

new products

(and developments)

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

An experimental TV picture display system using a laser beam scanned by ultrasonic waves has been developed at Zenith Radio Corp., 1900 N. Austin Ave., Chicago, Ill. 60639. The system has four main components, the light-producing laser, two ultrasonic light-diffraction cells for modulation and horizontal deflection and a mechanical device for vertical deflection. In comparison with the components in a conventional television receiver, the laser is equivalent to the electron gun; the first diffraction cell, called an intensity modulator, is similar to a CRT grid; the second diffraction cell, or horizontal deflector, and

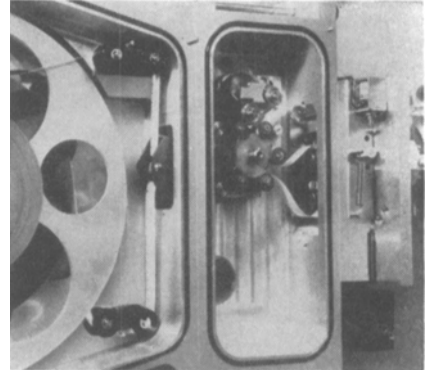
the mechanical vertical deflector perform the function of a television yoke.

The laser contains a mixture of helium-neon gas that emits a steady, extremely bright beam of red light. The light beam first passes into the intensity modulator which impresses the video signals upon an ultrasonic wave that interacts with the light beam to control its brightness. The more intense the sound wave, the more light passes through the modulator. Light from the intensity modulator then enters the horizontal deflector where it is deflected by ultrasonic waves of varying frequency so as to trace out a horizontal line on the screen 15,750 times/s.

The main body of the horizontal deflector is a brass tank with glass windows for passage of the light beam. The tank is filled with distilled and deionized water. Attached to the side of the tank and approximately perpendicular to the beam is a glass block with four steps cut out to prescribed depths. Mounted on each step is a transducer, a thin slab of piezoelectric ceramic that converts electrical signals into ultrasonic waves which pass through the glass block and into the water where they intercept the incoming light beam. The staircase mounted transducers act like a complex directional antenna to interpret the signal frequency automatically and steer the ultrasonic wave in the exact direction to achieve maximum interaction with the light beam. The beam next enters the vertical deflector where it strikes a mirror vibrating in accordance with a 60-Hz sawtooth wave and is deflected vertically to form a two-dimen-

sional picture on the screen. Images can be projected to any size depending on the available laser brightness. Resolution of the present experimental version is somewhat less than that of a conventional TV picture.

A detailed technical paper on Zenith's laser TV projection work is to appear in the October (1966) issue of the *Proceedings of the Institute of Electrical and Electronics Engineers*, that being a joint issue with the *Journal of Applied Optics*.



The Electron Beam Recorder, Model EBR 100, for recording black-and-white television signals directly on motion-picture film has been announced by the 3M Company, Revere-Mincom Div., 300 Lewis Rd., Camarillo, Calif. 93010. Electron beam recording, in operation, eliminates the conventional camera lens, cathode-ray-tube phosphor screen and glass mask, and mates

ColorDyne

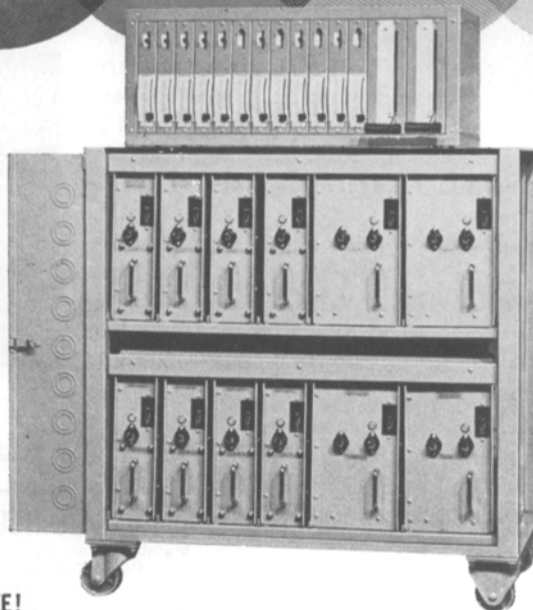
PORTABLE DIMMING SYSTEMS!

- SOLID STATE
- LIGHTWEIGHT

A thoroughly proven compact dimming system. For location or studio! Plug-in racks contain as many as 12 Power Pack Dimmers with total capacity of 80KW. For 120-volt or 230-volt AC operation. Remote Control Center may be operated up to 1000 feet from dimmer plug-in racks.

Also Available: Individual Portable Dimmers, each with its own control.

ONE YEAR UNCONDITIONAL GUARANTEE!



