

new products

(and developments)

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8MM FORMATS

Information about the Eastman Kodak Super 8 and the Maurer Format M has been received in the current industry surge for small-format film.

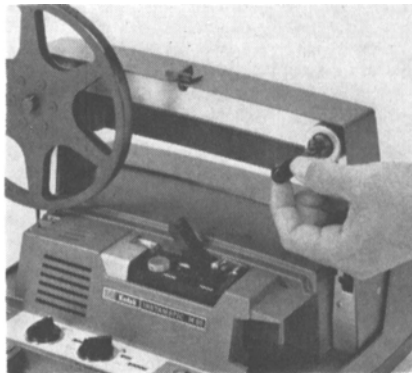
The technical basis for the introduction of the Kodak Super 8 was covered most recently in the *Journal* by E. A. Edwards and J. S. Chandler, "Format Factors Affecting 8mm Sound-Print Quality," pages 537-543 of the July 1964 *Journal*.

The dimensions for both Kodak Super 8 and Maurer Format M were generally given in the August 1962 *Journal* by: C. J. Staud and W. T. Hanson, Jr., "Some Aspects of 8mm Sound Color Print Quality," pages 557-562; and by John A. Maurer, "A Proposed 8mm Sound Film System," pages 563-568.

Super 8 film, designed to provide 50% more image area than regular 8mm film, is essentially an improved Kodachrome II, Type A, supplied in Kodapak Movie Cartridges for quick, non-thread loading into the new cameras. The film is for indoor and outdoor use. The notched cartridge allows automatic inspection of the filter and adjustment of the ASA film speed setting. The cartridges contain 50 ft of film 8mm wide and do not have to be turned over; thus 50 ft of film are used without interruption. The frame height, frame width and perforation spacing of Super 8 film have a constant ratio to the equivalent dimensions on 16mm film, thus permitting reduction printing from 16mm to Super 8 at a ratio of 1.8 to 1.

The film has an image area 224 mils wide, utilizing 63% of the film area for the centered picture image. The perforations are only 36 mils wide and spaced 20 mils in from the edge of the film. The space between perforations has been extended to 0.1667 in. Provision is made for the application of a magnetic sound stripe 30 mils wide, but on the opposite edge of the film from the perforations. Eastman now has the line of Instamatic movie cameras and projectors as components of the Super 8 system. The line now includes three cameras: The M2, with manual exposure control and electric drive; the M4, with automatic exposure control; and the M6, a zoom reflex camera with automatic, through-the-lens exposure control. The

cameras cost, respectively, about \$50; \$75; and \$175. An aperture plate is built into each camera. The cartridge also contains a space gate and pressure pad, to ensure camera focus as good as conventional roll film cameras. All the cameras have built-in Type A filter, automatically positioned in front of the lens when loaded with Kodachrome Film, Type A, and removed when Kodak Instamatic Movie Light is attached.



The Kodak Instamatic Projector Model M80.

Instamatic projectors include the M50, M60, M70, M80 and M90 silent projectors and the M100 sound projector. The M100 is designed for the recording and playback of Super 8 film which has had a magnetic stripe applied. The silent projectors range in price from about \$65 to \$205. The M100 is \$595.

Other firms that have announced equipments designed for the Super 8 format include:

Bell & Howell, 7100 McCormick Rd., Chicago, Ill. 60645, has announced two cameras and four projectors. The cameras,



New Bell & Howell Camera for Super 8 Model 431 with "Sun Gun" movie light and action grip.

