

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.

Erratum: New Products, Oct. 1960, p. 780 — A new high-vacuum tube, type WX-4047, Westinghouse Electric Corp., Electronic Tube Div. Line 6 refers to the tube as "the Astracon image amplifier." This is incorrect. The Astracon is (as also stated in the item) the subject of a paper, "The Astracon Tube and Its Application to High-Speed Photography," by A. E. Anderson and G. W. Goetze, which was presented at the 5th International Congress on High-Speed Photography, but the Astracon and the WX-4047 are two different tubes. Both tubes were recently developed by the Electron Tube Division of Westinghouse Electric Corp. Except for the misnomer in Line 6, and the reference to the 5th Congress paper, the item describes the WX-4047.

Tiros II, the successor to the weather-watching satellite, **Tiros I** (*Jour*, pp. 272-273, Apr. 1960), has been designed to incorporate a new orientation-control system and newly-developed infrared instruments to measure the emission and reflection of solar heat by the Earth and its atmosphere. These improvements were developed following study of the behavior of **Tiros I**. Both satellites were developed by the Astro-Electronics Div. of the Radio Corp. of America for the National Aeronautics and Space Administration.

Behavior of the busy little **Tiros I**, faithfully sending cloud pictures (nearly 23,000 of them) to Earth during its three months life in Space, varied in certain significant ways from that predicted for it when it was first tossed into Space. Most noticeable mannerism was its tilt as it gradually leaned away from the predicted position of its axis. This phenomenon was found to occur under the influence of the magnetic field surrounding the Earth.

In **Tiros II** the magnetic forces are harnessed by generating a controllable

magnetic field around the satellite by a coil of wires circling it. Interacting with the Earth's magnetic field, this device may be compared to an invisible hand which observers on the ground can use to tilt the satellite in the right direction to achieve a more advantageous angle for the sensors and the solar power supply. The infrared package, developed by NASA, includes a five-channel detector to measure selected portions of the infrared spectrum around the Earth. **Tiros II** weighs only 280 lb. Associated with the cameras are two specially-designed RCA tape recorders to store the TV pictures until the "readout" command is given from a ground station.

An underwater vehicle equipped with four TV cameras has been given the nickname of RUM, a designation which carries no implication of liquid spirits but is short for "remote underwater vehicle." The vehicle, constructed by the Office of Naval Research, was developed by the University of California's Marine Physical Laboratory of the Scripps Institution of Oceanography. Crawling along the ocean's floor at a rate of three miles an hour at depths down to 20,000 ft, RUM is equipped with a mechanical arm ending in a monstrous claw that can clutch and raise marine specimens weighing as much as 1500 lb. The "eyes" of this man-made monster — which can remain submerged for months — are four vidicons (RCA-7038, 6 1/4 in. long and 1 in. in diameter) and associated camera equipment.

The cameras are housed in a steel case constructed to withstand the terrible pressure at the bottom of the sea. Mercury vapor lamps, also enclosed in pressure cases, illuminate the dark underwater scenes for a distance of about 30 ft. Signals from the cameras, designed by Orbitram Co., of Lakeside, Calif., are relayed to a monitoring and control station on land via a five-mile length of lightweight coaxial cable. Each camera is equipped with two remotely-controlled motors for adjustment of iris and focus.

Reports from Eastman Kodak Co. on new translating machines indicate that the astonishing storage potential of contemporary photographic techniques has extended almost beyond imaginable limits the possibilities of translating machines in terms of speed and accuracy. A machine currently in use by the Air Force translates from Russian to English at the rate of 40 words per minute, using special glass discs coated by Eastman Kodak with high-resolution photographic emulsion. A 55,000-word vocabulary is stored in a 3/8-in. channel printed on a 10-in. glass disc, but modifications of the machine will permit it to translate more than 2400 words per minute from a vocabulary of about 500,000 words stored on the disc. Even the half-million-word vocabulary barely scratches the surface of photography's information storage capacity, according to Kodak scientists. In translating, the storage channel is scanned vertically and horizontally by electronics until

Membership Certificates (Active and Associate members only). Attractive hand-engrossed certificates, suitable for framing for display in offices or homes, may be obtained by writing to Society headquarters, at 55 West 42d St., New York 36, Price: \$2.50.

