector ranges from 110 V to 240 V ac.

**The No. 39 Polecat Claw**, a double-jawed, vise-type hand tool, a device to hold "almost anything" in photographic setups, has been announced by Brewster Corp., Old Lyme, Conn. 06371. The claw's twin jaws swivel back-to-back and lock at any of 16 different angles. A knob is turned on one jaw to clamp it to a stable element. The other jaw can then support a light, reflector, umbrella, skrim or prop at the desired angle. Made of aluminum and steel, the device weighs 1 $\frac{1}{2}$  lb and is 5 $\frac{1}{2}$  in. long. It is priced at \$7.95.



**An automatic cine printer** for making color or black-and-white duplicates of 16mm sound or silent film has been announced by Superior Bulk Film Co., 442 N. Wells St., Chicago, Ill. 60610. The printer has an all-electric drive with fully automatic take-up arms and a self-adjusting compensating clutch for ease of operation as well as a stainless-steel, self-locking film

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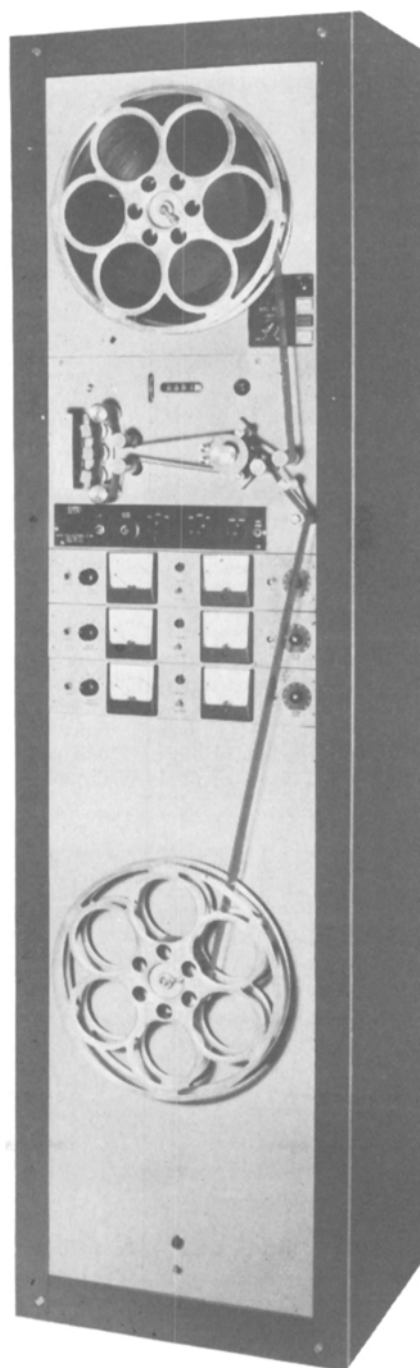
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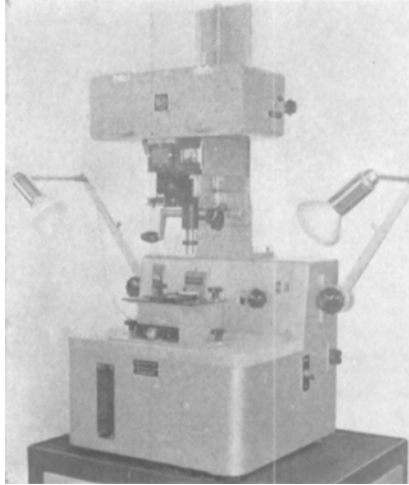
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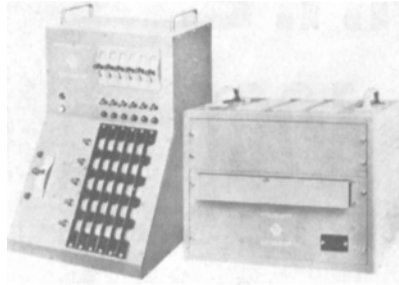
July 1966 Journal of the SMPTE Volume 75

gate to hold the film in line. The  $\delta\mu\eta\lambda\iota$  control varies for extreme light to extreme dark print requirements. A filter receptacle is built in for printing color film. The printer has a 400-ft capacity and operates at a speed of 25 ft/min. Sound and picture may be printed at the same time or separately. It weighs 16 lb. The unit is priced at \$175. A special adapter for duplicating 8mm film is available at a price of \$9.50.