Write for Detailed Literature



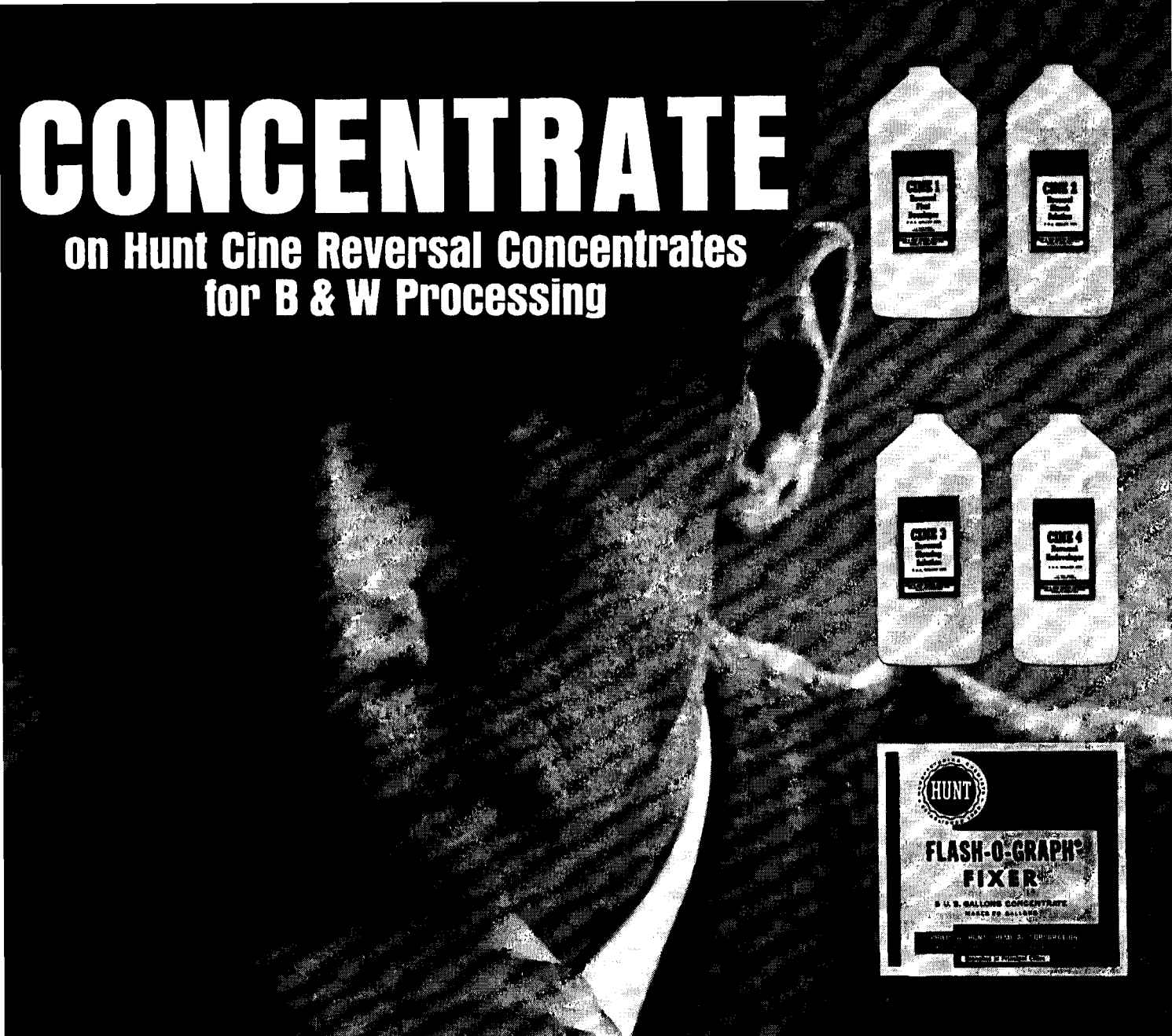
(213) 843-1200

1015 Chestnut St., Burbank, Calif.

A BERKEY PHOTO COMPANY 

CONCENTRATE

on Hunt Cine Reversal Concentrates
for B & W Processing



these are the important facts:

- 1.** Hunt Cine Reversal Concentrates is an all-liquid system that offers solutions of consistent formulation possible only with concentrates. This complete developing system consists of four solutions: Cine 1 — Reversal First Developer, Cine 2 — Reversal Bleach Solution, Cine 3 — Reversal Clearing Solution and Cine 4 — Reversal Redeveloper.
- 2.** Hunt Cine Reversal Concentrates reduce mixing time and avoids the messy mixing of bulk chemicals.
- 3.** Hunt Cine Reversal Concentrates contain special sequestering agents that help keep automatic processors clean during operation by preventing chemical build-up on rollers.
- 4.** Hunt Cine Reversal Developers overcome the problem of developer degradation, usually found in other liquid developers, because of the Hunt Developer Activator System (U.S. Patent 3038801, Foreign Patents Pending) using Graphidone® as one of the developing agents. This assures the user of a ready-to-use, factory-fresh solution, regardless of how long the concentrate has been in inventory.
- 5.** Cine Reversal Concentrates are packed in easy-to-handle cartons of 4x5-qt. poly bottles to a carton (makes 20 gallons) and in economical 5-gallon Cubitainers (makes 20 gallons).

If you process negative B & W Cine film use Cine 5 Negative Developer and Cine 6 Replenisher.

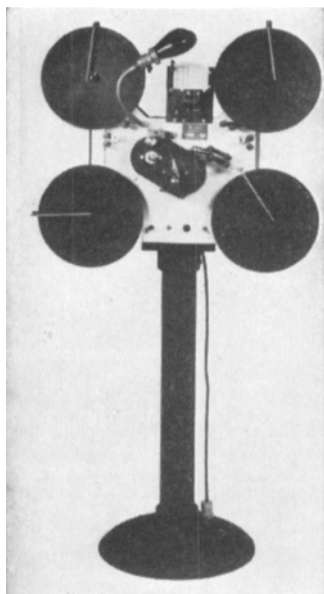
Use **Flash-O-Graph® Fixer** to complete the processing cycle. It is the compatible fixer for this system because of its high speed action that works 3 to 4 times faster than conventional fixer formulas. Flash-O-Graph Fixer is packaged in cartons of 4x1-gallon poly bottles, 5-gallon Cubitainers and 50-gallon drums.

PHILIP A. HUNT CHEMICAL CORPORATION

Palisades Park, New Jersey • Branches in Principal Cities • PHILIP A. HUNT COMPANY (CANADA) LTD. Toronto



S.O.S. TEL-Amatic PRINTER 16mm (model B)



An improved continuous contact sound and picture printer for double 8mm and 16mm films. Has outstanding features never achieved before in the low cost field. Now labs, TV stations, producers, educational institutions and advertising agencies can print their own film in truly professional fashion. Designed for color, black and white, reversal, sound or silent films. TEL-Amatic does them all with rock-steady professional precision. Sufficient light is provided to expose fine grain film. Semi-automatic 21 light change assures perfect exposure.

TEL-AMATIC PRINTER
mounted on Slimline
floor pedestal

\$2750.00

SEND FOR FREE LITERATURE

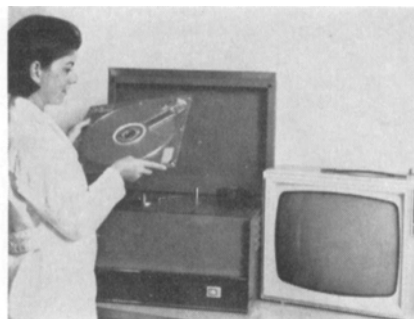


East Coast:
387 Park Avenue South
New York, N. Y. 10016
212 MU 9-9150
West Coast:
10635 Burbank Blvd.
N. Hollywood, Calif. 91601
213 877-5226
Over 40 years of quality service

a photographic film directly to a vacuum chamber. Electrons which normally produce an image on the phosphor screen, record directly on the film. The system is designed for the same accomplishment as kinescope recording. Electron beam recording is said to produce brighter images than can be achieved with kinescoping. The machine has a magazine capacity of 1,200 ft of 16mm film, measures 46 by 65 by 30 in. and weighs about 1,000 lb., and requires two 15 A, 117-V circuits. The price is in the \$60,000 range.

In the illustration is shown the special film gate mechanism which acts as a vacuum wall between film supply and the take-up magazine (left) and the electron beam gun (far right). Covers have been removed to photograph details.

Detailed descriptions of electron beam recording appear in the March 1966 issue of the *Journal* in papers by Richard F. Dubbe and Edward W. Reed, Jr., entitled, respectively, "Television Film Recording Using Electron Exposure" and "An Electron-Beam Television Recorder."



