

CinemaScope

- Level Balance Test Film
- Multifrequency Test Reel
- Loudspeaker Balance Reel
- Stereophonic Test Reel
- Flutter Test Film
- Loudspeaker Phasing Test Film
- Constant Level Test Film
- Channel-Four Test Film
- Projector Alignment Chart
- Projector Alignment Chart (Optical Track) Standard Sprocket Holes

Visual 35mm — Picture Only

- Focus-and-Alignment Section
- Travel-Ghost Target Section
- Jump-and-Weave Target Section

Magnetic — 16mm Sound Only

- Azimuth Alignment Test Film
- Multifrequency Test Film
- 400-Cycle Signal-Level Test Film
- 300-Cycle Flutter Test Film

Picture and Sound — 16mm

- 3000-Cycle Flutter Test Film
- Multifrequency Test Film
- Scanning-Beam Illumination Test Film
- Buzz-Track Test Film
- Sound-Focusing Test Film
- 400-Cycle Signal-Level Test Film

Picture Only — 16mm

- Registration Test Film
- Travel-Ghost Test Film

Glass Slide — 16mm

- Projector Lens Resolution Target



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.

New Photographic Process

Kalvar, a new process which works by photographic production of light-scattering centers in its surface structure rather than light-absorbing grains as in conventional systems, eliminates all chemicals and hastens the drying time normally required for development, fixation and washing and drying. The process has been developed by Kalvar Corporation, 909 South Broad Street, New Orleans, La. Shelf-life in storage and image permanence are reported superior to conventional photo-

graphic materials. Sensitivity may be measured to permit handling of film and paper in daylight, an important advantage in copying applications. Of great importance is the fact that these films and papers are not sensitive to ionizing radiation. In the event of atomic attack or bomb test fall-out, this photographic system could operate.

Basic elements of the process are Kalvar photographic films and papers which, like conventional processes, have either wide gray scale and tonal range for continuous tone pictures, or high contrast for line-copy or half-tone pictures.

In all photographic applications where high light sensitivity is not prerequisite, Kalvar photographic materials may be used. Outstanding Kalvar applications include copies of original photographs made by conventional processes, microfilm copies, copies of kinescope and motion-picture film, original microfilm records, photographic enlargements, originals and copies of oscillograph records and as the film intermediate between original copy and photo-engravings of lithographic printing plates.

The unique nature of the process requires specialized equipment, much of it now reported as available. This equipment includes microfilm enlargers, microfilm cameras, roll-to-roll printers for microfilm, motion-picture and kinescope film, engineering drawing printers, and devices to copy Navy and Air Force aerial reconnaissance photographs.

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Supermendur

A new magnetic alloy developed at Bell Telephone Laboratories will permit reductions in the size of magnetic components without any sacrifice in performance, and will facilitate the design of new components having greatly improved performance characteristics.

The composition of the alloy, called Supermendur, nominally 49% iron, 49% cobalt and 2% vanadium, is similar to 2V-Permendur, a magnetic alloy developed at Bell Laboratories many years ago. H. L. B. Gould and D. H. Wenny, however, have improved the characteristics so that the hysteresis losses have been reduced by a factor of 10 and maximum permeability is now 66,000 at 20,000 gauss. Remanence is 21,500 gauss; coercive force is 0.26 oersted; and saturation is 24,000 gauss. Core losses are under 6 w/lb at 400 c at a flux density of 100,000 lines/sq in. The hysteresis loop is rectangular with a flux swing of 45,500 gauss from minus remanence to plus saturation.

By using commercial materials of the highest purity, melting in a controlled-atmosphere furnace, and subjecting the resulting alloy to a prescribed schedule of rolling and heat treatment in a magnetic field, Messrs. Gould and Wenny have obtained a material so malleable that it can be cold-rolled from 0.090 in. to 0.0003 in. without intermediate anneals and without losing ductility. Power transformer cores of 0.004 in. or 0.002 in. Supermendur tape can provide an output more

than 30% greater than comparable grain-oriented silicon steel cores, the best previously available material. Advantages on an ampere-turn excitation basis achieve even greater percentages. This permits a reduction in core size and weight of at least 30% for the same output, a significant factor in many applications. Flux density can exceed 140,000 lines/sq in. without excessive losses.

Characteristics of this material made it suitable for power transformers, pulse transformers and magnetic amplifiers. The precipitous sides of the hysteresis loop indicate that the gain of a magnetic amplifier can be increased as much as 80% over that obtainable with grain-oriented silicon steel. Other possible applications include telephone-receiver diaphragms, and switching and memory devices. The material is especially useful where miniaturization is desired, or where high-temperature operation is contemplated.

Western Electric Co., Inc., does not plan to produce Supermendur for commercial consumption. A number of companies, however, have expressed an interest in the material and it probably will be manufactured under Western Electric license in the near future.

Mass Production of Transistors

"A new technique for the mass production of high-speed and ultra-high-frequency transistors," the *Journal of the Franklin Institute* says in its November 1956 issue, "...represents a major advance in semi-

conductor technology. Two new types of transistors, a Micro-Alloy Transistor (MAT) and a Surface-Barrier Diffused Transistor (SBDT), the direct result of this technique, are now in engineering development.