**A new Emby Homrich optical printer**, called the Deluxe Junior, has been announced by Sickles Sales and Service Co., Hayden and Princess Roads, Rt. 1, Box 726, Scottsdale, Ariz. 85257. The printer, manufactured in Germany, features dual

illumination for transparencies (incandescent and strobe); built-in copy lights for opaque material; electronic timer; built-in counter, exposure and color comparator; 100-ft magazine and automatic film advance. It is priced at \$2,295.



**A new Luxtrol Light Control**, Type LES6-1800, a packaged solid-state unit designed for use with Control Console, Type LFSC-LP5, to provide complete dimmer bank facilities, has been announced by Superior Electric Co., Bristol, Conn. 06010. Six individual controllers, one for each dimmer, are provided for manual control. For pre-setting, five rows of controllers permit lighting for five scenes to be preset in advance. Each row has six thumbwheel controllers for setting the output level of each dimmer. Thumbwheels are phosphorescent for use with "black" light or for maximum visibility under poor lighting conditions. A fader control is provided for fading from one preset to the next. The six 1,800-W dimmers are equipped with filter chokes to

prevent objectional audio interference or lamp noise. They are designed for 120-V, 60-Hz ac service with control from a 24-V, 60-Hz supply through remote controllers. The system is priced at \$1,575.

**A 10-kW light source** designed for long throw and high-intensity light output together with ease of handling and adjustment has been announced by J. G. McAlister, Inc., 1117 N. McCadden Pl., Hollywood, Calif. 90038. Easy focusing from spot to flood is effected through a patented device by a quarter-turn of a knob on the side of the housing, the announcement states. Front door opening permits the globe to be easily changed. A patented socket is used to improve prong contact and extend globe life. A ball-bearing tilt-brake is used to hold the lamp at any desired angle. The unit has a 20-in.-diameter Fresnel lens and a 24 $\frac{1}{2}$ -in.-diameter steel housing which is 30 in. long overall. The 102-lb unit has hand grips at each side and 25 ft of #4 cable with state plug attached is included in the price of \$550. The lamp is also available with a lens 24 in. in diameter at a price of \$675.

**A new line of Type III Power Supplies** designed specifically for the operation of xenon and mercury short-arc lamps has been announced by Illumination Industries, Inc., 610 Vaqueros Ave., Sunnyvale, Calif. 94086. Intended to increase lamp life and improve general lamp performance, the power supplies are designed to accommodate the manufacturing parameter spread of the lamps and also compensate for the changing characteristics of aging lamps. Some of the requirements include control of open-circuit voltage and short-circuit current for starting and warmup; constant power over operating range; sufficient voltage and energy for reliable ignition, including restarting hot lamps; low current ripple to minimize the light fluctuations and extend electrode life; and provisions to avoid violent ultimate lamp failure. Four ratings are presently available, engineered to the operating characteristics of Type II lamps. However, these can also be used to power other xenon or mercury lamps having similar characteristics. Features include front panel location of controls and monitoring. The output connectors, line fuse and power cord are located on the rear panel. The supplies are each priced at about \$350.

**A new high-intensity positive projector carbon**, 11mm by 20 in., has been announced by Union Carbide Corp., Carbon Products Div., 270 Park Ave., New York, N.Y. 10017. Called the L-0110, it is designed to operate in the 110 to 130 A range with optimum performance at 125 A. The carbon, said to burn slowly enough to project three reels of film instead of two, is based on an improved rare earth core structure, the announcement stated.

