

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.

Erratum: The address of W. A. Palmer Films, Inc., is 611 Howard St., San Francisco, Calif. 94105. The address was inadvertently omitted from the item on p. 294 of the March 1968 *Journal* describing the Palmer Television Film Recorder.

A Plumbicon television camera pickup tube only $\frac{5}{8}$ in. in diameter and 5 in. long, developed by N. V. Philips of the Netherlands, has been announced by Philips Broadcast Equipment Corp., 299 Route 17, Paramus, N.J. 07652. An experimental

color camera, weighing 6 $\frac{1}{2}$ lb, has been designed to incorporate the new tube. The camera, together with associated electronic gear packed in a backpack, weighs less than 9 lb.



In designing the new tube, the first requirement was acceptable image definition within the small image area, the image diagonal being only 10.5 mm. In meeting this requirement, a combination of a special gun design using electrostatic focusing and magnetic beam deflection has been used. Electrostatic focusing was chosen over magnetic focusing, due to the weight and space saving of the tube and yoke combination without a focusing coil. The required layer definition was obtained with a variant of the photoconductive layer of the

Plumbicon tube. The mesh, which controls the beam landing conditions of the tube, has no less than 1,500 openings per linear inch. The resolution achieved with the tube is reported to correspond to a modulation depth of 40% at 3 mHz, obtained with a maximum white signal current of 0.2 μ A.



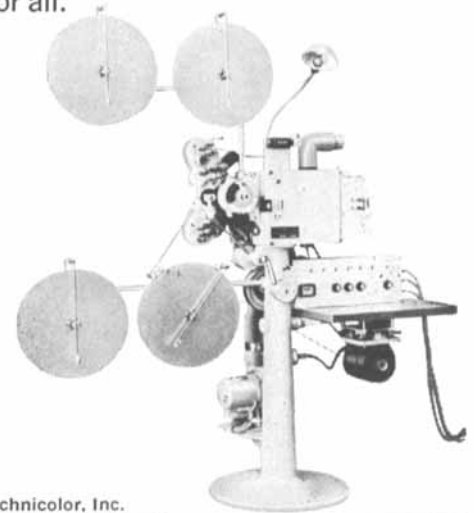
A color broadcast television camera weighing less than 50 lb has been announced by Ampex Corp., 401 Broadway, Redwood City, Calif. 94063. Designated Model BC-200, the camera utilizes two Plumbicon tubes. Because of the small size made possible by the two-tube design, the BC-200 uses lightweight camera cable 0.47 in. in diameter weighing less than 2 oz per ft. The camera is 8 $\frac{1}{2}$ in. wide, 13 $\frac{1}{2}$ in. high and 20 $\frac{1}{2}$ in. long with viewfinder and will accept zoom lenses up to a 16:1

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ratio. The camera produces studio quality color pictures with scene illumination of 100 fc at $f/2.8$. Its signal performance gives 100% amplitude in response at 400 lines, SNR of 40 dB and a transient response K factor of 2% or less. The price is about \$50,000.

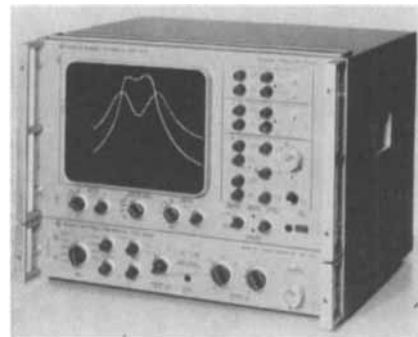


The PE-350 live-color television camera announced by General Electric's Visual Communication Products Dept., Electronics Park, Syracuse, N.Y. 13201, is an advanced development of the earlier PE-250. The firm also has announced the PE-250 Performance Kit (price, \$4,750) to add design improvements to the PE-250. The PE-350 incorporates a new optical system, new circuitry and other features

including an 8-position handwheel protruding through the door of the camera housing. Any one of seven color temperature filters or an open port can be dialed into position to adjust for varying light conditions. New low-noise preamplifiers are incorporated in each of the four channels. New separate-mesh lead-oxide pickup tubes in each channel provide improved picture performance including picture geometry and beam control. The camera head includes zoom lens, extenders, sunshield, luminance pickup tube and B, G color pickup tube for chrominance. The system also includes control panel, processing amplifier, monitor select panel, power supply (28 V dc), rack interconnection harness, blower and panels, camera cable (50 ft) and encoder and decoder cable. The entire system is priced at \$65,265.

A 1-in. vidicon deflection assembly for compact camera applications has been announced by Cleveland Electronics, Inc., 2000 Highland Rd., Twinsburg, Ohio 44087. The all-magnetic assembly contains a long yoke, focus coil and alignment coil. The package has an outside dimension of 1.62 in. and weighs 6 oz. Resolution capabilities are in excess of 600 lines and geometric distortions are held to $\pm 1\%$. The component shown above has yoke inductances of 0.300 mH and 100 Ω focus coil capable of producing 40 G with 100 mA focusing current. The alignment coils are designed at 130 Ω /pair and are cap-

able of handling up to 20 mA if required. The price range is from \$17.20 to \$65.



New instruments announced by Rohde & Schwarz, 111 Lexington Ave., Passaic, N.J., include the Polyskop Sweep Test System, Type SWPB III, the Programable Decadic RF Signal Generator (Synthesizer), Type SMDH, and the Microwave Klystron Generator, Type SMCI.

The new Polyskop has a frequency range of 0.1 to 860 MHz; variable sweep time 20 ms to 10 s; sweep width and center frequency independently adjustable for each sweep direction; module amplifiers to provide for differential, dual channel and linear/log operation and 16 \times 21 cm CRT display. It is priced at between \$5,000 and \$6,000.

The Type SMDH signal generator has frequency stability of 1×10^{-9} /day; variable calibrated output of 0.1 μ V



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Herausgegeben von / Edited by

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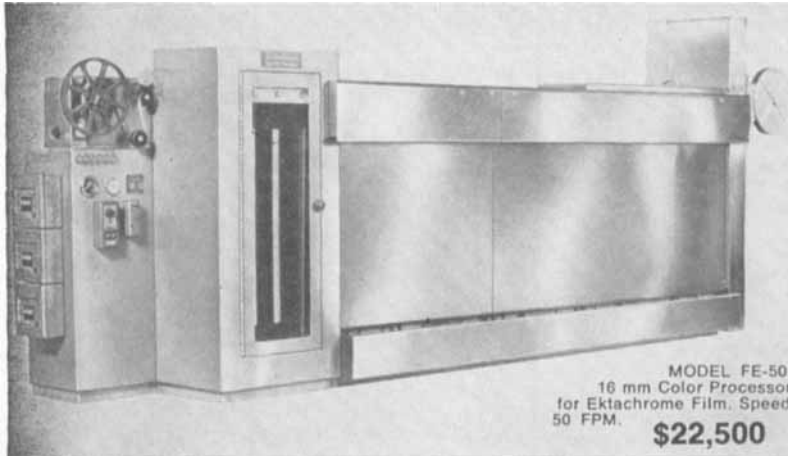
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combination of the exclusive and special added Filmline features guarantees trouble-free operation with absolute minimum down-time and without continual operator adjustments. Recapture your original investment in 2 years on maintenance savings alone. Filmline's "Push the button and walk-away processing" allows inexperienced operators to turn out highest quality film.