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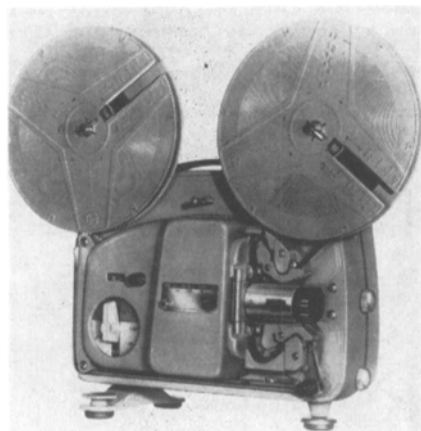
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Models 430 and 431, are battery-powered, have complete automation of operation and a wide range of apertures ($f/1.9$ through $f/64$). When a cartridge of Super 8 film is inserted in the camera, notches in the cartridge edge trigger the camera to set itself for the proper film speed (ASA) and to move a Type A filter into place, if needed. The wide range of apertures is made possible by use of a neutral density "spot" located in the center of a lens element to coordinate with the through-the-lens electric eye. When the diaphragm closes down to about $f/11$, its diameter is exactly that of the lens "spot" which then begins to absorb some of the light, acting as a neutral density filter. The camera's diaphragm is thus automatically set for proper exposure under the broadest possible range of light conditions. Four AA size penlight batteries supply the power for the film drive zooming and the electric eye. Model 430 with a manual zoom control, weighs 31 oz. Model 431, with an automatic zoom control, weighs 36 oz. Each camera is $5\frac{1}{2}$ in. long, $3\frac{1}{2}$ in. high and $2\frac{1}{4}$ in. wide. Model 430 is priced at about \$160, and Model 431 at about \$220.

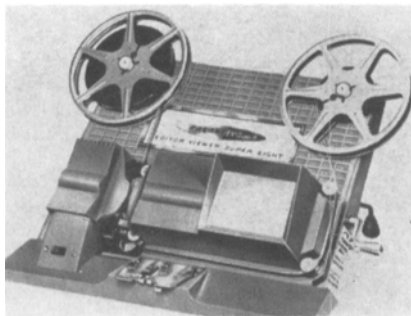
Bell & Howell's new projector line is called the B&H Super 8. Four models are presently available ranging in price from about \$95 to about \$215. Each projector has a powerful new lamp, incorporated specifically for the Super 8 format, and a newly designed optical system.



Bolex Projector for Super 8, Model 18-5.

Paillard Inc., 1900 Lower Road, Linden, N.J. 07036, has introduced a new projector for Super 8 called the Bolex 18-5 Super Projector. It is available with a new 17-28mm Som Berthiot zoom lens or with a choice of 15, 20, 25 and 35mm $f/1.3$ fixed focal lenses. The lenses are interchangeable. The projector has automatic threading and automatic reel take-up, but it can be threaded manually if desired because sprocket guides, filmgate and film channel can all be fully opened. A new control switch is provided for instant change of speed. Critical frame adjustment can be made by means of an easy-to-read button on the front of the projector. It is priced at \$178.50 with standard lens and \$209.50 with zoom lens.

Kalart Company, Inc., Plainville, Conn., has introduced a line of Super 8 editing and splicing equipment which includes the Kalart EV-Super 8 Editor/Viewer; the S-5 Super 8 Splicer and the Craig Master



Kalart's Editor Viewer Super 8.

Six Splicer. The Craig can be used for both standard 8mm and Super 8 and for 16mm. All of the splicers permit splicing with either cement or tape. The editor/viewer, designed exclusively for the Super 8 format, features a large viewing screen, a built-in splicer, 400-ft reel capacity and drop-in straight line filmgate threading.

Hudson Photographic Industries, Inc., South Buckhout St., Irvington-on-Hudson, N.Y., has announced the HPI Super-8 Splicer designed to be used with Quik Splice Mylar Splice Tapes to splice and repair Super 8 film. The splicer features stainless-steel cutting blades and a heavy metal base. A tape storage compartment is built into the splicer and a sample supply of Super 8 splice tapes is included with each splicer. The splicer is priced at \$5.95.

Sylvania Electric Products Inc., 730 Third Ave., New York, N.Y. 10017, has announced six new projector lamps, designed specifically for use with Super 8 projectors, and a miniature Sun Gun movie light for Super 8 cameras. The projector lamps include four Tru-Flector and two Tru-Beam type lamps. The Tru-Flector lamps are similar in appearance to the standard lamps in the series but are designed for greater optical efficiency for the Super 8 projectors. The Tru-Beam lamps are new in that the reflector is an integral part of the glass envelope. The Sun Gun Super 8 movie light is a Sylvania-developed 375-w, single-ended iodine-quartz lamp called the Super Q. Color balanced for Super 8 film, the lamp has a color temperature of 3,400 K. Without the mount it is $2\frac{1}{4}$ in. square and 5 in. deep.