Off-The-Shelf Delivery!
**IMAGE-ORTHICON,
VIDICON LENSES**

Rent or Buy Image Orthicon Lenses
from World's Greatest Selection . . . choose from 28mm focal length to 60" . . . delivered right "Off-The-Shelf" at B & J World's Lens Headquarters!

Here you'll find the lens you need for practically ALL T.V. Cameras, R.C.A. (TK-41, TK-11): G. E. Black and white or color; Du Mont, etc.! Rely on the Industry's Prime Optics-Source . . . Pioneers in T.V. Optics Since 1936 and currently serving such stations as WGN, WNBQ, ETC.

Our Instrument Shops and "Know-how" offer you Special Mountings, Calibration and Custom Fittings! (Also Cine & Slide Equipment for your News Dept.!)
Write for New T.V. Optics Catalog.

BURKE & JAMES, INC. 321 S. Wabash, Chicago 4. Ill.

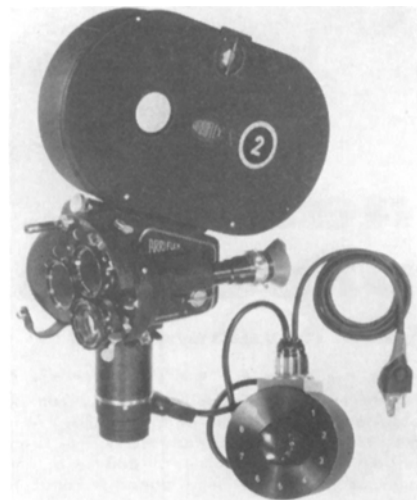
the machine matches a Russian word — fed in with punched tape — to its English equivalent, which is then printed automatically on a typewriter.

It has also been stated by Kodak research personnel that a high-resolution film, exposed with present optics, is capable of storing 600 million bits of information per square inch. For example, the entire contents of the *Encyclopedia Britannica* could be stored on a piece of film only four inches square.

A video band recorder/reproducer, an addition to 3-M's CM-100 series, has been introduced by Minicom Division, Minnesota Mining and Manufacturing Co., 2049 S. Barrington Ave., Los Angeles 25, Calif. Designated the CM-114, it records and reproduces 14 tracks of both analog and pulse signals on 1-in. magnetic tape. Frequency response on each track is 400 cycles to 1.0 mc at 120 in./sec. The machine has a selection of six tape speeds ranging from 7½ to 120 in./sec and features higher frequency response at lower tape speeds. It is designed to incorporate both a receiver and a scope if desired for pre-detection recording as a possible application. This type of recording may be used in missile operations where a flight is simulated by feeding the original data back to the receiver in the missile, and a checkout criterion provided for a recording ground station.

A video recording system available with either 16mm or 35mm camera for synchronized sound recording on film or magnetic tape is described in a 4-page illustrated brochure available upon request from GPL Division, General Precision, Inc., 63 Bedford Rd., Pleasantville, N.Y. Described as producing "professional quality interlaced film," it is recommended by the manufacturer for production on 16mm films for advertising agency previews, client or sponsor presentation and classroom projection. New features of the system are spot wobble, to provide smoother picture texture, and an alternate synchronizing generator to minimize synchronization irregularity of signals from varying sources.