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TV Stations: WAPI-TV, WHP-TV, WMAL-TV, WXYZ-TV, WWL-TV, WMAR-TV, WJXT-TV, KETV-TV, WTOP-TV, WEAT-TV, WCKT-TV, WAVE-TV, WAVY-TV, KTVI-TV, WCPO-TV, KTAR-TV, WSYR-TV.

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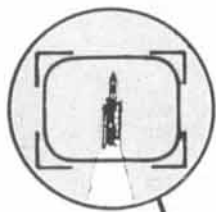


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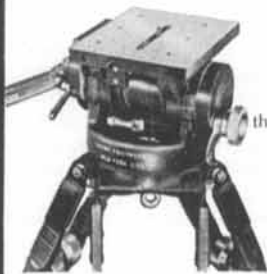
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to 2.5 V; modulation capability, AM and FM; high suppression of spurious 100 dB; and standard 10-line code for programming. It is priced at \$11,600.

The Type SMCI generator has digital frequency indication with accuracy of $\pm 0.05\%$; digital attenuation indication, 0 to -130 dBm with accuracy of $\pm 1.5\%$; universal pulse and FM modulation capability. Also, the generator can be phase-locked to the synchronizer. It is priced at \$5,965.

A TV transmitting system capable of providing UHF stations with maximum radiated power of 5,000,000 W in all directions has been introduced by Radio Corp. of America. Called the Omni-Max system, it combines a 60-gain, five-sided antenna with a 110-kW UHF transmitter. The polygon antenna uses zig-zag-shaped radiators and a "belt-line" feed system that encircles each layer of the antenna, distributing power to its five faces. The transmitter is the RCA Type TTU-110A which uses two vapor-cooled 55-kW klystrons to provide the 110-kW output power.

A new solid-state UHF drive unit has been announced by Marconi Company Ltd, Chelmsford, Essex, England. It will be incorporated in the company's new television transmitters. Designated Type B7311, the drive unit is to be used for 31 transmitters currently being supplied by Marconi in Great Britain and the Scandinavian countries to provide color transmission facilities. A modular form of construction is employed, allowing the complete system to be serviced from the front. Connections to external equipment are made through the roof of the 19-in. standard rack cabinet in which the unit is assembled. Vision and sound signals, capable of driving various types of higher power klystron amplifiers, are generated at 5 and 10 W, respectively. Advanced correction circuits and other means are employed to provide color performance on PAL, NTSC or SECAM systems. The fundamental frequency-determining device in the B7311 is a Marconi Type F3122 crystal oscillator mounted in a master control oscillator unit providing four separate outputs. The sound modulator, which is also a single plug-in unit, requires an input of 0 dBm to produce a deviation of ± 50 kHz. Power supplies are equipped with a miniature circuit breaker in the main input circuit, and the design is such that the supplies are self-protected against overload.

All-solid-state microwave TV relay systems (2, 7 and 13 GHz) have been announced by Microwave Associates, Inc., Burlington, Mass. 01803. The color and audio performances are said to exceed domestic and international broadcast and network standards for STL, portable pickup and intercity relay systems. Solid state RF sources replace klystrons and wideband semiconductor circuits are used to eliminate signal degradation.

A ceramic and metal triode with 2,500-W dissipation has been announced by Westing-

house Electronic Tube Division, P.O. Box 284, Elmira, N.Y. 14902. The instrument is designed for audio-frequency and VHF amplifiers and transmitters and for induction and dielectric heating applications. Two basic air-cooled versions of the triode are available, WL-8161 and WL-8251. WL08161 has a frequency rating of 110 MHz and low-inductance coaxial terminals to facilitate the design of linear tank circuits. The WL-8251 has flying grid and filament leads to facilitate connection in low-frequency circuits and has a frequency rating for full input of 30 MHz. The WL-8161 is priced at about \$205 and the WL-8251 is priced at about \$210.

A solid-state TV monitor for closed-circuit applications has been announced by Conrac Corp., 330 Madison Ave., New York, N.Y. 10017. Designated KNA9, it is a 9-in. video monitor designed for continuous duty operation. Video response is flat to 7 MHz with resolution of 600 lines at the center of the screen and 400 lines at the corners. The KNA9 is compatible with EIA and 525-line standards. Prices are: \$185 in the chassis-only configuration; the cabinet version is \$225 and a dual-rack mount configuration is \$405.

A large-screen color television display system for commercial and industrial use has been developed at General Electric Research and Development Center, Schenectady, N.Y. The system, expected to be commercially available in limited quantities by mid-1969, is based on a new principle of color selection involving a single-gun light-valve tube. The light valve is an electron tube containing a single-gun system which regulates the light color and intensity through electro-optical means. The new system was made possible by major advances in vacuum technology, light and electron optics and the electron gun and by the development of special new "writing fluids." These fluids produce the light valve action under the control of the electron beam. The initial product will be a 3- by 4-ft projection color unit. The system permits either a self-contained rear projection display or a front projection display on any normal screen surface. The system will be priced at \$35,000.

A new system for electronically editing television tape by pre-programming the splicing function allows the editor to preview the splice and splice points before actual editing begins. The system has been announced by Radio Corp. of America's Commercial Electronic Systems Div., Camden, N.J. The RCA Tape Editing Programmer measures 19 by 7 by 17½ in. and uses plug-in integrated circuits for high-density packing. The integrated circuits are plugged into a 12 x 17-in. glass-fiber board. Working in conjunction with an electronic splicer, the device automatically activates the splice mode at the pre-programmed point. If the previewed splice points are incorrect the editor can adjust them before splicing begins. Timing of the editing operation is controlled from a master cue placed on the tape 14 s or more before the point where the edit begins.



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After the insert splice is made, the tape recorder automatically rewinds, stopping the tape at the master cue point. The machine is priced at \$7,000 and can be used with any RCA high-band TV tape recorder.