The new Fujica Single 8 P-1 Camera, which has a specially designed magazine that is dropped into the camera, was described in the April *Journal*, pages 360 and 362.

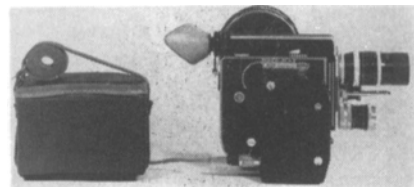
The Maurer Format M, which was specifically designed for optical sound reproduction, has been embodied in a commercial 8mm sound projector by the TOEI

Company of Japan. For the past three years, this firm has manufactured 8mm projectors using photographic sound. A large number of these projectors are being used in schools in Japan. The TOEI Company has had its 8mm projectors re-engineered in 1964 to use a small-format which is a slight revision of the Maurer format published in the *Journal* in 1962. The redesigning was done by JM Developments Inc. 116-118 West 29 St. New York N.Y. 10001.

The TOEI Format M projectors have already been produced in considerable numbers. They have been submitted to the Underwriters Laboratory (in U.S.A.) and to the Canadian Standards Assn. for inspection and approval for safety. It is expected that these projectors will soon be introduced also to the European market.

A second projector using the Format M has been reported designed by Viewlex Corp., Holbrook, L.I., N.Y., and this and the TOEI projector have been reported on trial in several schools with film in Format M supplied from Eastman Kodak Co. stock processed by Color Service Laboratory.

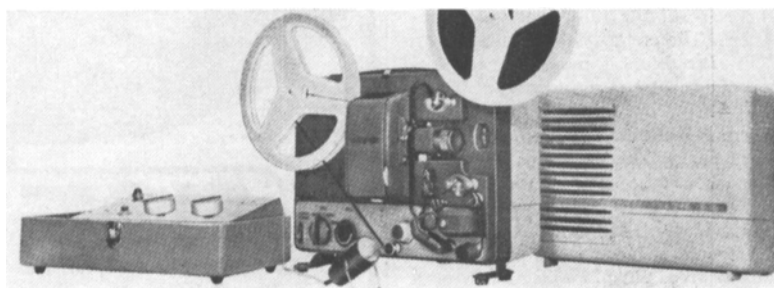
Bolex products that will be available in the near future from Paillard Inc., 1900 Lower Road, Linden, N.J. 07036, include a lightweight, 400-ft magazine for Bolex H-16 cameras (available in the fall); a camera motor with 24-frames/sec synchronous sound speed; and a beveled edge splicer (both scheduled for introduction in July); and a ball joint for leveling a tripod



Bolex Perfectone Motor on Bolex H-16 reflex camera.

panhead, also planned for introduction during the summer. The splicer will be available in two models, one for 8 and Super 8 film, the other for single or double 16mm film. The splicer is designed so that film ends are scraped to a beveled edge so that the splice will be no thicker than the rest of the footage and the spliced film will lie perfectly flat.

The camera motor, called the Bolex Perfectone, is designed for the Bolex H-16-4 and H-8-4. The motor will also be available with a sync generator for synchronous recording of sound and picture, using any professional-type tape recorder equipped with a pilot head.



TOEI Company of Japan optical 8mm sound projector.



The Norelco EL 3400 Video Tape Recorder, a low-cost (\$3,950) helical scan unit, has been announced by North American Philips Company, Inc., 100 E. 42 St., New York, N.Y. 10017. The recorder is a table-top model measuring 25 by 15 by 16

in. It weighs 100 lb. Designed for simplicity and ease of operation, pushbuttons are used to select recording, stand by, playback, rewind, start, fast forward and stop. When on "record" a safety interlock is used to prevent accidental recording. Recordings can be made by nontechnical operators through a simple coupling to most television receivers or through Norelco professional cameras available in conjunction with simultaneous audio recording. The machine provides more than an hour of uninterrupted recordings on 2,880 ft of 1-in. video tape on a 9-in. reel. A standard 8-in. reel is supplied for 40 min playing time. The recorder operates on 110-v a-c; power consumption is 350 w. It is equipped with 7 motors. The recorder has been designed

especially for such applications as educational, industrial and medical. It is also expected to be useful in police and security work.