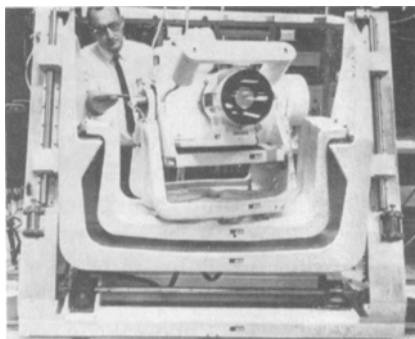
Two magnetic disc recorders used to store television or still pictures have been introduced by Data Disc, Inc., 1275 California Ave., Palo Alto, Calif. One recorder, the F Video Disc Buffer stores up to 20 pictures, one on each of its 20 concentric tracks. Each track is scanned continuously by a separate magnetic head so that any selection of recorded pictures can be shown simultaneously on a number of TV screens. A second recorder, the M Video Disc Recorder, uses interchangeable discs which store 262 pictures, 131 on each side. It has a single movable head which can record or reproduce any of the 131 pictures on a selected side. The F Video Disc Buffer with 20 heads is priced at \$5,193. The M Video Disc Recorder is priced at \$4,953.

A new module for high-band color TV tape recorders that marks the first use of integrated circuits in RCA broadcast equipment has been announced by RCA Broadcast and Communications Products Div., Camden, N.J. The module, a velocity error corrector, improves color program playback quality by compensating for defects caused by mechanical tolerances inherent in the TV tape system. Integrated circuits are employed in about half the modules circuitry. This results in a module about one-fourth the size of a comparable one using transistors and other discrete components. The new module is used to correct electronically for shifts in hue that are caused, for example, by the amount of tape stretching during recording as compared with the stretching that occurs during playback. The module plugs into the RCA TR-70 high-band color

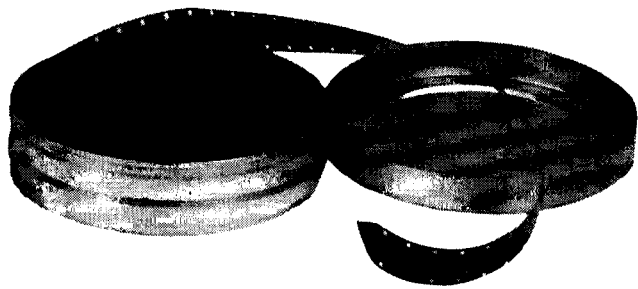
TV tape system. The module may also be used on RCA color TV tape recorders, type TR-22, TR-3 and TR-4.



A solid-state closed-circuit television camera system called the GPL Precision 1000 has been announced by GPL Division, General Precision, Inc., Pleasantville, N.Y. 10570. Available in either a self-contained one-piece model or two-piece unit, the system features all-silicon, solid-state circuitry, and plug-in modules that are interchangeable between the single- and two-unit cameras. The single camera model is 15 in. long, 5½ in. high and 5½ in. wide. It weighs 15 lb. Operational controls are located on the rear panel and controls may be remotely operated up to 4,000 ft. The two-piece camera system includes a miniature 5 lb camera, 8½ in. long, 3½ in. high and 3½ in. wide, plus a 14-lb camera control unit that can be remotely operated from distances up to 2,500 ft. Options are available in both cameras to provide numerous variations to meet specific requirements. Major options include 15- or 30-MHz video bandwidth, choice of seven horizontal scan rates, random interlace sync, internal or external EIA RS170 sync, or 2:1 interlace industrial sync. The system is priced at about \$2,100 without the vidicon.



A 70mm Multidata camera designed to operate at 60 frames/s with a minimum of vibration has been produced by Flight Research Div., Giannini Scientific Corp., P.O. Box 1-F, Richmond, Va. 23201, for use in an Air Force missile tracking program. The camera is installed in a converted KC-135 jet tanker used as a flying laboratory by seven physicists. Vibration of the camera is held to a minimum by means of a specially designed film transport mechanism. In place of an intermittent claw, the film pull-down is accomplished by a set of reciprocating rollers that moves less than ¼ in. in transporting the film the required 2.34 in. Use of the rollers is said to reduce the likelihood of film breakage or damage because



EF + ME-4 = a new high in film quality

NEW FROM KODAK:

EKTACHROME EF Film and the ME-4 process . . . together they give you highest quality results for instrumentation applications.

If you need superb definition, fine color saturation, wide exposure latitude . . . if you need top-quality results and you need them quickly, this combination is designed for you.

KODAK EKTACHROME EF Film gives you granularity and sharpness characteristics of the highest order even when processed to allow for variations in exposure from three stops under to one stop over normal. It is fast enough for low light or unusually short exposure situations. It produces the brilliant, highly saturated colors that you've come to expect from KODAK EKTACHROME Films.

The ME-4 process is fast (only 17½ minutes), clean, and easy to use. With it, you can process not only EKTACHROME EF, but also ER and MS Films—all with better consistency and predictability.

For more information about this important step forward in film and processing, write Instrumentation Sales, Eastman Kodak Company, Rochester, N.Y. 14650, or ask your Kodak Technical Sales Representative.

Kodak
TRADEMARK

FOR SALE

Complete outfit Mitchell R-35, Mark II,

3 lens turret,
with top
magazine
conversion,
pic sync.
Pulse generator,
25, 50, 75, 100 MM
super Baltars,
matte box, 115V
AC-DC motor,
2-400 ft. mags,
2-1000 ft. mags,
mag adapter,
triplex hi-hat,
all cases

Camera
completely
overhauled,
guaranteed
excellent
condition.

Reg. price
\$11,510.00
(3 outfits available)

\$8,750.00

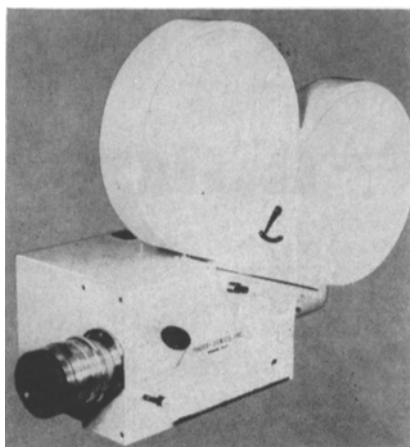
cash, each.

F & B/CECO INC

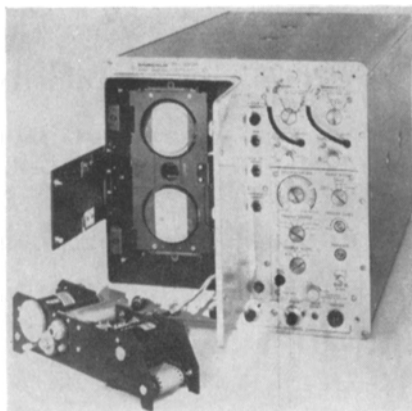


315 W. 43rd St.
New York, N.Y. 10036
(212) JU 6-1420

the roller pulldown bears on a film surface rather than on the edges of the film perforation. The huge camera, which is situated on a four-axis gimbal in the flying laboratory, was first used near Kwajalein Atoll in the mid-Pacific when the KC-135 hovered 5,000 miles down range at about 40,000 ft to track an ICBM fired from Vandenberg Air Force base in California.