A high-band color disc recording and editing system designed to produce commercials and other TV programs with speed and flexibility has been announced by Ampex Corp., 401 Broadway, Redwood City, Calif. 94063. Designated Model HS-200, the system consists of a computer-controlled disc that records frame-by-frame color animation and permits the operator access to any recorded frame from a pushbutton editing console. The system is an outgrowth of the HS-100 disc recorder used for replays and slow motion on network sports telecasts (*Journal*, p. 626, June 1967). The HS-200 system is self-contained in a console 66 in. wide, 36 in. high and 24 in. deep. The console contains the disc system, electronics, controls, special effects switches, programmer and equipment for the operation of the system. It is priced at about \$130,000.

A new high-band color TV tape system has been announced by Radio Corp. of America's Commercial Electronics Systems Div., Camden, N.J. The system, called TR-70A, is used with the RCA TR-50 high-band color tape machine. The system employs a device called Clavec (Chroma Amplitude and Velocity Error Corrector)

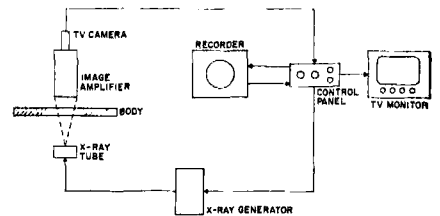
designed to correct automatically for variations between recording machines or between different recording heads.



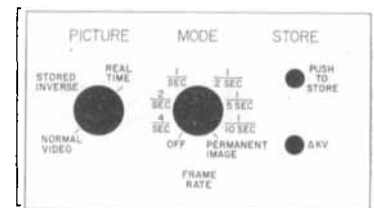
A portable video-tape recorder for business and industrial applications has been introduced by Concord Communications Systems, a division of Concord Electronics Corp., 1935 Armacost Ave., Los Angeles, Calif. 90025. Designated VTR-700, the new recorder features continuous, automatic recording and playback with remote control operation. The remote control panel allows all functions of the recorder to be controlled from any location. The VTR records picture and sound simultaneously and can be programmed to record or playback automatically on a continuous basis or for a selected time period. Instant replay is accomplished through any standard TV receiver or video monitor. The machine is a helical-scan, dual-rotating head system operating at 12 in./s with 1/2-in. tape. It is 16 1/2 in. wide, 16 1/2 in. deep and

10 in. high and weighs 60 lb. It is priced at \$1,495.

A battery-powered video tape recording system with an overall weight of less than 15 lb has been introduced by General Electric Company's Closed-Circuit Television Business Section in Syracuse, N.Y. Called the GE Porta-Pack, the system includes a handheld TV camera weighing less than 5 lb. A small, removable microphone is mounted on top of the camera to record voices or background sounds. Recording is on 1/2-in. tape. A 1-in. viewfinder on the camera also serves as a postage-stamp-size TV screen to show cameramen the action being recorded. The recorder is linked to the camera by a single cable. The recorder unit weighs about 10 lb including two rechargeable batteries. The system is priced at less than \$1,295. An instant playback unit with either 11- or 22-in. screen is available separately. The video recording system is helical scan with automatic video and audio level controls. Operating speed of the 1/2-in. tape is 7 1/2 in./s with 20 min recording on each 5-in. reel.

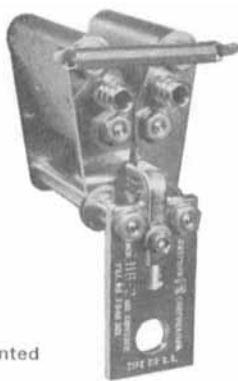


A new system for x-ray imaging in closed-circuit television has been introduced by Westinghouse X-Ray Division, 2519 Wilkens Ave., Baltimore, Md. 21203. It is reported to reduce considerably patient radiation dosage during fluoroscopy. Designed for versatility it can be operated in five modes: (1) In stop action, the last



full frame of any picture on the TV monitor can be frozen instantly for detailed study. (2) A single event can be stored and later referred to without stopping normal fluoroscopic viewing. (3) For applications not involving rapidly changing events, it can be set to operate as a "slide show" (pulsed fluoroscopy) intermittently changing pictures at intervals selected by the radiologist. (4) When dynamic information is important, such as when the flow path of an injected dye is being traced, image cancellation (subtraction) techniques are employed to minimize static background to a level just suitable for location recognition, while the dye pattern itself is enhanced for maximum visibility. (5) The comparison of images resulting from different x-ray kilovoltages highlights subtle contrast differences arising from varying tissue absorption rates. Price of the system, which includes the recorder, control panel and modifications to both camera and x-ray generator, is about \$20,000.

Gryphon offers titanium!

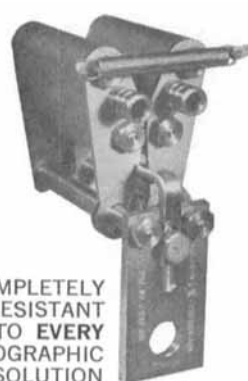


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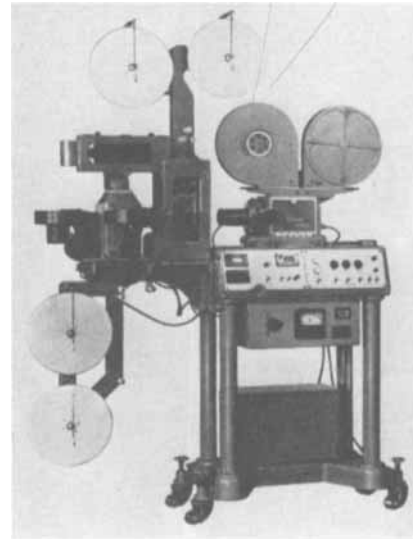
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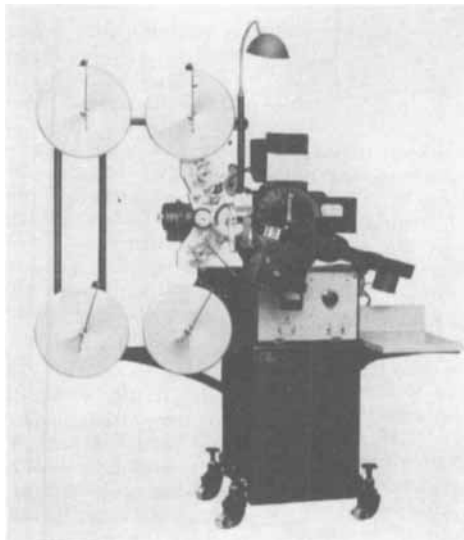
High Speed Reduction Printer Model: DHP-1

Picture reduction printer for B&W and color films from 35mm to 16mm at variable speed of 24 or 32 frames/sec. Also available for 16mm to Super 8 at 32 or 40 frames/sec.