A new model of the Arriflex 35, designed especially for instrumentation and documentation uses, has been announced by Arriflex Corp. of America, 257 Park Ave. South, New York 10. Designated the Arriflex 35-IIB-S, the camera is equipped with a balanced movement and a 32-v d-c motor for operation to 80 frames/sec. The motor is equipped with an external rheostat for speed control, with a circuit designed to maintain high torque at lower speeds. Equipment includes a tachometer calibrated to 80 frames/sec. The camera is priced at \$1995 with special motor and speed control, but without lenses and magazines.



Arriflex has also announced a transistorized, governor-controlled motor for the Arriflex 35 designed so that only a relatively small current passes across the centrifugal switch of the governor mechanism, the heavy main current being controlled by the transistor. Designated the 9A773-T, it is priced at \$190. A new 24-28-v d-c Variable Speed Motor, 9A744, is designed to drive the Arriflex 35 at frame rates ranging from 12 to 36 frames/sec. Priced at \$160, it is expected to be useful in military and industrial applications.

Complete 16mm Laboratory

FAST QUALITY SERVICE

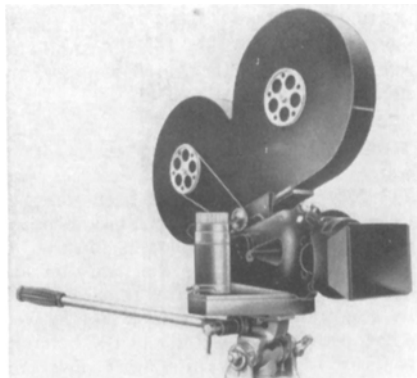
Negative or Reversal Processing
 Color Duplicating
 Black-and-White Duplicating
 Editing
 Sound Recording
 Titling
 Animation

Write for Price Schedules



Pan-American Films

735 POYDRAS STREET, NEW ORLEANS, LA., JACKSON 2-5364

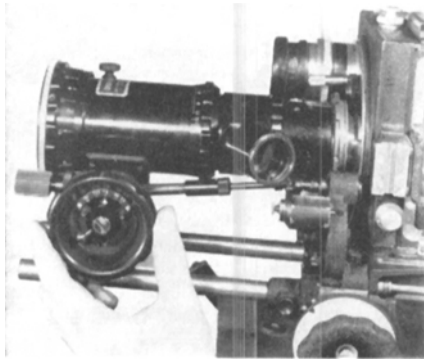


The CECO Vari Speed Motor Base, No. 75400, for the Arriflex 35 mm Vari Speed Motor is a product of Camera Equipment Co., 315 W. 43 St., New York 36. The new motor base is designed to locate the motor in an upright position adjacent to the camera, this permitting base mounting without the use of a Hi-Hat. This arrangement is planned to lower the center of gravity by bringing the camera closer to the tilt pivot point of the tripod, thus creating a favorable condition for steadier tilting performance. The motor base is priced at \$300.

The backward curving field of the new Super-Farron Lens enables their use as flat-to-flat, flat-to-convex or convex-to-convex imaging systems. Used in this manner the system is said to have an effective efficiency of T/0.5. The lens is produced by Farrand Optical Co., Bronx Blvd. & E. 238 St., New York 70. The abbreviated story in the June 1960 *Journal* (p. 460) illustrated a 1:1 relay system

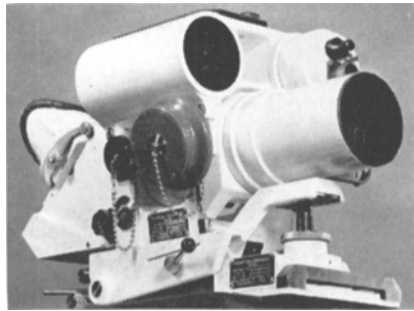
comprising two of the lenses imaging a flat field to a backward curving field.