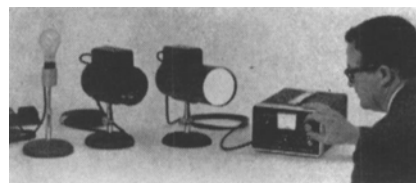


A new camera designed for oscilloscope recording on a 35mm format has been announced by Photo-Sonics, Inc., 820 Mariposa, Burbank, Calif. Designated Model CFC, the camera operates on the principle of constant film velocity. In addition to its primary purpose of oscilloscope recording it can also be used for ballistic synchro and streak photography applications. Speed of the CFC ranges from 50 to 10,000 in./min, with an accuracy of $\pm 0.5\%$. Speed is selected by a preset 10-speed silicon controlled rectifier motor control, and a two-speed transmission. Film capacity is 500 ft, or 1,000 ft with an accessory magazine. The camera is priced at \$9,500.

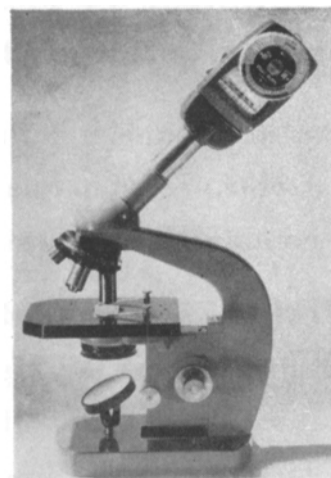


A fiber optics oscilloscope with a bandwidth of dc to 100-MHz and a writing rate of 3×10^{10} trace widths/s on Kodak Type 2475 film has been developed by Fairchild Instrumentation, a division of Fairchild Camera and Instrument Corp., Clifton, N.J., for the U.S. Air Force, Kirtland Air Force Base, N.M. Designated Model 977, the instrument was designed for use in observing and analyzing transient waveshapes in both local and remote environments. The minimum resolution is 350 trace widths in the vertical axis and 450 in the horizontal. In order to obtain maximum light intensity and high-quality photography, the unit includes a 35mm type 9771 camera and

transport to enable laying the film on the face of the CRT. The oscilloscope is priced at \$8,200.

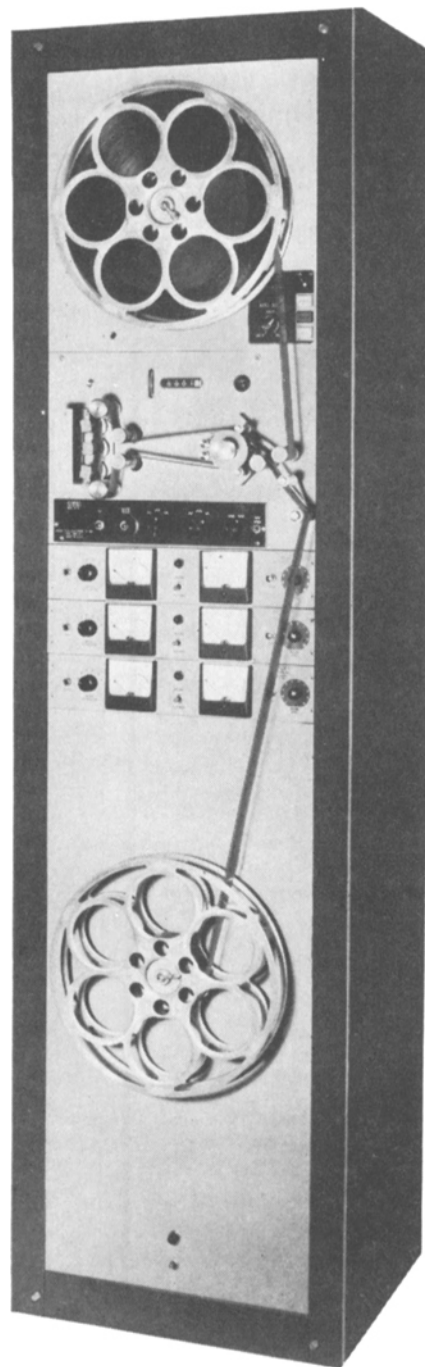


The Model 220 Calibrated Optical Source System, announced by Gamma Scientific, Inc., 5841 Mission Gorge Rd., San Diego, Calif. 92120, is a "new comprehensive system for standardizing absolute energy measurement in the visible spectrum," according to the announcement. The system is intended for use as a standard of radiance and irradiance, or luminance and illuminance through the use of a number of different types of heads. Different color temperatures, spectral outputs and levels can also be produced through the use of special filters and attenuators. The system includes a power unit, consisting of a regulated dc power supply, a reference of dc voltage, an electronic galvanometer and a series of standard heads containing special tungsten filament lamps. When the system is used to standardize a photometer, spectroradiometer or other detector, the measuring instrument or device may in turn be used to measure an unknown source.



An exposure meter called Luna-PRO has been announced by Kling Photo Corp., 25-20 Brooklyn-Queens Expressway West, Woodside, N.Y. 11377. The instrument is designed to respond to light conditions ranging from brightest sunlight to levels bordering on complete darkness. A brightness range selector for the high and low ranges automatically projects the appropriate scale into position. When released it locks the obtained measurement on the scale for future reference or for reading the scale under a brighter light. Readings from the high and low indicator scales are transferred manually to a "computer ring" which can be preset for ASA exposure indexes from 6 to 25,000 in $\frac{1}{4}$ -degree increments from 1 to 13. The unit is priced at \$69. A microscope adapter, priced at \$15, locks over the cell window of the exposure meter. The adapter fits the ocular tube of any standard microscope to take readings of even unusually dense or dark specimens.

M.T.E. 1000 SERIES MASTER MAGNETIC RECORDER



Presents a new approach to:

*POST-SYNCING
ELECTRONIC EDITING
SOUND MIXING*

Features:

Record and erase ON or OFF not discernible

Cutting IN or OUT during dialogue or music passage makes possible corrections on recorded tracks

Controls for selective or simultaneous recording on multi-track models can be remotod

Automatic record defeat in reverse

Plug-in head assemblies interchangeable for 35mm, multi track and 16mm

MAGNA-TECH ELECTRONIC CO., INC.