- Film movement of camera/projector are eccentric/registration pin system. Particularly projector movement is variable stroke type.
- "Super-impose" printing of 35mm to 16mm possible only by switching the knob.
- Film instantly stops at the position of shutter-closing whenever power source is off.
- Full automatic subtractive color correction/density compensation is made by negative film notching with band pocket film of CC and ND filters.
- Immersion liquid printing device also attachable at buyer's option.

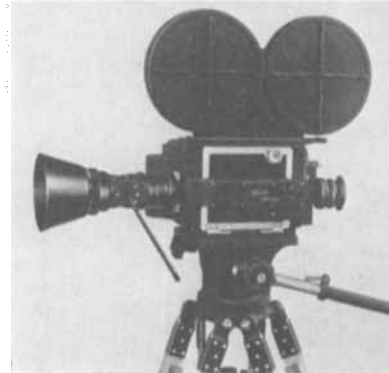


PB-3B Single Head Continuous Printer



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SRC-16-1 16mm Re-Reflex Camera



Model SRC-16-1 has been developed for professional use and is recommended for producing film drama, news film and for shooting sporting events.

- Semi-self-blimp
- Manual dissolve shutter
- Miniature shutter indicator, 0° to 16° variable, 144° for TV.
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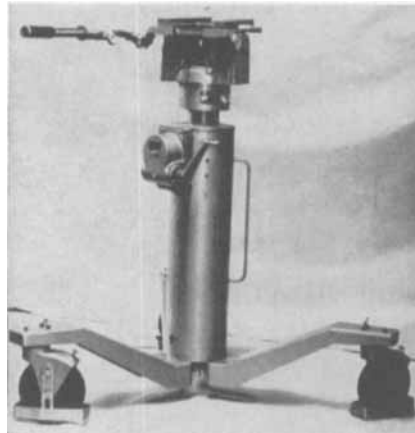
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A test pattern illuminator to provide setup and performance control for color and monochrome TV studio cameras has been developed by Tele-Measurements Inc., 145 Main Ave., Clifton, N.J. 07014. Designated Tele-Pat IV-B, the illuminator is used in conjunction with TM-300 series 8- by 10-in. test slides. Test pattern slides are stored within the illuminator so as to be instantly available. Magnetic slide frame locks keep the test pattern securely in place while the camera is being adjusted. Special leveling and locking devices are incorporated to ensure accuracy in mount positionings. Tele-Pat IV-B operates on a 115-V power supply and has a color temperature rating of 3,100 K adjustable from 2,900 to 3,300 K. The variable light output of 250 fL can be regulated from 0 to 400 fL. The system is priced at \$890.



A color camera pedestal with removable legs for use on the remote truck has been announced by TV Zoomar, 870 High Ridge Rd., Stamford, Conn. 06905. The pedestal, designated Model HOB, is designed for compact storage in the remote truck and color camera stability over the full range of craning. Removable spider legs extend and lock securely from the base of the column. Castered 8-in. wheels can be pinned into position for stationary camera or pre-set dolly shots. The inner telescoping column of 4-in. steel tubing is supported by three pairs of adjustable ball bearing rollers in brackets. Craning dimensions are 35 to 56 in. Craning action is accomplished by 85 turns of the handle which stays locked in any position. Total pedestal weight is 140 lb. The wheels describe a 42-in. circle. The price is \$800.

The firm also announced the H.T.S. Mark I double cam head featuring tilt and pan friction knobs, tilt and pan lock levers, gravity slide locking bib and screws, screw-in-screw-out camera lock bar and adjustable control handle. The Mark I double cam head is priced at \$967.

A television monitor which provides switch selection of any of the four principal television standards (405, 525, 625 and 819 lines) has been announced by Conrac Corp., 330 Madison Ave., New York, N.Y. 10017. Designated the CUJ14 monitor, standard selection can be made from the front panel or by remote control. The operator can also select a pulse cross or $\frac{1}{2}$ -H display for any of the four standards, while an auxiliary brightness control permits presetting the brightness to a

higher level for either of these modes. The CUJ14 is available from rack mounting at a price of \$1,075 or in a cabinet at a price of \$1,085.

The OSM Splitter/Adder 080-003, has been announced by Bishop Instrument, 440 Forest Ave., Portland, Maine 04101. The instrument permits interconnecting of any three sources and loads while maintaining 50 Ω at all ports. For example, a signal can be split into two paths and then recombined. Pulse reflections are 3% in a 140-ps system (equivalent to dc to over 2 GHz). Output voltage is one-half the input.

A new solid-state oscillator that provides sine and square wave functions from 4 Hz to 2 MHz in six continuously variable ranges with simultaneous outputs has been announced by Hewlett-Packard, 1501 Page Mill Rd., Palo Alto, Calif. 94304. Each output has its own attenuator, continuously adjustable over a 20-dB range. Output voltage is 20-V peak-to-peak open circuit for square wave and 10-V rms open circuit for sine wave. Sine wave distortion is less than 0.1%. Square waves are essentially transient-free with rise and fall time of less than 50 ns. Frequency calibration is better than $\pm 3\%$. The oscillator, designated 209A, is priced at \$315.

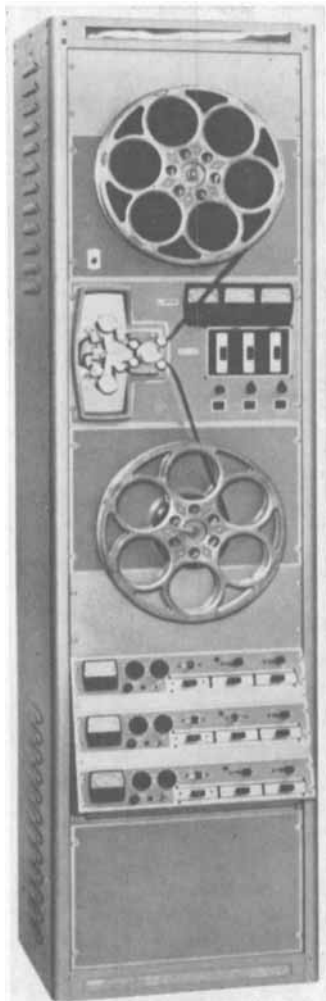
A portable time code generator for field use incorporating integrated circuits and a crystal oscillator has been announced by Hill Enterprises, 131 Garnet St., Ridgecrest, Calif. 93555. Designated STU-3 (Supplementary Timing Unit), the device uses I/C's to generate the 10 kHz and 1 kHz coded timing format. The output level is about 200 V peak-to-peak and can be used to drive neon timing blocks in high-speed cameras. The instrument is designed to withstand rough handling and adverse environmental conditions.