"Developed at Philco's Research Laboratories," the item continues, "in cooperation with the Navy, Army Signal Corps and the Air Force, the new devices will be produced by the Lansdale Tube Co., a division of Philco, at its new semiconductor plant at Spring City, Pa. The MAT and SBDT may be used in electronic 'brains,' guided missiles, communications, radar, and other military equipments.

"The MAT and SBDT devices are fabricated from the element germanium and utilize Philco's unique Surface Barrier technique. This process, now highly mechanized, permits the mass production of transistors requiring precision control of critical dimensions. It avoids the necessity of manually assembling the germanium and the electrode material and alloying them in a furnace.

"Primarily designed for high-speed electronic computers, the MAT employs a new Philco 'microalloying process' which uses doped semiconductor layers only a few millionths of an inch thick. In conventional alloying, the doped layer must be made relatively thick, and due to the basic nature of the alloying process, is difficult to control. The new device is reported to be at least ten times faster than the fastest vacuum tube in electronic computers.

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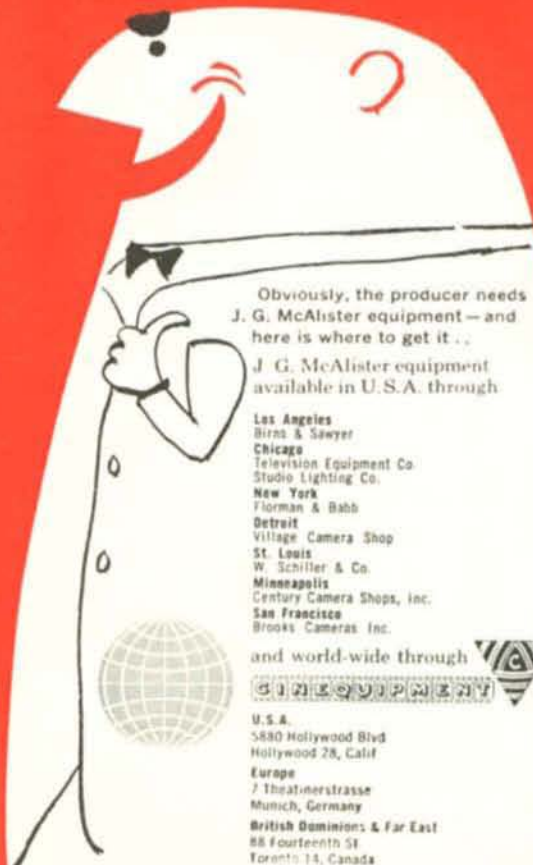
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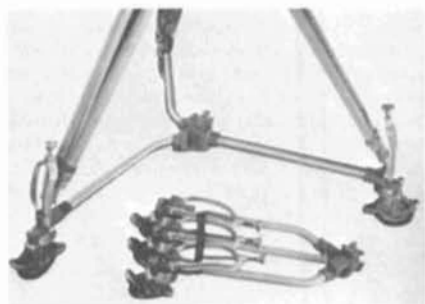
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"The other new device, the SBDT, will operate in the ultra-high-frequency range of 500 megacycles. It will find its widest use in the 20 to 200 megacycle range. This transistor, which also utilizes Philco's electrochemical and microalloying techniques, permits the effective use of what is known as 'surface diffusion.' In this particular process, the tiny germanium transistor blanks are subjected to a very carefully controlled 'atmosphere' at high temperatures. This atmosphere contains particles of metal in gaseous form. When properly controlled, atoms of the metal penetrate the surface of the germanium by diffusion. The SBDT technique, using highly mechanized precision etchings, results in transistors having Alpha cutoff frequencies above 600 megacycles.

"The new MAT and SBDT semiconductors will join a group of Philco transistors that runs the gamut from milliwatt hearing aid amplifiers to 10 watt power units, in addition to 40 to 80 megacycle Surface Barrier Transistors used in computers, communications and military equipments."



This three-wheel collapsible dolly has also been designed in very light weight and introduced by the Camera Equipment Co., 315 W. 43 St., New York 36. There are two models: the Junior, which weighs 15½ lb; and the Senior, 18 lb. They fold into compact shapes for ease in carrying. Designed for use with any professional or semiprofessional tripod, they are made of high tensile-strength aluminum castings, with chrome-plated tubing, ball bearings and locking rubber-tired casters. The dimensions are: Junior — over-all collapsed size, 8½ in. × 12 in. × 27½ in.; distance between tripod receptacles, open position, 34½ in.; tube diameter, 1 in.; wheel diameter, 4 in.; Senior — over-all collapsed size, 9½ × 11½ × 29½ in.; distance between tripod receptacles, open position, 39 in.; tube diameter, 1½ in.; wheel diameter, 5 in.

Price of the Junior dolly is \$99.50; the Senior is \$150.00

Ampex Corp., Redwood City, Calif., has announced plans for a subsidiary company, Ampex Audio, Inc., which will be located in Sunnyvale, Calif. Beginning about July 1, the new firm will occupy a 40,000 sq ft building. The office will occupy 8000 sq ft and 32,000 sq ft will be occupied by the manufacturing plant. President of the new firm will be Phillip L. Gundy. He is now a Vice-President of the parent corporation and has been serving as Manager of the Audio Division.