630 Ninth Avenue, New York 36, N. Y.

November 1966 Journal of the SMPTE Volume 75

1149

XETRON

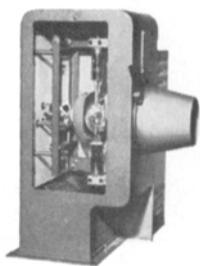
PRODUCTS DIVISION

Special Light Sources for
Audio Visual Applications

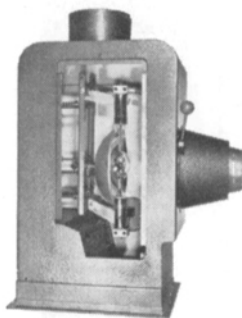
XETRON LAMPHOUSES

XETRON POWER SUPPLIES

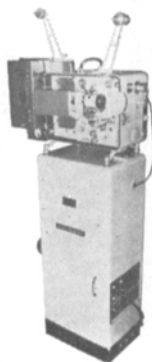
XETRON BULBS



CX-450
Miniature light source
suitable for many 16mm
and 35mm projector
applications.



CX-900 Ideal light source for screening rooms,
laboratories and small theatres. Adaptable to all
projection equipment.



CJX-450
Console version of stand-
ard JX-450 modification
with power supply and
control panel. High in-
tensity type light provides
great increase in screen
brightness.

Also Available

CJX-1000 Provides maximum screen re-
sults for 16mm projector.

Literature on request.
Dealerships available.

XETRON

PRODUCTS DIVISION



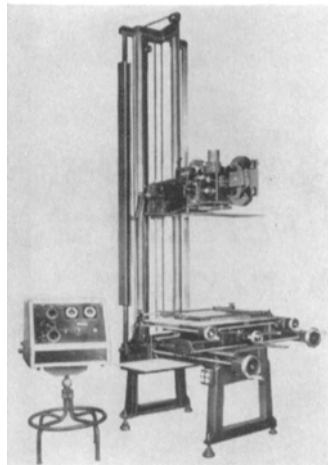
CARBONS, Inc.

10 Saddle Road
Cedar Knolls New Jersey
P.O. Box K 07927

Make-up kits containing items developed by the Research Council of Make-up Artists Inc. (RCMA) for stage, screen and television use are available from F&B/CECO, 315 W. 43 St., New York, N.Y. 10036, according to separate announcements from RCMA and F&B/CECO. A complete basic kit has been assembled to include all make-up items required for the latest types of color film stocks including Eastman Kodak Ektachrome ECO 7255, EMF 7256, EF 7257 and EF 7258, color negative 5251 and Anscochrome professional 242 as well as for color television and theatrical applications. The complete basic kit contains over 65 items of foundation bases, eye color, lip color, mascara, lotions, brushes, puffs, etc. The items are contained in a compact case and step-by-step instructions are included. The kit is priced at \$75.

In making the announcement, Vincent J-R Kehoe, RCMA Director of Research, said that the RCMA Research and Supply Division has moved from its New York address to 52 New Spaulding St., Lowell, Mass. A paper by Mr. Kehoe describing in detail the theory and practice of make-up for motion picture and television appears on earlier pages of this issue of the *Journal*.

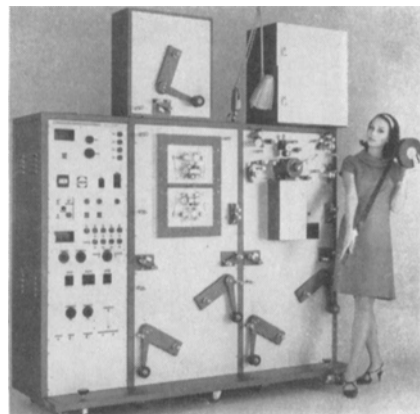
Additional information about the make-up kits and separate make-up items are available from Ronald Groen at F&B/CECO.



A new animation and filmstrip stand has been introduced by Richmark Camera Service, Inc., 516 Timson Place, Bronx, N.Y. 10055. The unit is available as a basic stand or with animation compound, electric zoom and auto focus, etc. The stand features a rugged cast-iron base, ground steel columns and with all movements ball-bearing mounted. Zoom range is from 1 to 36 field. The compound movement is 19 in. North/South and 27 in. East/West. The peg track movement is 32 in. There is a 360° ball-bearing rotation of the table top and all movements have handcranks and counters. The animation stand is available with the firm's rackover camera which uses the Acme 16-35 camera body. The camera has a ball-bearing mounted rackover with an automatic projection light that projects the field size onto the table top for easy focus and line-up. The complete stand package for animation 16-35mm is priced at \$16,500. The basic filmstrip stand motorized is \$2,350.

A fully automatic sensitometric photo-

graphic film processor for use in quality-control applications has been developed by Itek Corp., Lexington, Mass. The processor (fabricated by Rolor Corp.) has been designated the FloFilm (a trademark of Itek Corp.) Film Processor. The machine, which uses air and liquid bearing applicators, can process cut sheets and roll films and can also be modified for the processing of glass plates. It can handle continuous roll, multiple- or single-strand, thin- or thick-base film up to 11.5 in. wide. Temperature can be controlled between 60 F and 120 F with the capability to process up to 150 F. Features include both integral and automatic replenishment from 1.0 ml to 100 ml/min on individual or gaged control. Density uniformity within the image area is said to vary no more than ± 0.02 at a density level of 1.0. Gamma reproduction and film speed reproduction variation do not exceed $\pm 3.0\%$ while processing shrinkage can be held to 0.06% with 5.5.-mil triacetate base film.

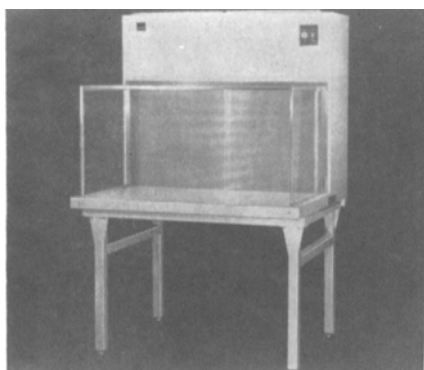


A printer designed to allow economical production of super 8 prints with magnetic sound has been introduced by Bell & Howell Company's Professional Dept., 7100 McCormick Rd., Chicago, Ill. 60645. Designated Design 6600 Model K, the panel printer is said to produce contact super 8 prints with magnetic sound at the rate of 800 ft/min. This speed is made possible by printing four identical rows of pictures and the corresponding four magnetic soundtracks in one single pass of the film. The pictures are contact-printed from a special 35mm/super 8 internegative developed by Eastman Kodak, and the sound records are reduction transferred from a 16mm magnetic master. Continuous monitoring of the four soundtracks is featured to assure more consistent sound quality control and to eliminate the necessity of listening to all of the prints. The printer is described in detail in a paper by A. Balint, R. C. Lovick and W. L. Stockdale on "Design Considerations for a High-Efficiency Contact Motion-Picture Printer With Magnetic Sound Transfer and Monitoring." The paper was presented at the Society's 100th Technical Conference at Los Angeles.