**A modulated-light photoelectric relay unit** manufactured by Photain Controls Ltd., Randalls Rd., Leatherhead, Surrey, England, is said to be unaffected by all forms of ambient or artificial light other than that emanating from the correct

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source. The system has a transistorized oscillator which controls the projector lamp so that its light output oscillates at a set frequency. The receiver unit, which has a response time of 1 MHz, detects the oscillation and, through the tuned circuit of its amplifier, operates a relay. If the light beam is interrupted or if the frequency is changed by outside means, the relay operates to provide a warning or perform a control function. The equipment will operate over any distance up to 100 ft using a light beam or up to 1000 ft using an infrared beam. Prices range from \$112 for the 100-ft light beam unit to \$196 for the 1,000-ft infrared beam unit.

An integrated system of portable power units for motion-picture production requirements has been announced by Rank Studio Equipment, Audio Visual Division, Woodger Rd., Shepherds Bush, London, W. 12, England. The system includes a range of AB sealed nickel cadmium battery packs (said to be virtually indestructible), a special automatic charger, and a lightweight, transistorized inverter unit for synchronous interlock running. The AB batteries are of the heavy-duty type. Those designed to power camera motors are available in voltages of 8, 12, 16 and 24. A

special 30-V lighting battery is available for use with standard portable hand lamps. A fully charged 16-V battery pack on the Arriflex 35 is said to have run 16,000 ft of 35mm film. The battery packs are protected from corrosion and have internally soldered joints and employ standard Cannon connector fittings. The automatic charger is designed for simplicity of use with built-in safety devices to protect the batteries being connected when incorrect settings have been made.

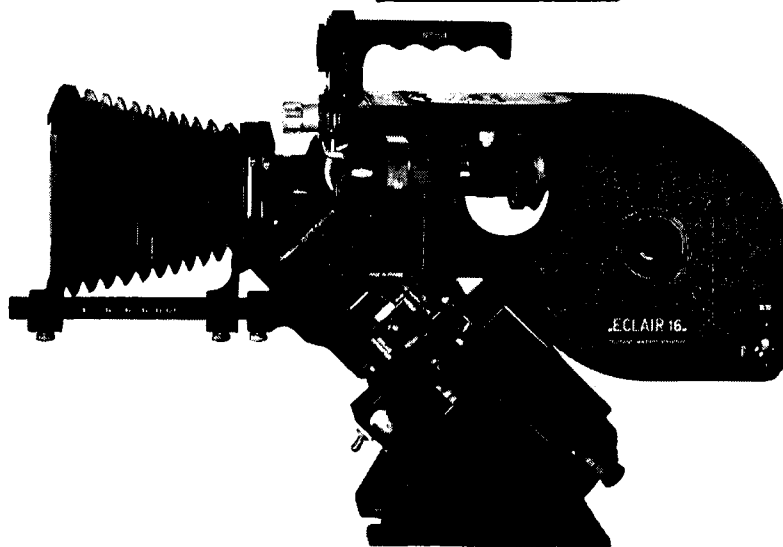
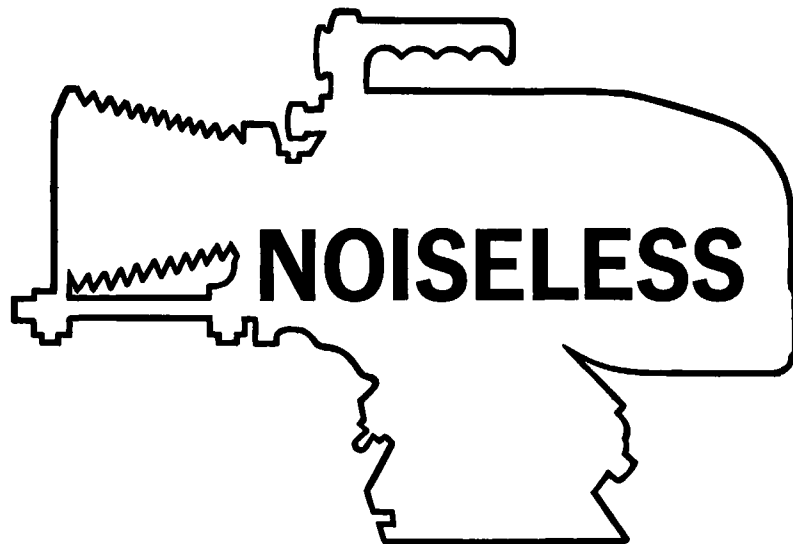
The lighting battery pack is said to be capable of powering a standard 30-V hand lamp continuously for 90 min. It weighs 21 lb. Warning indicators are incorporated to show when the voltage approaches minimum operating level. An automatic out-out device is used to prevent over-discharge. The AB transistorized inverter is designed to provide sine wave outputs of 50 and 52 Hz as well as a 1-V pulse output. The 52-Hz supply permits 25 frames/s operation using the 24-V synchronous motor. It weighs 25 lb and is powered by the special 24-V battery pack. By means of a slight modification, it can be controlled by the camera to prevent wasteful running on standby. Up to three inverter units can be run in synchronism with a common soundtrack.