A portable TV recorder with variable playback speed control to display a television picture at normal speed, any degree of slow motion, or with the motion completely stopped has been announced by Precision Instrument Co., 3170 Porter Dr., Palo Alto, Calif. Designated the PI-4V, the new recorders have Variscan playback speed control and two audio tracks which may be individually erased and re-recorded. The first 23 of the 75-lb recorders have been purchased by the U.S. Air Force for use by ground instructors. In the Air Force train-

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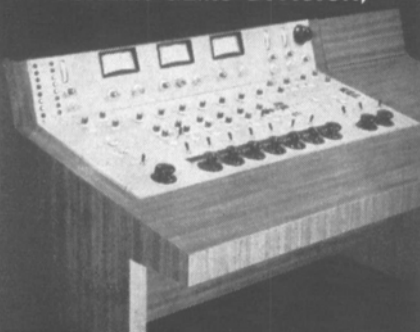
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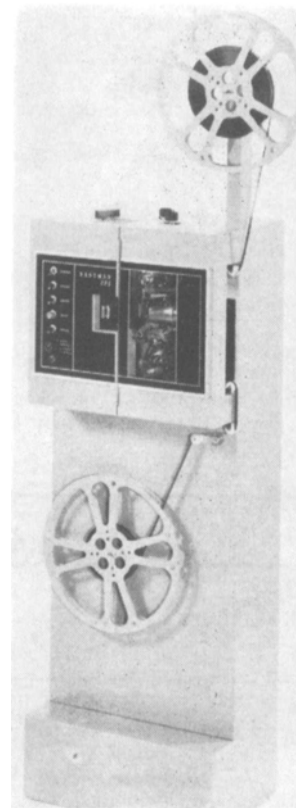
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ing program, reels of tape, each containing as much as 85 minutes of TV material recorded on one machine, can be played back on any of the other PI-4V8s at any Variscan speed. During playback, a single control knob is rotated to vary the TV image speed from a dead stop through any degree of slow motion to normal full speed as recorded, with the transition between any speed free of picture flopper or image distortion.

The Wesgrove Video Recorder which utilizes $\frac{1}{2}$ -in. standard sound recording tape for both picture and sound, has been announced by Wesgrove International, 3325 Filmore St., San Francisco, Calif. The machine is manufactured by Wesgrove Electrics Ltd., Worcester, England. Designed for the "knowledgeable amateur" as well as for educational and professional application, according to the announcement, the recorder operates on the linear system. The recorder will be sold assembled (VR700) at a price of \$492, or in kit form (VKR500) at \$392. The firm also announced a monitor and a camera for use in taping on-the-spot scenes.

An improved heavy-duty television projector designed for reliable long-term performance and optimum picture resolution has been announced by Eastman Kodak Co., Motion Picture Products and Education Markets Div., Rochester, N.Y. 14650. The projector, called Eastman 16mm Television Projector, Model 285, features a flat gate to ensure uniform resolution throughout the picture area. The projector also incorporates a still-frame feature which maintains the same brightness and color temperature as in normal projection. A Geneva-type drive unit actuates the pull-down sprocket to provide smooth, trouble-free operation. An 1,800-rpm, 60-cycle synchronous motor drives the projector's main film transport mechanism, which includes all continuously rotating sprockets and the shutter. Another 1,800-rpm motor powers the separate intermittent mechanism but is stepped down to 1,440 rpm by a timing belt and gears. The motors provide uniform application of light sufficient for color or black-and-white television and a constant film speed of 24 frames/sec. The projector is equipped with a constant-tension take-up assembly that automatically accommodates all reel sizes from the 50-ft

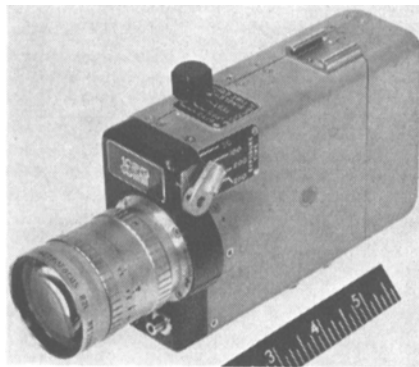


lightweight reel to the 5,000-ft reel. The sound system is designed to provide a high degree of fidelity for optical and magnetic sound films. The projector is priced at \$7,975.