Installation of an OMAC developing machine for the Kodak M.E.4 processing system, said to produce enhanced results from the new Kodak Ektachrome films, has been announced by Reeds Colour Film Laboratories, 89/91 Wardour St., London, W.1, England. The M.E.4 process is used

for Ektachrome Types EF 7241 and EF 7242 which are replacing the ER 5257 and 5258. The OMAC machine operates at high speed. The system differs from conventional color processes in that it needs very short development times due to high solution temperatures and strong alkaline baths. A pre-hardening bath makes possible forced development. The normal speed of Ektachrome EF 7241 is 160 ASA and that of EF 7242 is 125 ASA. By using forced development these speeds can be increased to as much as 1000 ASA.

The exacting chemical requirements of the process affect the mechanical construction of the developing machine, the announcement pointed out. Materials used in the construction of the machine are chemically resistant plastic, stainless steel, titanium or hestaloïd. Solution temperatures may be set at 95, 100 or 110 F and are automatically maintained constant to within $\pm \frac{1}{2}$ F.



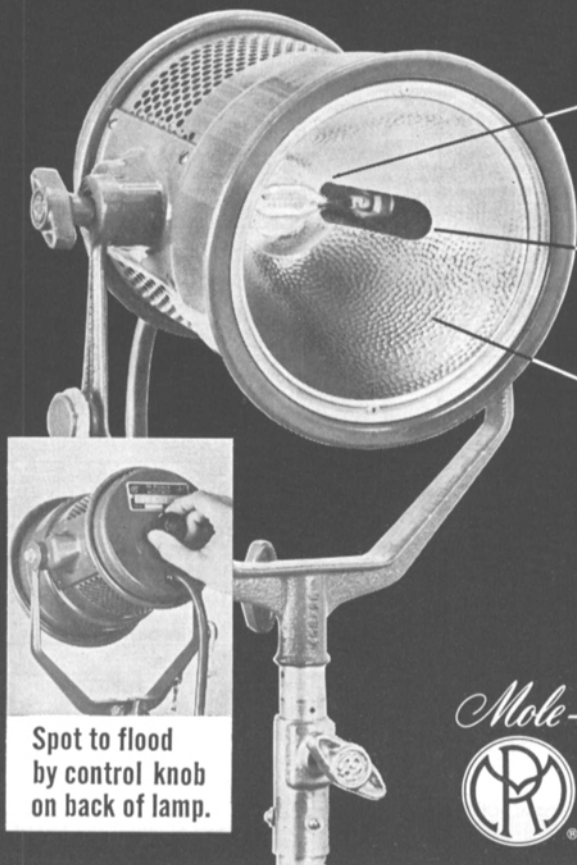
A table model clean work station with a separate stand to provide portability has been announced by Agnew-Higgins, Inc., 7532 Anthony Ave., Garden Grove, Calif. 92641. The unit is 4 ft wide. Contaminated air enters the unit through prefilters in hinged grilles in the top of the cabinet. Twin blowers then force the air at a velocity of about 1 mi/hr in laminar flow fashion through HEPA filters which form the entire backwall of the work chamber. Particles produced by the work process or shed by the person seated at the bench are washed backward into the aisle area out of harm's way by the massive flow of clean air issuing from the open front of the work chamber. The unit (Model 43S) is priced at \$703. Model 43 (without the stand) is priced at \$640.

Availability of the Zeiss Vario-Sonnar $f/2.0$, 12.5-75mm zoom lens for all Arriflex 16S and Arriflex 16M cameras has been announced by Arriflex Corp. of America, 25-20 Brooklyn Queens Expressway West, Woodside, N.Y. 11377. The optical construction of the lens comprises 12 components containing a total of 15 lens elements. The lens focuses from infinity down to 5 ft and is marked in both feet and meters. It covers a 6:1 zooming range with focal lengths continuously variable from 12.5 to 75 mm. The zoom movement is said to be exceptionally rugged and smooth. At the 12.5 setting the angle of view corresponds to a wide angle with a 52° angle of view. When set for 75 mm the angle of view is 9.5°. Because of its light weight and compact size the lens does not require a lens cradle. It is priced at \$896.

An audio frequency response meter which combines a logarithmic frequency meter and a logarithmic voltmeter in one package has been announced by Waveforms, Inc., 333 Sixth Ave., New York, N.Y. 10014. The meter, called Model 620B has a frequency range of 20 Hz to 20 kHz. An edge-wise meter displays the frequency of any signal between 0.01 V (-40 dBm) and 100 V (+40 dBm), and between 20 Hz and 20 kHz. The logarithmic voltmeter readout is a fan-type meter with 0 dB at the center of the scale. The 0 dB reference point is continuously variable from 0.1 V (-20 dB) to 10 V (+20 dBm). Meter scales are ± 2 dB and ± 20 dBm. The meter measures 6 by 4 $\frac{1}{4}$ by 6 in. and weighs 6 lb. It is priced at \$600.

A sound reinforcement system designed and built by Studio Electronics Corp., 11922 Valerio St., North Hollywood, Calif., has been installed in a new Las Vegas night club called Caesars Palace. The major element in the SEC system is a 6-ft console that controls all the sound from a 65-ft-wide stage. Up to 30 microphones can be connected into the console (of which 18 can be "live" at any one time), plus 6 magnetic-tape tracks and 6 tape-cartridge inputs. Color-coded switches and level controls on the console allow all of the various inputs to be blended into three point source outputs that go to three loudspeaker clusters above stage right, stage center and stage left. The switches on the console can be de-

Mole-Richardson new focusable 1000 watt quartz light with variable beam from spot to flood.



MICKEY-MOLE (Type 4081)

12 standard ASA coded globes available. 500 watts to 1000 watts. 3200° K and 3400° K.

Globe mounted in stationary, rugged sockets. Only reflector moves when focusing.

Molebrite specular aluminum reflector engineered for precise diffusion of light.

Complete accessory group available.

SEND FOR BULLETIN 108.

Spot to flood
by control knob
on back of lamp.

Mole-Richardson Co.
937 No. Sycamore Ave.
Hollywood, Calif. 90038
(213) 654-3660

pressed to convert the three outputs into a single output to all three clusters. Each input can be individually equalized at high and low frequencies and each of the three outputs is provided with its own echo chamber and echo-volume controls.