A new impedance bridge for measurements in the 400-kHz to 60-MHz range has been announced by General Radio Co., West Concord, Mass. 01781. Designated 1606-B Radio-Frequency Bridge, the device is adaptable to coaxial connectors. Resistance range of the bridge is 0 to 1000 Ω and the reactance range is $\pm 5000 \Omega$ at 1 MHz. It is priced at \$1,050.

Relcom Models H2 and H2A broadband reactive hybrids have been announced by Relcom, 2329 Charleston Rd., Mountain View, Calif. 94040. The devices feature high isolation and low insertion loss over several decades. Applications include null detectors, signal splitters and signal combiners in communication, radar and telemetry systems. The H2 is priced at \$55 and the H2A is priced at \$80.

NPN transistors which span a power range from 35 to 300 W and have a current collector range from 2 through 50 A dc and operate at frequencies up to 20 mHz have been announced by Westinghouse Semiconductor Division, Youngwood, Pa., 15697. A double epitaxial process in mesa construction provides good gain linearity and gives the user minimum distortion

over the current range of the devices. In 100-piece quantities, prices begin at \$4.50 and range to \$160.



A three-channel combination 16/35mm recorder-reproducer designed as a pick-up recorder for forward-reverse operation has been announced by Omega Corp., 11817 Wicks St., Sun Valley, Calif. 91352. Designated Model PIC-3, it will record single channels alternately or two or more channels simultaneously. Features include an interchangeable modular amplifier with three-channel erase, record and reproduce head. Complete interlock with projector and reproducers for forward-reverse operation is provided. The recorder also features remote control of all functions including erase-record, "sync play" from combination record head or from reproduce head, lock-run, forward-reverse and monitor control. The PIC-3 is priced at \$8,750.

A solid-state transient suppressor capable of protecting electrical and electronic equipment from damage due to extreme voltage surges has been announced by IRC, 401 N. Broad St., Philadelphia, Pa. 19108. The devices are reported to provide as much as 20 kW of transient power suppression. The devices are used to suppress transients on power lines supplying communications equipment, instrumentation or computer loads. Typical ratings are 36 V and 200 V with power capability as required.

A complete low-light-level sensor assembly consisting of a 40- to 25-mm fiber optics image intensifier and a 25-mm fiber optics input SEC (Secondary Electron Conduction) camera tube has been announced by Westinghouse Electronics Tube Div., P.O. Box 284, Elmira, N.Y. 14902. The Intensifier, designated WX-30677, is fiber-optically coupled to the WX-30691 SEC camera tube to form a single complete package. The combined package makes it possible to use simple automatic light control circuits over a wide range of intensities since both the intensifier and image section of the SEC are electrostatically focused. The package is 14 in. long and 4 in. in diameter. Prices begin at \$7,500.

The Aerial Photographic Computer designed for rapid and convenient solution of problems relating to aerial photography has been announced by Data Corp.'s Industrial Products Subdivision, 7500 Old Xenia Pike, Dayton, Ohio 45432. The device is 8½ in. in diameter and consists of four individually rotatable circular plastic discs and a cursor bar fastened together on a common center. The front side shows scales that provide numerical values for aerial photographic system parameters, such as image resolution, angular resolution and ground resolution as a function of selected flight conditions and camera system constraints. The reverse side provides solutions for constraints such as ground coverage, exposure interval and slant range as a function of selected flight conditions and camera system parameters. The computer is priced at \$39, including instruction manual, instruction card and carrying pouch.

The Tru-Broad focusing floodlight for wide and smooth coverage has been announced by Berkey-ColorTran, Inc., 1015 Chestnut St., Burbank, Calif. 91502. The Tru-Broad is available in both motion-picture and television models. The motion-picture version (LQTB-10) weighs 9½ lb. It incorporates the new ColorTran cast-aluminum yoke with integral mounting bracket. It is priced at \$85. The television model (LQTB-10/TV) weighs 8½ lb and is supplied with a yoke incorporating a C-Clamp for mounting on an overhead rail or pipe. Focusing is accomplished by a steel ring (for pole operation) at the bottom of the housing and a control lever (for hand operation) at the rear of the housing. It is priced at \$89.

Improved 2,000- and 5,000-W tungsten-halogen lamps for television and motion-picture studios have been introduced by Sylvania Electric Products Inc., 730 Third Ave., New York, N.Y. 10017. The lamps, said to have nearly three times the effective useful life of conventional incandescent studio lamps, are directly interchangeable with standard studio lamps, the announcement stated. Color temperature efficiency in the new lamps is maintained because the tungsten evaporated from the filament is not deposited on the lamp wall but is re-deposited on the filament itself. Other features include greatly reduced bulb size. The lamps are also designed for low-noise

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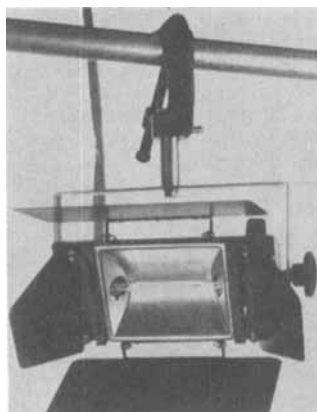
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operation even when controlled by electronic dimmers. A complete description, including ratings, has been prepared by Thomas M. Lemons, Applications Engineer.

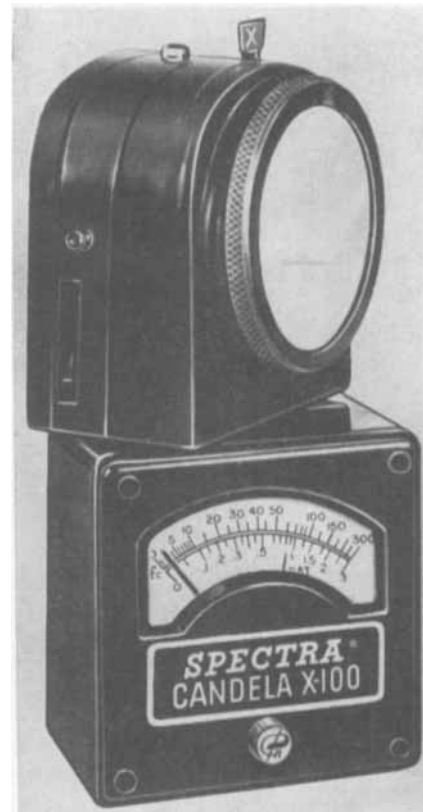
The Christie Xenolite Model BSF50-F65 is one of a new series of xenon and mercury arc lamp illuminator systems produced by Christie Electric Corp., 3410 W. 67 St., Los Angeles, Calif. 90043. Xenolite systems include lamphouses with optics, rectifier power supplies, igniters and bulbs up to 6,500 W. The BSF50-F65 is a 4,200-W unit specially designed for 35mm and 70mm motion-picture projection with screen sizes up to 60 ft or rear-screen slide projection up to 50 ft wide. The lamphouse has a split primary mirror used in conjunction with a secondary mirror and beam-shaping optics to produce a field that is brighter and up to 95% flat. Model BSF50-F65 is priced at about \$4,000.