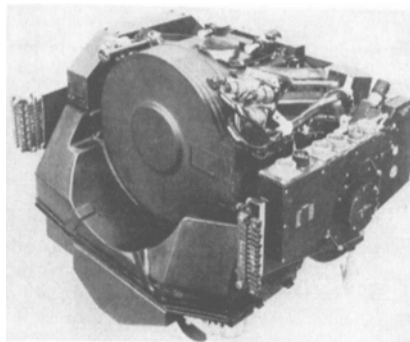
A color special effects generator called the Mark VII has been introduced by Ball Brothers Research Corp., Video Marketing, Boulder Industrial Park, Boulder, Colo. The generator is designed to operate with black-and-white or color television to generate various video screen patterns by switching between two cameras. It may also be used to perform color matting or lettering by the use of one color camera and one monochrome camera. A modular design concept provides for expanding a simple unit to a much more complex one if required. A remote control panel has all the operational controls. A lighted push-button is provided to select wipes, color matting, internal keying, external keying, mixing or lap dissolve. Wipes are actuated by a T-bar fader-type assembly with controlled tally lights. Normal, normal-reverse wipe sequences may be selected by a 2-position rotary switch. Keying sensitivity control is a potentiometer type of adjustment. Color matting "hue control," "luminance control," and "chroma control" are knob-type adjustments. Electrically, the unit is pre-wired for the most complex configuration possible. The push-button function selectors are added in banks with 6 stations per bank. The most complex system would require three banks of pushbuttons, plus three additional color matting controls.

A 25-in. monitor intended for use in closed-circuit applications has been announced by the Conrac Div. of Giannini Controls Corp., 1600 S. Mountain Ave., Duarte, Calif.

Designated the CEA25, the monitor is said to provide a picture area comparable to that currently available in 27-in. models. Its relatively small size compared to the large display area is made possible by the use of a shorter 110-degree picture tube. Fitted for ceiling mounts as well as pedestal and 3-wheel dolly installations, the monitor weighs 104 lb. It is 24 $\frac{3}{8}$ in. wide, 22 in. high and 15 $\frac{1}{4}$ in. deep with a center resolution of 800 lines and a corner resolution of 600 lines. It is priced at \$430.



A 16mm sequential camera weighing less than 2 lb has been developed by J. A. Maurer, Inc., 36-01 31st St., Long Island City, N.Y. 11101. The camera, originally designed for NASA for use in the Gemini capsule, can be handheld or mounted in a fixed position. A mode selection feature permits use for time exposures, manual single frame, automatic mode of operation providing 16 frames/sec. or sequential operation at 1 frame/sec or 6 frames/sec. Lenses are optional equipment and may range from 160° wide down to 2mm EFL. By selection of the appropriate optics, resolution of over 100 lines/mm can be obtained. Rapid film loading is accomplished by the simple insertion of a modified Kodak 16mm film magazine into the camera compartment. Film capacity per magazine is 50 ft with standard base film or 120 ft with thin base film. One ON-OFF push-button and a 5-position selector switch are all that is required for operation in any of of the camera's five modes. The camera is 5 $\frac{3}{8}$ in. long, 1 $\frac{3}{8}$ in. wide and 3 $\frac{1}{2}$ in. high. It can operate within a temperature range of -12 F to +200 F. It has a rotary shutter with shutter speeds ranging from 1/50 to 1/250 sec and time exposure.



A panoramic camera system has been developed by Perkin-Elmer Corp., Norwalk, Conn., for the U.S. Navy's RA-5C aircraft program. The system includes two cam-

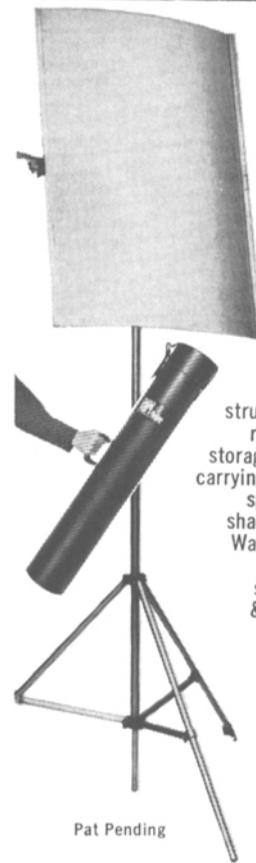
eras, the KS-68A low-altitude camera and the KS-69A high-altitude camera. Each camera employs a twin double-dove prism, twin-lens system which enables the film to be advanced continuously and smoothly. This permits the use of higher frame rates and higher film velocities, and results in higher resolution under all aircraft operating conditions. Image motion, the result of the movement of the aircraft relative to the image of the scene being photographed, is compensated by moving the twin lenses in a direction opposite to that of the aircraft during the picture taking scan. Each camera is equipped for automatic exposure control, achieved by varying the width of the exposure slits in the camera. Means are provided for recording identification data on the film as it is being exposed.