Selected inputs (such as special effects from tape cartridges) may be directed to "surround" loudspeakers mounted across the room. Controls on the console allow such effects as thunder rolling across the audience or the sound of gunshot at the rear of the auditorium at the instant an actor falls on stage. A special feature of the SEC console is the capability of controlling and pre-setting the position of five drop microphones and three pop-up microphones. Markings on the controls determine the

final height of each microphone. The operator sets the control to the desired setting and at the proper time in the program depresses the switch that raises or lowers the unit. The Caesars Palace installation also includes three wireless microphone systems. A permanent antennae system above the stage picks up the transmitted signal and directs it by coaxial cable to the console. The complete system covers all aspects of public address and sound, including loudspeakers throughout the gaming rooms and intercom links between the stage, dressing rooms and operating booths.

A new tensilized Mylar-base audio recording tape, 1/4-mil thick and made with

a specially developed oxide formulation has been introduced by Reeves Soundcraft Div. of Reeves Industries, Inc., Great Pasture Road, Danbury, Conn. The tape, designated TPT, was developed for applications requiring extra strength or where rough handling is likely. The tape is said to be especially stretch resistant and may be interspliced or programed with standard tape without causing differences in playback level. The tape is available in lengths of 600, 1,800 and 3,600 ft priced at about \$2.72, \$6.80 and \$11.75, respectively.

An improved optical sound reproducing system for single-channel as well as multiple-channel sound reproduction has been

Professional Services

AMEX AGENCY, INC. — EXPERT APPRAISALS
 Want Loan or Bank Credit?
 Upping Bank Credit? Pricing Inventory?
 Selling or Merging? Certified Valuations
 backed by 40 years dealing with Producers,
 TV Stations, Sound Studios, Labs, Theaters
STRICTLY CONFIDENTIAL-REASONABLE RATES
 65 Oriental Blvd., Brooklyn, N.Y. 11235
 (212) 743-1465

**Professional Motion Picture Equipment
 RENTALS * SALES * SERVICE**
 Phone or write for latest
 Rental & Sales Catalogs
Birns & Sawyer Cine Equipment Co., Inc.
 6424 Santa Monica Blvd.,
 Hollywood, Calif. 90038
 (213) HO 4-5166

SELLING?
**ALL MARKETING, INDUSTRIAL or RESEARCH
 SERVICES including IMPORT and EXPORT**
 outlets, LICENSING arrangements, etc.
 Write to: E. J. BRUCE-VANDERPUYE LTD.
 P.O. BOX 90, ACCRA, GHANA. Telex: 207
 OVERSEAS OFFICES
 UNITED KINGDOM U.S.A.
 724, FULHAM ROAD 10 WEST 33 STREET
 LONDON S.W. 6 NEW YORK, N.Y. 10001

MUSIC FOR EVERY MOOD
 Complete background music library
 cleared for RADIO-TV-MOTION PICTURES
 Quality recordings by full-sized orchestras
 Complete selection of sound-effects records
 also available
**WRITE FOR CLEARANCE APPLICATION
 FORMS AND CATALOGS**
THE CAMERA MART, INC.
 1845 Broadway, New York 23

**CRITERION
 FILM LABORATORIES, INC.**
 Complete laboratory facilities for 16
 & 35mm black-and-white and color
 33 West 60th St., New York 23, N. Y.
 Phone: COLUMBUS 5-2180

ELLIS W. D'ARCY & ASSOCIATES
 Consulting and Development Engineers
 8mm Magnetic Sound Printers
 Motion-Picture Projection
 Magnetic Recording and Reproduction
 Box 1103, Ogden Dunes, Portage, Ind. 46368
 Phone: (219) 895-2585

RENT
 16mm, 35mm, 70mm
 Motion Picture Cameras
 High Speed Cameras
 Special Cameras
 Lenses
 Lights
 Processing Equipment
 Editing Equipment
 SEND FOR
 CATALOG
GORDON ENTERPRISES
 5362 N Cahuenga, North Hollywood, Calif.

FRANK P. HERRNFELD
 Engineering Consultant
 (Formerly with
 Frank Herrnfeld Engineering Corp.)
 P.O. Box 34802
 Los Angeles, California 90034
 (213) 870-2867

REELS • CANS • FIBER CASES
MOTION PICTURE ENTERPRISES
 Tarrytown, N. Y. 10592
 N.Y.C. Tel: 212 CI 5-0970

TUFF COAT
 Cleans, kills static, lubricates and invisibly coats
 and protects all types of film against scratches
 and abrasions. SAFE, easy to use. NO carbon
 tet. Special type available for magstripe and
 video tape. Write for brochure "S"
NICHOLSON PRODUCTS COMPANY
 3403 Cahuenga Blvd. Los Angeles 28, Calif.

**SAVE
 25-50%
 ON
 PRINT
 COSTS**
 Users of Permafilm Protection and
 Perma-New Scratch Removal show
 savings ranging from 25% to 50%
 and more by lengthening the life of
 their prints. A money-back test will
 convince you.
PERMAFILM INCORPORATED
 79 Fifth Ave., N. Y. 3, AL 5-5757-8-9
PERMAFILM INC. OF CALIFORNIA
 7264 Melrose Avenue
 Hollywood Webster 3-8245

DAMAGED FILM HOSPITAL
 Why Junk Damaged, Scratched, Brittle,
 Stained, "Rainy," Worn Film?
"THE FILM DOCTORS" Can Restore It To
 Original Screening Quality With Amazing
 R & R Treatments:
RAPIDWELD: restores damaged originals of
 negatives and prints
RAPIDTREAT: completely protects and pro-
 longes the life of new prints
 Rapid Film Technique, Inc., 37-02 27 St.,
 Long Island City 1, N.Y. STIlwell 6-4600

M. RETTINGER
 Consultant on Acoustics
 Analysis, Room Design, Noise Reduction
 5007 Haskell Ave., Encino, Calif.
 Tel: 213-784-3985

**RESEARCH, DESIGN AND
 DEVELOPMENT OF EQUIPMENT
 FOR THE PHOTO INDUSTRY**
 Complete Line of Animation, Filmstrip and
 Special Effects Equipment
RICHMARK CAMERA SERVICE, INC
 516 Timpon Pl. Bronx, N.Y. 10455
 LU 5-0730 LU 5-5995

**FILM PRODUCTION EQUIP.
 RENT • LEASE • SERVICE**
 World's largest source of equipment for pro-
 ducing, processing, recording, editing, etc.
S.O.S. PHOTO-CINE-OPTICS, Inc.
 New York City: 387 Park Ave. S., 212, MU 9-8180
 Hollywood, Calif.: 6331 Hollywood Blvd., 407-2124

Quality and Service for the 16MM Movie
 Producer. Send for Brochure. Daily
 Processing of all Ektachrome Films*
 Licensed by Eastman Kodak
 "Triad" Color Printing—Scene-to-Scene
 Color Correction
SOUTHWEST FILM LAB., INC.
 3024 Ft. Worth Ave.—Dallas, Texas 75211
 A/C 214 FE 1-8347