Two new lighting equipments, Mini-Lites "6" and "10", have been announced by Berkey-ColorTran, 1015 Chestnut St., Burbank, Calif. 91502. The Mini-Lites weigh less than 5 lb and measure less than 3 in. deep. Features include integral 4-leaf barndoors incorporating an improved reflector design for increased light. The Mini-Lites operate directly from 120 or 230 V, ac or dc. Utilizing a 650-W, 3,200 K quartz lamp, the "6" produces 97 fc at 10 ft with a broad light pattern. The "10" (above) produces 159 fc at 10 ft using a 1000-W, 3,200 K quartz lamp. Prices for the new MiniLites in motion-picture or TV models range from \$38.95 to \$53.

Two new footcandle meters, the Spectra Milli-Candela and the Spectra Micro-Candela, have been announced by Photo Research Corp., 3000 North Hollywood Way, Burbank, Calif. 91502. The basic difference between the two meters is in sensitivity, the Micro-Candela being 1,000 times more sensitive than the Milli-Candela. Both instruments measure the integrated illumination incident on the plane of a light receptor disc. The disc is cosine-corrected so that all incident light in any part of the forward hemisphere is "seen" and measured. Leveling screws and a leveling bubble ensure precise horizontal positioning of the light receptor disc. Both models have seven basic full-scale measuring ranges controlled by a range switch. A photomultiplier tube is used for light sensing and it is color corrected to the

standard observer visual response. A separate control unit module houses the micrometer and readout scale. The meter scale is 4½ in. across and is mirror-backed. The Milli-Candela is priced at \$1,058.75 and the Micro-Candela is priced at \$1,058.



The Spectra Candela X-100 Footcandle Meter has been announced by Photo Research Corp., 837 N. Cahuenga Blvd., Hollywood, Calif. 90038. Described as "pocket-sized, convenient and sensitive," the device uses two different types of photocells for light measurement. A selenium photovoltaic cell is used for "normal" and high light levels and a CdS photoconductive cell measures low light levels. The change from high to low range is instantaneous by pressing a switch on the side of the meter. The cells are on separate circuits and are color corrected. By the use of multiplier slides and by switching from one cell to the other, six different full-scale readings, ranging from 1 to 50,000 fc, are possible. Other features include traceable calibration, hand-drawn meter scale and a swivel head. The price is \$139.50, including multiplier slides.



The new Spectra Screen Brightness Meter introduced by Photo Research, 3000 North Hollywood Way, Burbank, Calif. 91502, is designed to be mounted in the port of the projection booth beside

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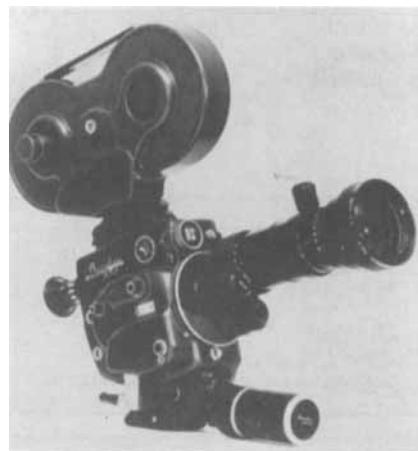
the projector. The instrument is a $1\frac{1}{2}^\circ$ spot meter consisting of a photomultiplier tube, an objective lens and a viewfinder. It has a 5° viewing angle. A circle in the center of the field defines the $1\frac{1}{2}^\circ$ measuring angle. Brightness is indicated in foot-lamberts on the $2\frac{1}{2}$ -in. meter scale. Basic full-scale reading is 0 to 25 fL. Optical attenuation, controlled by a range wheel provides two additional higher ranges, 0 to 250 fL and 0 to 2,500 fL. The instrument is powered by two 4.2-V mercury batteries and requires no external power source. It weighs $4\frac{1}{2}$ lb and measures 7 by $5\frac{1}{2}$ by 3 in. It is priced at \$443.

A new cadmium sulfide spot meter equipped with electrically-powered illuminated scales and pushbutton-activated for automatic response to light changes has been announced by Minolta Corp., 200 Park Ave. South, New York, N.Y. 10016. Designated the Minolta Auto-Spot 1° , the meter features through-the-lens viewing, focusing and scale-reading, full-focusing as close as 3.3 ft and light-measuring angle of 1° in an 8° total viewing field. Sensitivity ranges are: exposure value, 2 to 18; ASA, 3 to 25,000; shutter speeds, $1/2000$ s to 30 s; aperture, $f/1$ to $f/45$; movie speeds, 8 to 128 frames/s. The conventional-camera model is priced at \$225. The television version, which incorporates an IRE scale and an fL scale ranging from 0.32 to 5000 and a special exposure compensation indicator, is priced at \$250.

Gulton sealed rechargeable batteries, manufactured by Gulton Industries, are distributed by Leopold Enterprises, Inc., One N. Merrick Ave., Merrick, N.Y. 11566. The VO series of alkaline batteries is of sealed, sintered plate, nickel-cadmium construction. Features include long life, low charging voltage, high discharge rates and operating temperature range between -20°F and $+140^\circ\text{F}$. Special units are available down to -40°F . The electrodes are treated by special processes to ensure large active surfaces in an extremely small volume.

A combined zoom and focus drive for the Angenieux 12–120mm zoom lens has been announced by Zolomatics Corp., 5875 Melrose Ave., Hollywood, Calif. 90038. The zoom and focus motors are mounted on the same bracket and operated from a handheld battery pack that provides for low and fast speeds. The unit is compact and light in weight. It is priced at \$750.

A new synchronizing drive system for Auricon Cinevoice conversions has been developed by F&B Ceco, 315 W. 43 St., New York, N.Y. 10036. The system, called Minisync, is a miniature, transistorized inverter and tuning fork frequency control. Weighing 9 oz, the device is so compact that it has been built into the camera body without altering the film movement or camera contour. The Minisync conversion is used by the cameraman for shooting wireless, double system sync sound with any standard 12-V dc battery weighing as little as 3 lb, thus eliminating the 13-lb conventional shoulder-type power supply. Cost of installing Minisync in any existing Cinevoice conversion is \$995.