The RA-5C cameras are among the first with a fully stabilized mount employing the Hooke's joint, or knuckle principle. In this type of mount, the stabilized platform is external to the gimbals rather than internal. Vibration and shock isolators, by which the stabilized mount is attached to the vehicle, isolate the camera assembly from vehicle vibration.

A photointerpretation unit called the Itek Variable Width Rear Projection Film Viewer has been announced by Itek Corp., Special Equipments Div., Second Ave., Northwest Industrial Park, Burlington, Mass. Specifically designed for quick and precise examination of projected enlargements of aerial photography, the viewer handles film widths ranging from 35mm to 9.5 in. on reels up to 10.5 in. in diameter. Four standard magnifications, 3X, 6X, 12X and 30X, are provided. Controls for selecting magnification, adjusting focus, positioning film, setting illumination, varying film scan speed, and varying film slew speed are located within immediate reach of the seated operator. The optical system comprises a light source, a condenser assembly, a film platen, a projection lens assembly, a front-surface folding mirror and a viewing screen. The total optical path is approximately 100 in. Four lenses provide the four magnifications without necessitating platen translation along the optical axis. Changes in magnification are accomplished by the rotation of a lens turret whose vertical driveshaft is supported by the left rear side of the cabinet frame. The unit is 70 in. high, 42 in. wide, and 90 in. in depth. The viewing screen is 30 by 30 in.

A laser rangefinder is produced commercially in Scotland by Barr and Stroud Ltd., Anniesland, Glasgow W. 3. Information is available in the United States from Hughes Aircraft Co., Aerospace Group, Culver City, Calif. The instrument is said to give fast, accurate ranging on objects up to 10,000 m distant. The instrument consists of three units: the laser head unit, power unit and tripod. Without the tripod, the instrument weighs about 30 lb. The head unit incorporates the laser transmitter, receiver, ranging electronics and readout, telescopic sight and all associated optical equipment. The unit is fully sealed and desiccated and all components are in modular form. The power unit contains batteries, power circuits and capacitor bank.

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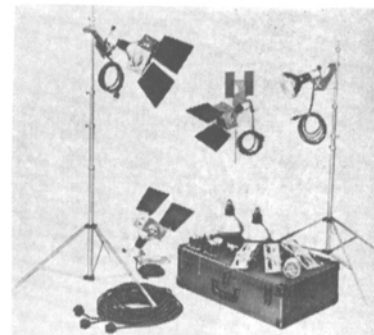
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The tripod allows all movement in azimuth and $\pm 25^\circ$, with respect to the horizontal, in elevation. Scales and level indications are provided.

A portable 20-w TWT RF power amplifier has been introduced by Microwave Associates, Inc., Burlington, Mass. Designated the MA-8531, the power amplifier is primarily designed for television broadcast relay operations, particularly airborne broadcasting and other field applications where greater transmitting power is required. The instrument operates on 150 v from a 28-v d-c source, and it can be modified to accept 110-v a-c. The unit is weather-sealed and framed in a compact metal case for rugged, all-weather field use. A front panel meter provides visual checks on all important circuit voltages and r-f output.

The firm also announced the MA-2TV Relay System, featuring a 15-lb, miniature, solid-state video-audio TV transmission constructed to withstand operational stress such as it would be subjected to in a news van, crash truck or aircraft. The system is weatherproof and self-contained with a built-in power supply. The system weighs less than 50 lb and can be quickly installed for extended range, multihop links.