A **miniaturized wide-angle lens** with a 180° field of view, called the Traid 735 Periphoto, has been designed and manufactured by Pacific Optical Co. for Traid Corp., 17136 Ventura Blvd., Encino, Calif., especially for use in drone scoring systems. The lens measures 1 1/4 in. and weighs 5 1/2 oz. Other specifications include equivalent focal length, 6.51mm; relative aperture, f/6.3, fixed; flange focus distance, 1.500 in.; 180° field of view; resolution of 80 lines/mm on axis; color corrected for Daylight Kodachrome; fixed focus, 60 in. to infinity; 67% distortion at 75°, 23% at 45°; round image, 0.720 in. in diameter. The lens is priced at \$885.



A **38-154 Zoom Lens Attachment**, designed to support the weight of the lens, has been announced by Camera Service Center, 333 W. 52 St., New York 19. Features include two knob controls to adjust the North-South, East-West movement of the lens, thus accomplishing accurate line-up of the crossline in the lens reticle with the crossline in the camera. A large knob controls the zoom action to increase zoom smoothness. This knob contains a built-in focal length stop and lock-off to permit the operator to select the desired amount of zoom. A driveshaft to simplify follow-focus runs from the camera control to the follow-focus gear located on the front of the lens. The attachment is priced at \$480. (In addition to the manufacture of special motion-picture equipment, this firm has recently enlarged its rental facilities and added a sales department.)

A **high-speed stereo-camera and projection system** is being designed by Benson-Lehner Corp. for the Naval Weapons Laboratory, Dahlgren, Va., under an \$83,000 contract. Delivery is scheduled for March, 1961. Combining high-speed photography with stereo photography, the new camera is designed for speeds of more than 12,000 frames/sec, arriving at full sync speed within 100 ft of film. Also provided is a means for varying the interaxial distance between the taking lens, so that the degree of stereo desired can be selected for the distance of a given subject. Interaxial baseline can be varied from 13 in. to 4 ft, providing stereo from 15 ft to infinity. Providing a three-dimensional record, the new system is expected to have important applications in many areas of research.



A **Sighting Telescope, Model WS-10**, with Mounting Compound and Acquisition Aid has been announced by Wollensak Optical Co., Rochester, N.Y. The telescope, a monocular refracting-type, employs interchangeable eyepieces of 10-power or 20-power which mount at a 45° angle to the main objective axis. The Acquisition Aid is designed to provide visual superposition of the area under surveillance with a radarscope display. A cushioned headrest is provided for the proper head position of the operator relative to the eyepiece. Hinged port covers at the sides of the headrest open to expose the diopter scale of the eyepiece for focusing. A replaceable reticle is provided with variable-intensity illuminations for night operation. The telescope is designed for use under extreme climatic conditions while withstanding the effect of vibrations created by power-driven tracking mounts. The body of the telescope is sealed against

moisture and is provided with a chamber for the mounting of two silica gel desiccant cartridges of the screw-in type. The exterior is finished in white enamel to minimize the rise of internal temperature in direct sunlight. The telescope is presently being supplied to the Armed Forces and missile manufacturers for tracking objects in flight, boresighting, industrial aligning and measuring.

A **line of time-resolved spectrographs** is undergoing advanced prototype testing in the Instrument Division, Beckman & Whitley, Inc., 993 E. San Carlos Ave., San Carlos, Calif. The instruments are expected to permit temperature measurements in the 2000—20,000-K region, of events resolved in time up to 3×10^{-8} sec, and with wavelength distribution through the 2000—9000-A range. Photographic recording could be made of events in these classes by coupling a Beckman & Whitley sweeping-image camera to one of the spectrograph instruments. These spectrographs are expected to be primarily useful in the measurement and analysis of high-speed radiated transients, in work on the composition of molecular species, or in the investigation of concentration temperatures.