The new Beaulieu 16mm camera, Model R16, has incorporated in its design a continuous stimulus response electronic circuitry. A behind-the-lens rapid response Cds meter sensor, coupled with a transistorized computer, provides for automatic control of the iris diaphragm. The camera is encased in a tough metal alloy that will not crack if the camera is dropped. The camera, without lens or magazine, weighs only 4 lb. Either a 100-ft standard load magazine or Beaulieu's lightweight 200-ft daylight load magazine can be used. The film can be run at all speeds from 2 to 64 frames/s.

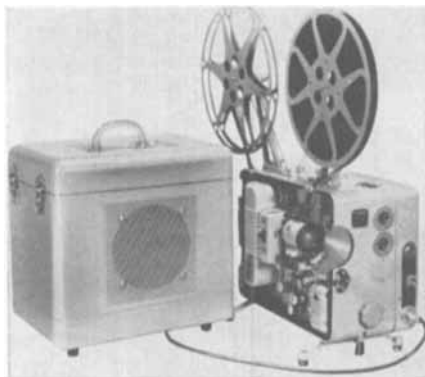
The cameras announced as available in April and May from the firm, Cinema Beaulieu, 921 Westwood Blvd., Suite 225, Los Angeles, Calif. 90024, are priced at \$1,590, \$1,834.50 and \$1,969, depending on the type of Angenieux lens selected (12.5–75, 17–68, or 12–120).

The Beaulieu super 8 camera features include a "click stop" on the film speed dial at 18 frames/s which enables the cinematographer to speed up to (for example) 50 frames/s then return to the 18 frames/s speed without looking at the dial. The camera has a new camera battery compartment, two one-piece batteries (250 mA and 500 mA) and a battery container. The batteries can be inserted only one way, a design to ensure correct polarity. The new container permits external use of the batteries or external charging. Other features include coating of all the optics in the viewing system; a patented motorized lens for automatic exposure control; complete lens interchangeability; variable super 8 shutter and provision for a complete range of film speed settings from 2 to 50 frames/s.

A lightweight magnesium blimp for the Arri 16 camera has been announced by Century Precision Optics, 10661 Burbank Blvd., North Hollywood, Calif. 91601. The blimp weighs 27 lb. Features include 360° access for loading, external calibration disk for ring gear follow-focus, sound-proof windows and lighted interior. The blimp is hydro-sealed and has an $8\times$ reflex viewfinder system. It is priced at \$985.

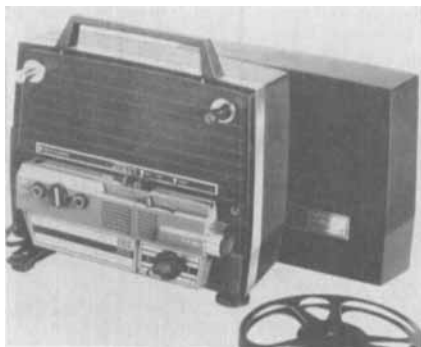
A lockable cuing fishpole boom has been announced by Recording Equipment Co., 114 W. 70 St., New York, N.Y. 10023. Features include quick-locking of the head for both cuing and fixed-head operation

and a completely retractile internal cable. The cuing head uses Delrin gears and bearings. The housing is cast aluminum and the shafts are 1/4-in. hardened steel. To eliminate the problem of the microphone flopping when cued or panned rapidly, an adjustable Delrin damping mechanism has been incorporated. To change from a cuing to a fixed head, a spring-loaded lock quickly clamps the head to make it entirely rigid and with a short twist the head can be released. Price of the fishpole boom is \$265.



The Viewlex JAN 16mm sound projector has been announced by Viewlex, Inc., Holbrook, L.I., N.Y. 11741. A "twin" of the military JAN, the projector, now available for nontheatrical use, such as in schools and auditoriums, is of all-metal construction for heavy-duty use. It has a 1,000-W lamp which projects through a fast, coated $f/1.6$, 2-in. lens for brilliant picture projection. Features include a new solid-state sound scanning method, tone controls, modular construction for easy maintenance, built-in film shrinkage compensator and 2,000-ft reels. The projector is available in three models. JAN 2, for optical sound films, is priced at \$1,490. JAN 3 incorporates a built-in changeover mechanism so that two projectors can be synchronized for uninterrupted showing of two or more reels of film. It is priced at \$1,613. JAN 4 is for use with optical and magnetic soundtrack films and is priced at \$2,025.

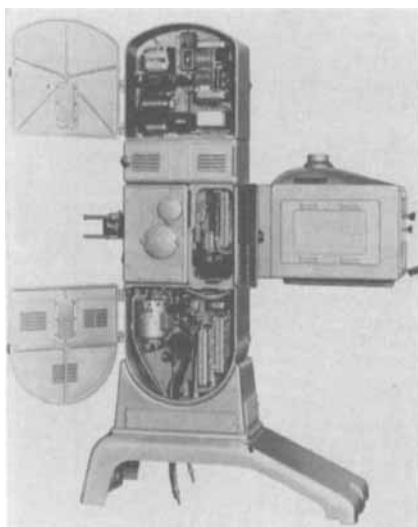
Also announced by Viewlex is the Cine Sound 16, a compact projector for 16mm sound or silent film. It has a built-in rear-projection screen of more than 50 in². to give full picture brilliance in ordinary room light. It is priced at \$795.



Anscovision 688, a dual 8mm projector for 8mm or super 8, has been announced by General Aniline & Film Cpr., 140 W. 51 St., New York, N.Y. 10020. The ma-

chine is an automatic-threading projector with a fast, $f/1.5$ color-corrected zoom lens. In addition to normal forward and fast rewind speeds, the new projector can also operate at a slow-motion speed of 6 frames/s. Features include an automatic room-light outlet, 500-W brilliance, 400-ft reel capacity and a self-contained case. The projector is priced at less than \$115.

The Heurtier Dual Projector for 8mm and super 8 has been announced by Cinema Beaulieu, 921 Westwood Blvd., Suite 225, Los Angeles, Calif. 90024. The projector is available in both silent and sound versions. Features include automatic threading, nine projection speeds, still projection, long-life quartz-iodine lamp, flickerless slow-slow speeds and a voltage selector control for all voltages from 100 to 240 V ac. The silent version is priced at \$249.50 and the sound version is \$659.50.