A new series of reflex klystrons designed for use in microwave relay systems as transmitters or local oscillators has been announced by Varian Associates, Tube Div., 611 Hansen Way, Palo Alto, Calif. 94303. Designated the VA-287 series, the klystrons operate at frequencies of 10.7 to 12.7 Gc. The tubes provide output power of 1 w at 750 beam volts or 15 mw at 300 beam volts. Maximum beam voltage is 800 v d-c; maximum reflector voltage is -800 v d-c; heater voltage is 6.3 v and typical heater current is 0.75 amp.

Two new magnetic tape recorders, Model CM and Model Y, have been introduced by Kineloc Corp., 29 South Pasadena Ave., Pasadena, Calif. Model CM features two widely different tape speeds—1280 : 1 in either direction. The wide separation between record and playback speeds is made possible by an electromagnetic clutch drive and two hysteresis synchronous motors. Reliable data recovery at low tape speeds is achieved with specially designed magnetic heads and a low pass filtering system which gives a 40 db signal-to-noise ratio at very low playback rates (0.01 in./sec). The recorder is available in 1 in., 0.5 in. and 0.25 in. tape sizes and will accommodate 650 ft of tape.

The Model Y is a high-environment magnetic tape recorder featuring extended recording time with a capacity of up to 4,750 ft of 1-in. tape. It is designed to operate within a temperature range of -54 C to +85 C and in altitudes up to 150,000 ft. The recorder weighs only 27 lb with a volume of 1,040 cu in. It is hard mounted at three points, eliminating need for a shock mount.

A semi-automatic portable dehydrator for pressurizing coaxial cables, waveguides and transmission lines has been announced by Prodelin Inc., Highstown, N.J. The air machine employs a diaphragm-type motor compressor with a direct drive and supplies

clean, oil-free compressed air at the rate of $\frac{1}{2}$ cu ft/min. The compressor is connected by hose to a plastic cylinder filled with indicating blue gel to deliver air with dew points as low as -60 C.

The B & K Model 2203/1613 Portable Noise Analyzer has been announced by B & K Instruments, Inc., 3044 W. 106 St., Cleveland, Ohio 4411. Used with its tripod and a tape recorder, the instrument can be used for such measurements as reverberation-decay values in auditoriums, and noise and vibration inside moving automobiles and aircraft. In combination with the firm's Model 2305 Graphic Level Recorder, and Model 4420 Statistical Distribution Analyzer, the instrument can be used in the laboratory to produce a recorded spectrogram and statistical analysis of the sound or vibration being measured. When the noise analyzer's output is fed to a tape recorder, the recorded signal can be taken to the laboratory and fed into the recorder and distribution analyzer. A wide range of accessories permits measurements under extreme sound incidence, such as high wind speeds, airplane runways, etc., or in enclosed spaces or small areas. The noise analyzer alone weighs only 11 $\frac{1}{2}$ lb. It is priced at \$1,070. A tripod designed especially for the analyzer is priced at \$86. The Portable Noise Analyzer, Graphic Level Recorder and Statistical Distribution Analyzer are sold as a package system for \$4,536.

SMPTE Test Films

The Society has several test films available for testing sound reproduction and projection equipment as listed below.

- Television—Alignment, Resolution, TV System Evaluation
- 35mm—CinemaScope—Projection Evaluation; image and 4-track magnetic sound tests
- 35mm—Projector Screen Image Evaluation
- 35mm—Sound Reproduction Tests: Optical
- 35mm—Sound Reproduction Tests: 3-track and single-track magnetic
- 70mm—Test Film, Projector Evaluation and Alignment: Image
- 16mm—Sound Reproduction Tests: Magnetic
- 16mm—Sound Reproduction Test: Optical
- 16mm—Sound Reproduction and Image Tests for Projector Evaluation: Optical
- 16mm—Projector Screen Image Evaluation
- 8mm—Projector Screen Image Evaluation

A catalog containing details and prices of all SMPTE test films can be obtained from Society headquarters.

The new SMPTE Universal Leader is now available. Details were published in the January, 1965, SMPTE Journal.

Most SMPTE test films are prepared in accordance with ASA/SMPTE Standards. The films are used for testing picture steadiness, traveling ghosts, framing, alignment, and focusing. Sound test films are used to check sound system frequency response, magnetic head or optical train alignment, and sound optics focusing. Other tests include those for sound system calibration and alignment.