The Norelco "SchoolMaster," a unit designed especially for education, training and documentation, has been announced by North American Philips Co., 100 E. 42 St., New York, N.Y. 10017. The console contains a compact television camera with a viewfinder, a tripod with a pan-and-tilt head, a video-tape recorder and a 23-in. receiver/monitor. The unit has been designed to include all of the elements necessary for production, storage and playback of program material originating from educational TV stations, or from commercial stations or on-the-spot events. The video-tape recorder is described as a semiprofessional apparatus. It provides simple pushbutton operation and is said to have excellent picture quality and to have the capability of driving as many as 30 different

monitors if needed for a network operation. The receiver/monitor is used for off-the-air reception and is equipped with UHF and VHF tuning. It can be removed from the console and used elsewhere if desired. The unit is priced at \$6,500. More elaborate models are available with prices ranging up to \$12,595.

A new 25-in., 110° black-and-white cathode-ray picture tube which has its own integral implosion protection system has been announced by Westinghouse Electronic Tube Div., Elmira, N.Y. The implosion protection system is comprised essentially of a metal rim band and a steel tension strap. The metal rim band, suitably curved to fit snugly around the periphery of the tube face, is epoxy bonded to the



## THE ECLAIR NPR 16

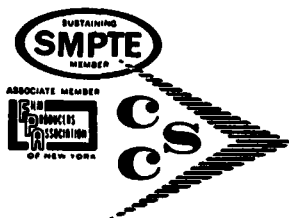
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glass. A steel tension strap is then prestressed tightly over the rim band and mechanically clinched in place to maintain a residual tension in the system. Other features include a viewing area of over 327 in.<sup>2</sup>; special tinted glass to improve picture contrast; four integral mounting brackets to facilitate mounting of the tube in the television cabinet; and a construction adaptable to other tube types differing only in electrical characteristics.

**The Dial-A-Slide Projector**, Model 160, developed by Decisions Systems, Inc., Paramus, N.J., utilizes a special random access selector and actuator and includes two modified Kodak Carousel A-V 900's and a fade dissolve control unit to provide

access to 160 slides with an average selection time of less than 2.5 s. The selector and actuator which make up the remote control unit are used to project the slides. Numerical indicators are synchronized with the slides. Carousel units may be operated side by side or in "stack" fashion. The Dial-A-Slide system is designed to use existing decimal selection equipment without the aid of a converter. It utilizes 2 x 2 slides and may be operated in sequential as well as random access selection, each with fade dissolve control. It weighs less than 75 lb and is priced at \$2,790.