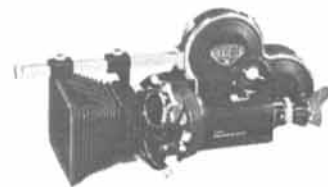
The Pentacon D 11 x A, a 35mm sound projector produced by VEB Pentacon Dresden, Hauptwerk, Schandauer Str. 76 DDR-8021, Dresden, Germany, features a built-in, automatic control device to permit changeover to the second machine after the film has run down. The drive motor and the xenon high-pressure lamp are automatically switched on, picture and sound fade in. The projectors are also automatically switched off. All of the firm's "D" projectors with a xenon lighting system can be equipped with the automatic control device. Automatic switching of the auditorium lights, footlights and curtains can be achieved by means of a device called the Pyrcomat attachment.

A rear-screen-projection mirror mounted on a universally adjustable stand has been announced by Spindler & Sauppe, Inc., 1329 Grand Central Ave., Glendale, Calif. 91201. It is designed for use with all motion-picture projectors and all Selectroslide projectors. It is said to be especially useful in correcting the image of rear-projected motion pictures. The 4 3/4-in.² aluminized mirror is coated on the first surface to avoid second-surface images. A locking ball joint permits the mirror to be set at any angle from horizontal to vertical, and to any position in a complete circle. A 3-in.

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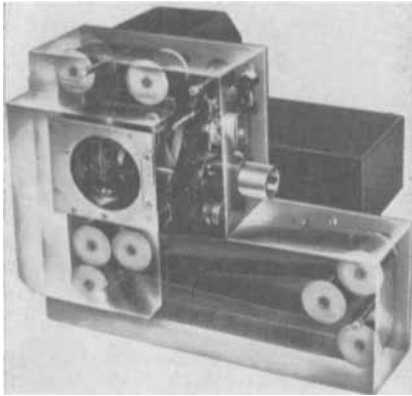


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adjustment in height is also provided for proper alignment with the projector lens. The unit, designated Model 453, is priced at \$29.50.



RAP 132, a random access projector produced by Mast Development Co., 2212 E. 12 St., Davenport, Ia. 58203, is designed to find and automatically project upon command any one of 100 frames of 35mm filmstrip within 3.5 s. Film movement to an adjacent frame requires 0.25 s. The filmstrip, in color or black-and-white, is formed in a continuous loop. The desired frame is positioned in the aperture with an accuracy of ± 0.010 in. Extensive textual data, schematics or pictorial information can be carried on the $\frac{3}{4}$ by $\frac{1}{8}$ in. film frame. The RAP 132 is commanded from two 10-position rotary switches or, alternatively, from a two-column keyboard for frames 00

to 99. Prices for RAP Model 132 begin at \$1,140.

The Acousta-Voice Equalizer, Model 9014A, has been announced by LTV Ling Altec, Inc., Altec Lansing Div., 1515 South Manchester Ave., Anaheim, Calif. 92803. The instrument is a $\frac{1}{2}$ -octave equalizer and is supplied with 24 knob-adjust 9013 filters. The filters are supplied for each $\frac{1}{2}$ -octave center frequency starting at 60 Hz and ending at 12,500 Hz. The instrument may be rack-mounted or may be used in a carrying case for portable testing application. Model 9014A is priced at \$1,860.

Development of a 30-V Tru-Flector projector lamp designed for use in certain super 8 projectors has been announced by Sylvania Electric Products Inc., 730 Third Ave., New York, N.Y. 10017. The lamp, designated DFE, is designed to have the reliability of low-voltage operation without the addition of a transformer. The reduction in voltage is achieved by the addition of a winding on the motor in the projector. The lamp incorporates a CC8 filament in a T-12 bulb-type. It is priced at about \$5.00.

The Polygon antenna, a uhf broadcast antenna capable of radiating an omnidirectional television signal of maximum-allowable power, has been developed by RCA Commercial Electronics Systems Div., Camden, N.J. The five-sided unit emits a signal of 5 MW when used with a 110-kW transmitter. This is the highest effective

radiated power permitted by the Federal Communications Commission. The antenna is constructed of galvanized-steel reflecting panels welded together at the edges to give a pentagonal cross section and make the unit self supporting. A "belt-line" feed system circles the center of each layer of the antenna to distribute power to the structure's five faces. Zig-zag radiating elements on each face terminate in radiating loads to ensure that the energy propagation maintains the desirable traveling wave characteristic. A radome made of glass fiber covers the antenna assembly. The antenna has a gain of 60 and ranges from 120 to 190 ft in length. The price range is from \$150,000 to \$200,000 depending upon transmitting frequency and other factors.

Temp-Plate, an unusual temperature-indicating decal, is a product of William Wahl Corp., Temp-Plate Div., 1001 Colorado Ave., Santa Monica, Calif. The decals register high temperatures by means of a spot of a light-colored chemical which turns black when the temperature reaches a specified level of 100 F to 1000 F. They will adhere to a clean, dry surface and are said to have $\pm 1\%$ accuracy. They are intended for use wherever a record of high temperature is needed and it is impractical to take a continuous reading from a temperature gage. Sizes range from 3/16 in. diameter, for microminiature equipments, to 8 x 11 in. for larger equipments. Temp-Plates have 54 temperature selections in any desired size or number of indicators.

A square wave generator, Hewlett-Packard Model 220-A, has been announced by Hewlett-Packard, 1501 Page Mill Rd., Palo Alto, Calif. 94304. Intended as general-purpose laboratory instrument, it weighs 4 lb and has a frequency range of 1 Hz to 10 MHz and less than 15 ns rise and fall times. It has solid-state circuitry and supplies square waves with amplitude controllable from 0 to 5 V peak-to-peak into a 50- Ω load. It is priced at \$195.

The StereoRama Work Viewer, a stereoscopic visual-amplification instrument, has been announced by Scientific Instrument Div., Ednalite Corp., 203 N. Water St., Peekskill, N.Y. 10566. The instrument has a high-resolution lens under which objects can be moved up, down and sideways and remain in focus. The Work Viewer is 11 $\frac{1}{2}$ in. wide and 9 $\frac{1}{2}$ in. high. It has a plano-convex lens with 48 in.² of viewing area which overhangs its support to allow for display of objects up to 11 in. wide. Knobs tilt the lens to any desired working angle.


The Ednalite Professional Transparency Viewer and Editor is a product of Scientific Instrument Div., Ednalite Corp., 204 N. Water St., Peekskill, N.Y. 10566. Equipped with a Magnifier, an optical instrument for magnified inspection of transparencies, the Viewer and Editor weighs 21 lb. It is designed for viewing in an upright position, but it can be used horizontally with minor adjustments. It holds all sizes of transparencies from 2 x 2 to 18 x 22 or any combination. It can hold 120 of the 2 x 2 transparencies and six 8 x 10 transparencies. It is priced at \$149.50.



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