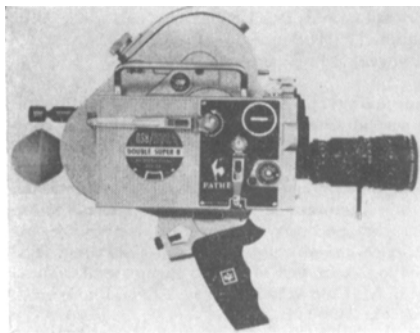
STANCIL-HOFFMAN CORP.
 • **MAGNETIC FILM RECORDERS**, S7 16,
 17½ & 35MM, All Plug-In Transistor Elec-
 tronics
 • **TAPE 1/4" FOR MONO, STEREO & SYNC**
PULSE R70
 • **BROADCAST LOGGING, 24 HOURS**
CONTINUOUS 7" REELS UP TO 4 CHAN-
NELS
 921 N. Highland Ave., Hollywood, Calif. 90038

PROJECTION SCREENS
 Professional, Seamless, Front & Rear Projection
 Consulting service custom sizes for theatres,
 TV & MF studios, viewing rooms. Rigid
 rear projection for plotting and display.
 New "Porta-Pro" portables.
STEWART FILMSCREEN CORP.
 Formerly Stewart-Trans-Lux Corp.
 1161 W. Sepulveda, Torrance, Calif. 90503
 Phone 326-1422 (213)

AURICON & K-100 CONVERSIONS
 to 400 & 1200 ft.
 Filter slot Auricons & Films
 Transistor amplifiers, processors, etc
 Write for details
GORDON YODER
 Professional Cine Products
 4025 Maple Ave., Dallas, Texas 75219

announced by Century Projector Corp., 729 Seventh Ave., New York, N.Y. 10019. The new system is based on a newly developed photosensitive field effect transistor sound pickup called PFET which was developed mainly for NASA for use with space satellites. Initial tests of the PFET photo pickup indicated an SNR of about 90 dB the announcement stated. The new photo pickup employs silicon photosensitive materials in combination with controlled amplification called field effect.

A new microphone mixer called Model M68 has been announced by Shure Brothers, Inc., 222 Hartrey Ave., Evanston, Ill. 60204. The mixer has inputs to accommodate up to four dynamic or ribbon microphones. The microphones may be either high- or low-impedance. In addition to the four microphone inputs, one auxiliary high-level input is provided to accept a tape recorder or AM-FM tuner signal. When used in conjunction with a Shure A68 Phono-Pre-Amp accessory, it also accepts a magnetic or ceramic phonograph signal. The mixer has two outputs, one a high- or low-impedance output for connection to the microphone input of a public address system amplifier or tape recorder and the other is a high-impedance, high-level output designed primarily to feed a power amplifier or tape recorder requiring 0.5 to 2 V. Each of the four microphone inputs has its own volume control. An auxiliary input volume control is provided to control the sound level of a tape recorder, phonograph or tuner or to cut it out entirely. A master volume control is provided to adjust simultaneously the volume of all five input sources. The M68 is priced at \$125.



A double super 8 camera called the Radiant-Pathe Professional DS8/BTL has been announced by the Pathe Division of Radiant Manufacturing Corp., 8220 Austin Ave., Morton Grove, Ill. 60053. The camera is described as a rugged automatic that features a behind-the-lens automatic exposure readout system, reflex viewing with interchangeable C-mount lenses, a precision film gate for accurate registration, accessory electric motor drive and an accessory magazine for 800 ft of filming. The DS8-BTL with Angenieux zoom 8-64 f/1.9 lens is priced at \$920.00; the DS8-AT with 15mm Angenieux f/1.3 lens, at \$714.00. Many accessories are available.

Two new portable, battery-operated ColorTran lights have been announced by the Motion Picture & Television Div., Berkey Technical Corp., 1015 Chestnut St., Burbank, Calif. Both models use a 30-V ColorTran 250-W quartz-iodine lamp op-

erating at 3,400 K. The heat-protected handle incorporates an On-Off switch and the handle base has a 1/4-20 threaded bushing for mounting on cameras and stands where desired. The Multi-Beam "30" (LQF-3) is designed to provide full focusing from spot to flood with fingertip control. It is said to produce a maximum of 220 fc at 10-ft distance in spot focus and 56 fc in full flood focus. The unit weighs 2 lb 10 oz, including its 6-ft cable. The Quartz-King "30" (LQK-3) is designed as medium flood with fixed focus. It weighs 1 lb 12 oz including cable and produces a maximum of 160 fc at a 10-ft distance. The Multi-Beam "30" is priced at \$92.50 and the Quartz-King "30" is priced at \$59.50. A 30-V portable battery pack is available at a price of \$415.

Among the thousands of products exhibited at the 1966 Photokina in Cologne were a number of motion-picture equipments exhibited by German firms. Among the firms exhibiting and among their products were: Agfa-Gevaert, two super-8 cine cameras, the Movex SV Automatic and the Movexoom S, and the Sonnector S-8 Super magnetic sound film projector; Rodenstock Optical Works, a series of ultra-fast lenses for x-ray screen photography with the necessary corrections for the unusual nature of the screen image; Jos. Schneider & Co., lenses for 16mm and 35mm cameras and for television; Jena-Er Glaswerk Schott & Gen., various equipments in the field of fiber optics; Carl Zeiss, numerous types of

lenses; Zeiss Ikon AG, Moviflex-S 8, super 8 movie camera and S 8 projector.

A mobile aluminum antenna tower has been developed by Andrews Towers, Inc., 1420 Layton Ave., Fort Worth, Tex., for use in the transmitting of television or radio beams and for military communications in the field. The tower is transported by a tractor-trailer of which it is a part. It can be raised to a maximum height of 300 ft and can be operated at frequencies up to 12 GHz. The tower can be erected in sections permitting 4-man operating crews to lift only one section at a time. Tower sections have bellcrank, self-latching catches designed to engage on raising and to disengage automatically when the tower is lowered. The trailer-tower unit is completely self-contained and carries its own power-generator unit on the trailer.

Membership Certificates (all grades). Attractive parchment certificates suitable for framing for display in offices or homes, may be obtained by writing to Society headquarters, 9 East 41st St., New York, N.Y. 10017. Price \$1.00.

SPROCKETS by
LaVezzi

Whether your tapes, charts, or films have round or rectangular perforations, the ideal source for driving sprockets is LaVezzi—specialists in this unique product since 1908. Every tooth perfectly formed, precisely sized and completely burr-free. Your inquiries and quote requests are most welcome.

Brochure upon request.

LaVezzi
MACHINE WORKS

4635 W. LAKE ST.—CHICAGO 44, ILL.
PHONE—Area 312—ES 8-1636