Automated and miniaturized motion-picture projection equipment has been developed by Reevesound Co., a subsidiary of Reeves Soundcraft Corp., for Inflight

Bolsey can solve your problems
of engineering in optics,
weight, space and cost . . . by the use of

frenelens

(PLASTIC FRESNEL LENSES)

POSITIVE AND NEGATIVE FRESNEL LENSES
in a variety of FOCAL LENGTHS
SHAPES
THICKNESSES
FORMULATIONS

Focal lengths from 0.8" to 60"
in a variety of sizes

Also available . . .
Frenelens PROJECTION SCREENS
for full daylight or dark room
rear projection

Frenelens LIGHT DIFFUSERS
for lighting fixtures

both of very high efficiency

Bolsey Research and Development
DIVISION OF BOLSEY CORP. OF AMERICA
11 WEST 57th STREET • NEW YORK 19, N. Y. • Eldorado 5-4980

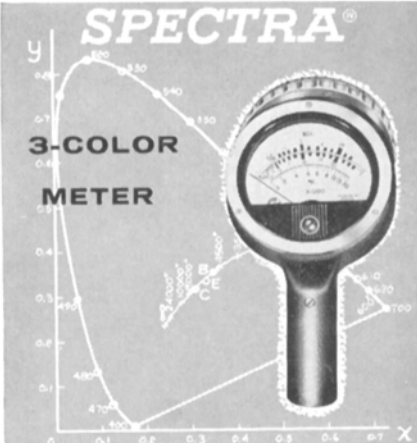


The ONLY Professional Meter...
measures
ILLUMINATION, CONTRAST and BRIGHTNESS!

SPECTRA
HAND CALIBRATED FOR ABSOLUTE ACCURACY...

When thousands of dollars of narrow-latitude color film is shot, exposure must be "on the button." No wonder, therefore, that Hollywood's top cameramen and lighting technicians rely exclusively on SPECTRA! For this is the only meter in the world employing bench-matched components, with individually calibrated direct reading slides for every ASA film rating, present or future! Directly shows "f" stop, and foot candles, as well as brightness and contrast, even in unusually low light levels. If you're serious about photography, there is only SPECTRA! Complete with 14 slides, grid, disc, handsome fitted case. . . . \$97.50

Distrib. by Scopas, Inc., N.Y. 16, N.Y.
PHOTO RESEARCH CORP.
837 No. Cahuenga Blvd., Hollywood 38, Calif.



SPECTRA®
3-COLOR METER

The ONLY meter that measures all light sources, including DAYLIGHT, accurately!

SPECTRA 3-color meter measures the proportionate amounts of all three primary colors present in the light source and indicates the filters necessary for positive color correction in Spectra Index Units. ($^{\circ}$ Kelvin conversion table supplied)



Write for descriptive literature and complete specifications.

PHOTO RESEARCH CORP.

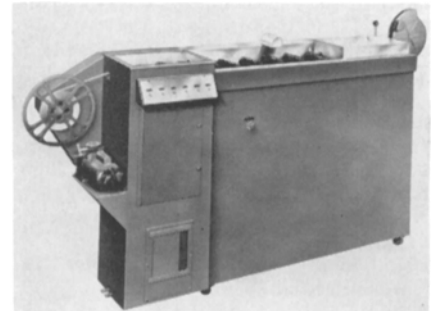
Karl Freund, A.S.C., President
837 NO. CAHUENGA BLVD.
HOLLYWOOD 38, CALIFORNIA

Motion Pictures, Inc., of New York, for showing previews of feature films on transcontinental flights. The idea is being tested by Trans-World Airlines. The projection equipment is said to be capable of showing up to 135 minutes of 16mm film from a single reel.