**A line of helical scan video tapes** has been announced by the Magnetic Products Div. of 3M Company, 2501 Hudson Rd., St.

Paul, Minn. 55119. The new tapes are designed for home, industrial and educational video recorders employing the helical scan recording process. The new tapes, "Scotch" Brand No. 350 and 351, are said to have low abrasive qualities, low tape noise, minimum dropout activity and high conductivity coating for effective heat dissipation for longer tape life and minimum static buildup.

**The FilmCARD Reader**, a device designed to give 4-second access to any page in a total file of 67,500 microfilmed pages, has been announced by Houston Fearless Corp., 11801 W. Olympic Blvd., Los Angeles, Calif. 90064. This model of the CARD (Compact Automatic Retrieval Display)

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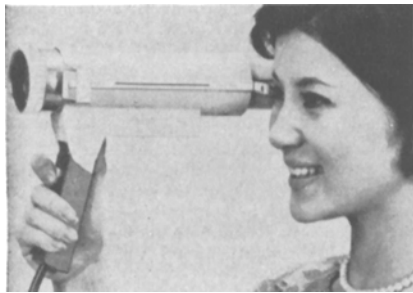
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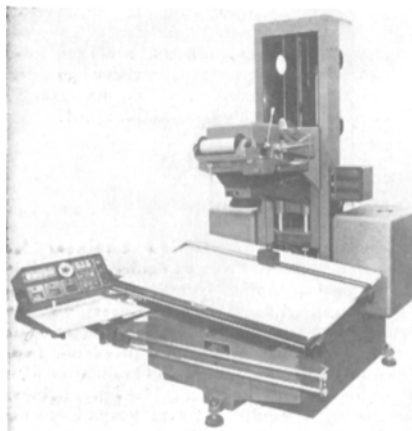
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system is a desk top, self-contained microfiche reader. The unit contains a file of up to 750 film cards (microfiche), each of which contains 90 microfilmed pages. Any amount of additional file storage can be contained in magazines external to the machine to be interchanged with magazines in the reader. The reader plugs into a standard 115-V, 60-Hz, ac outlet. When the control keys are pressed, a selection cycle is initiated that locates the desired film page and projects it at an enlargement of 24 times on the screen. The filmcard is located by a binary-coded slip mounted along one edge. When it is found the filmcard is automatically withdrawn from the film into a projection gate. A quartz-iodine lamp combined with an optical system images the microfilmed page onto the rear projection screen. The device is priced at \$3,000.



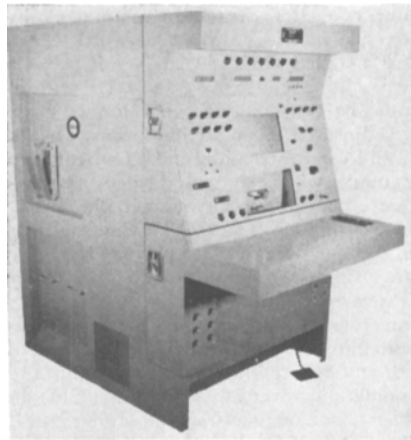
**A portable optical viewfinder TV camera,** called the Shibaden Model HV-50, has been introduced by Shibaden Corp. of America, 58-25 Brooklyn-Queens Expressway, Woodside, N.Y. 11377. A foldaway handle incorporates an on-off trigger for remote control of equipment associated with the camera, such as video-tape recorder, video monitor, or home-type TV receiver. The camera weighs only 3 lb and is 10 in. long and 3 in. in diameter. Features include all silicon transistors, electric eye, accommodation for all "C" mount lenses and both Video and RF outputs. It is priced at \$500.