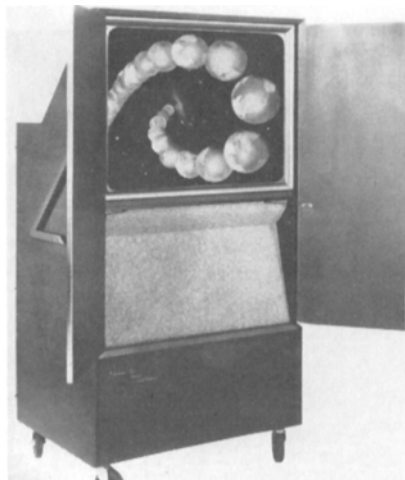
The Protect-O-Film processing machine for cleaning and applying antistatic protective coating to 16mm motion-picture film is a product of Harwald Co., 1245 Chicago Ave., Evanston, Ill. The firm has also announced new features on the Inspect-O-Film Model "U" machine. The processing machine treats the film by applying a cleaning-processing fluid by means of tapes moving in the direction opposite to that of the film. The fluid flow is electronically controlled. The machine is priced at \$995. The Model "U" is used in the inspection, editing and cleaning of film. It has been improved by a new speed control and braking system, involving three motors controlled by direct current.

A method of identifying and sealing strips for developed 16mm film, developed by Geoffrey H. Botton, Manager of Machine Accounting, General Film Laboratories, Hollywood, eliminates the necessity for handwritten identification. With the new system, the firm's Order Department uses a "Request for Labels" form, showing title, quantity, etc., which is sent to the Machine

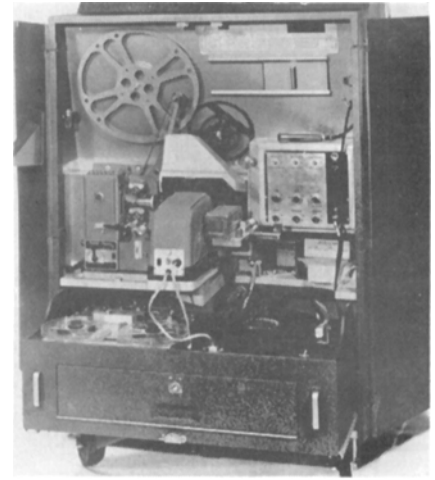
Accounting Department. Here the cards are punched, and pin-fed, pressure-sensitive labels are imprinted on the IBM 407. The film reel label is then applied to the leader strip and the film is sealed until ready for projection.



The Allen 16mm Reversal Processor Model 700 is manufactured by Allen Products Inc. and distributed by S.O.S. Cinema Supply Corp., 602 W. 52 St., New York 19. The newly announced machine is designed for processing 16mm reversal film and is convertible for negative or positive. Features include daylight loading of 1200-ft reels, variable-speed drive, bottom tank drains and plumbing with back-flushing system, refrigeration and recirculation. The film passes through nine tanks and drybox, all positions in-line, at speeds up to 20 ft/min. The machine is priced at \$2995.



The Bi-Fi, a rear-projection console housing several equipments that can be operated individually or in combination, has been announced by Friddel Manufacturing Co., P.O. Box 721, Galveston, Tex. Designed for educational and industrial uses, it features a single control panel for "fool-proof" operation, and a 36-in. TV screen. Contained in the console are: the "Exhibitor" (No. 600) equipped with a 16mm projector for a conventional or for a six-minute continuous repeat program. It also incorporates a preamplifier and tape deck, with a programmer built into the amplifier for adding impulse to tape along with audio for the 40-slide repeater projector (45-w); the "Workhorse" (No. 100) with a 16 mm projector, 35mm filmstrip projector, 26-slide changer with automatic or remote control (25-w);



the "Audio-Visual Center" (No. 500), equipped with 16mm projector, 35mm filmstrip projector, 36-slide changer (automatic or remote), turntable, preamplifier and tape deck, microphone and programmer (25-w); and the "Linguist" (No. 601) for teaching languages, equipped with projector for 35mm filmstrips and for 2 by 2-in. slides, automatic or remote control, preamplifier and tape deck, four-speed turntable, microphone and programmer (12-w). An Induction Wireless Receiver (No. 700) may be used in a classroom at the students' desks for the reception of audio. The receiver is equipped with amplifier and microphone. The console is 60 in. high, 25½ in. deep, and 32¾ in wide. It operates on 110-120 v, 60 cycles a-c.