**The Numerical Controlled Photogrammetric Rectifier,** a computerized instrument designed to increase the accuracy of reading both military and nonmilitary aerial photographs, has been introduced by H. Dell Foster Co., 14703 Jones-Maltsberger Rd., San Antonio, Tex. The instrument is used to transform the planimetric

errors caused by aerial camera tilt and altitude variations. It is said to make an enlargement of correct dimensions in 10 s and also to reduce the error to 0.01%. Components in the equipment include a time-sharing positional computer made by Control Logic Inc. and H. Dell Foster Co., and three Mem-O-Tizers. The Mem-O-Tizer is an encoder with a built-in memory made by Flight Research Div., Giannini Scientific Corp., Richmond, Va.

In operation, after the correct Z scale and X and Y tilts have been calculated, the information is fed into the rectifier, either on punched tape or by dialing controls on the console panel. The computer then asks the three Mem-O-Tizers (one each for X, Y and Z) for present tilt and scale positions. On receiving that information, the computer compares present values against desired values, computes the difference, makes scale changes and coefficient compensations and finally generates a series of pulses which position the negative and X and Y tilts to the correct scale. Enlargements are made to a scale of from 660 to 4,620 ft to the inch, terrain scale.



**Scano I, Model FR-35DA, a film scanner/reader** designed specifically for the high-speed reduction of Angle Dial Film data to a usable data-processing form (such as that required for input to the IBM 523 Card Punch), has been announced by Systems Research & Development Co., 1649 Twelfth St., Santa Monica, Calif. 90404. The instrument provides for scanning, reading, interpreting and translating 35mm or 70mm cinetheodolite or radar film. The film image is projected on a 10- X 6-in. screen and may be positioned by an X-Y control to facilitate studying any area of the film. Cartesian coordinates and/or linear measurements are obtained from photographic negatives of the cinetheodolite or radar film through the use of a crosswire measuring system and are reduced to digital data for delivery to the IBM 523 Card Punch or other data processing equipment. Digital computations are displayed separately for accurate monitoring. The optical-projection system is totally enclosed and shock-mounted for greater stability and improved accessibility to other areas within the cabinet. Controls are provided for adjustment of projection intensity, speed of film transport, rewinding, position of the film on the screen, and number of frames to be advanced. Additional switches are available for recording other information asso-



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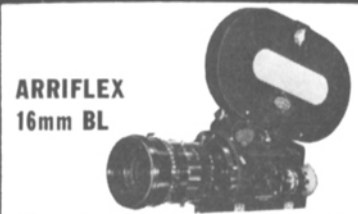


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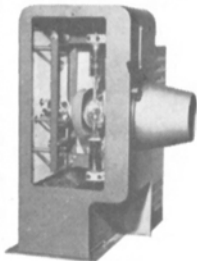
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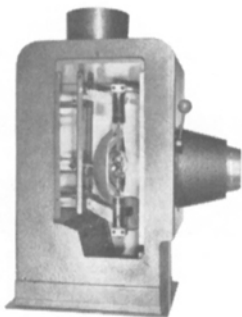
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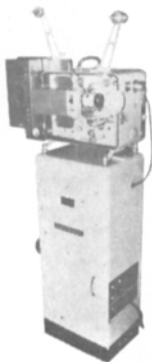
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ciated with the film and operating controls are available to the operator from a seated position.

**A magnetic tape loop/rotating scanning head system, BI/SCAN I**, designed for such uses as transient analysis and display, random data analysis, SNR enhancement of nonperiodic signals, real-time enhancement of periodic signals and signal delays for correlation studies, has been announced by S. Himmelstein and Company, 2500 Estes Ave., Elk Grove Village, Ill. 60007. A 2-channel rotating headwheel scans 1-in. sections of recorded tape at 60 times/s. The tape loop may be scanned while it is stopped or while in motion. The scan speed is 60 in./s with the tape stopped. In the loop portion of the system pneumatic tape, drive, tape tensioning, tape buffering and dynamic braking are used to provide high performance and to ensure maximum reliability and tape protection. Pinch rollers have been eliminated to permit only the heads to touch the tape oxide.

**A capacitance bridge** specially designed for measuring electrolytic and other large-value capacitors has been announced by General Radio Co., West Concord, Mass. 01781. Called the Type 1617-A, it features a capacitance range of 1 pF to 1.1 F and includes its own 120-Hz generator, detector and adjustable dc polarizing supply. Three-, 4-, and even 5-terminal measurements can be made with the new bridge, the announcement stated. The built-in bias supply has six ranges, up to 600 V. External bias up to 800 V can be applied. Warning lights, discharge circuits, and other safety features protect the user from potentially dangerous voltages. The bridge measures dissipation factors up to 10 and is equipped with an Orthonull balancing mechanism to simplify measurements. It is available in either bench or relay-rack mounting and is priced at \$1,195.

**A portable generator, Model 62-G**, designed to provide ultra-clean air for structures or missile chambers that require a temporary atmosphere of contamination-free air, has been announced by Agnew-Higgins, 7532 Anthony Ave., Garden Grove, Calif. 92641. The generator is completely self-contained, with blowers, motors, prefilters, HEPA type final filters and an output duct that can be detached from a chamber or structure. The unit supplies air at the rate of 1,500 ft<sup>3</sup>/min (approximately 20 mi/h) to enclosures, inflatable structures and temporary or permanent clean rooms. Clean air is pushed through the absolute filters by two dynamically balanced centrifugal fans. The blower motors, operating on resilient mounts, are internally protected against overload. Internal wiring of the electrical system is channeled through metal conduits and grounded.



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**Electronic Engineer.** B.E.E., 1943. M.E.E., 1951. Diversified research and development exp. in instrumentation and communications. Desire challenging position in N.Y.C. in TV or related areas in m-p. Write Ap't. S.T., 578 E. 16th St., Brooklyn, N.Y. 11226.

**Cameraman-Editor-Recordist.** 2 years college, 16 years exp. in electronics and photography. At home in all phases recording, sound, m-p and still photography, editing. Desire to relocate on Eastern Seaboard in responsible position with reliable concern. Résumé on request. Gillespie, 2505 Pershing Ave., Richmond, Va. 23228.

**Experienced film maker.** With latest camera and sound recording equipment, seeks connection in New York metropolitan area. Leo E. Zappe, 321 River Rd., Nutley, N.J. Tel: 201 667-2323.

**Capable Film Student.** Looking for job in film or TV production. Exp. in editing. Worked also as productions asst. Contact: Eila Kaarresalo, 264 50th Street, Brooklyn, N.Y. 11220, Tel: 492-5945.

**TV & Radio Broadcast Engineer.** 10 yrs. TV & 20 yrs. radio creative engineering exp.; active SMPTE member. Presently, GS-855-13 in Federal Civil Service. Desire creative position in or out of govt. service. W. J. Wolfe, 6635 Marsden St., Phila., Pa. 19135.

**Design Engineer or Production Supervisor,** 19 yrs. exp. in design & production of all types m-p handling equip., splicers, synchros, m-p reels, etc. Past 10 yrs. in supervisory capacity. Résumé on request. Wm. L. Graham, 5759 Riverton Ave., N. Hollywood, Calif. 91601.

### Positions Available

**Project Engineer & Design Engineer for Television Systems.** Project Engineer responsible for technical planning, coordination with suppliers, liaison with customer engineers, etc. He must be able to use practical engineering methods to solve wide range of technical problems. Exp. in electro-mechanical design and familiarity with electronic circuitry important. Design Engineer must have TV equipment exp. Responsible for trouble shooting, developing modifications for special requirements and designing new equipment to meet high performance goals. Positions are with small TV co. having outstanding record in high quality television display systems. Each position will involve major responsibilities and individual initiative. Send résumé or letter describing your background to: Theatre Network Television, Inc., 62-10 34th Ave. Woodside, N.Y. 11377.