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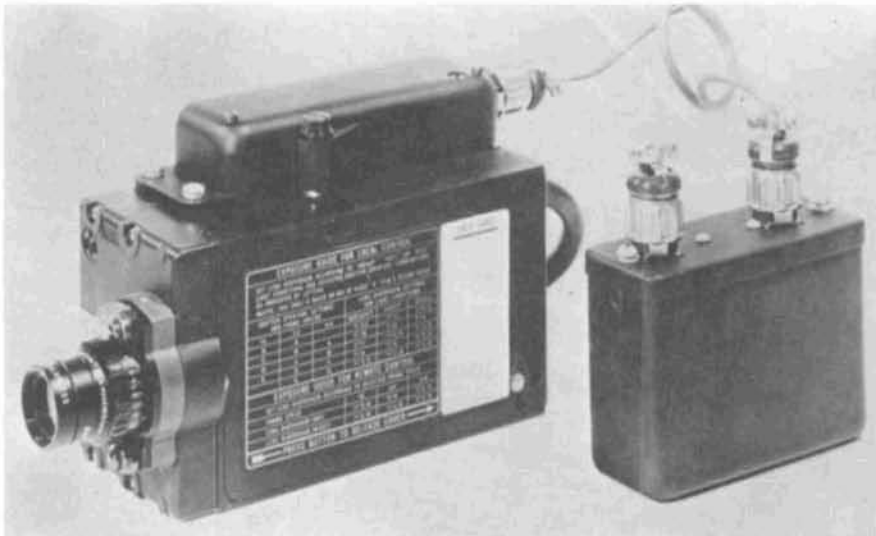
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The Traid TN-9 has been made by modifications and adaptations on the standard GSAP Bell & Howell N-9 camera. Basic designs incorporated are Traid TN-9, standard instrumentation design; Traid TN-9A, automatic exposure control design; and Traid TN-9B, pulse-operated interval design. Optional features include automatic exposure control; strip or "streak" operation; conversion to slow speeds of 12, 24 and 48 frames/sec; conversion to a single high speed of 100 frames/sec; conversion for use under loads to 100 g; con-

version for use in scope recording; and a timing system, event timer, viewfinder and correlation-output pulse installation. Available accessories include: full range of C and GSAP mount lenses; 100-ft and 50-ft magazines; special camera mounts; bore-sights; remote controls; and color film as well as black-and-white. A fully detailed and illustrated 8-page brochure describing the features of the Traid TN-9 will be mailed on request by the Traid Corp., 17136 Ventura Blvd., Encino, Calif.



A self-contained, portable photometer, incorporating a highly regulated power supply, is a product of the El Dorado Electronics Co., 1401 Middle Harbor Rd., Oakland 20, Calif. Known as the PH-200 Universal Photomultiplier Photometer, it is reported to be able to use any commercially available photomultiplier or photoelectric tube. Separate zero and dark-current adjustments as well as both decade and continuously variable sensitivity controls increase its flexibility. The instrument is supplied complete and ready for use with tube base, tube holder, interconnecting cables and one Type 931-A Photomultiplier Tube. Dimensions are 10 in. high, 7½ in. wide, and 9 in. deep. It weighs 12 lb.

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SMPTE now has available 35mm and 16mm color television test films and slides designed for TV station use under specifications set up by the SMPTE Television Committee—representing the quality of color material obtainable from Ansco, Technicolor and Eastman prints.

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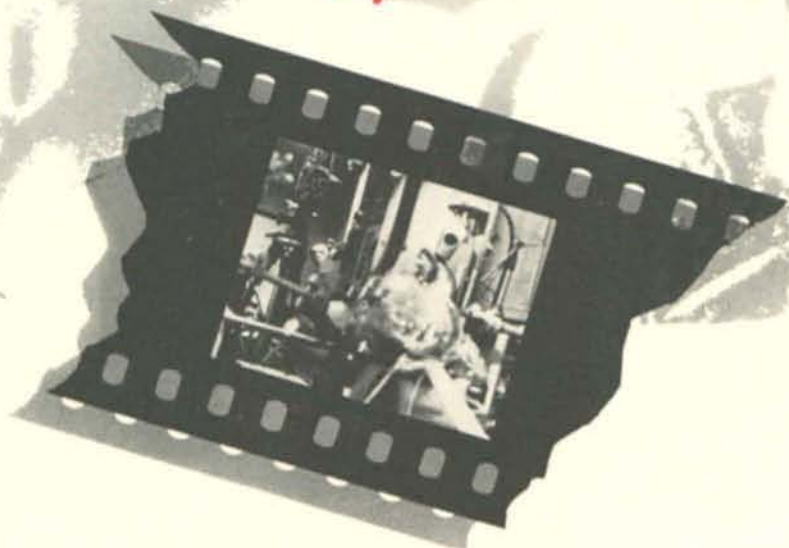
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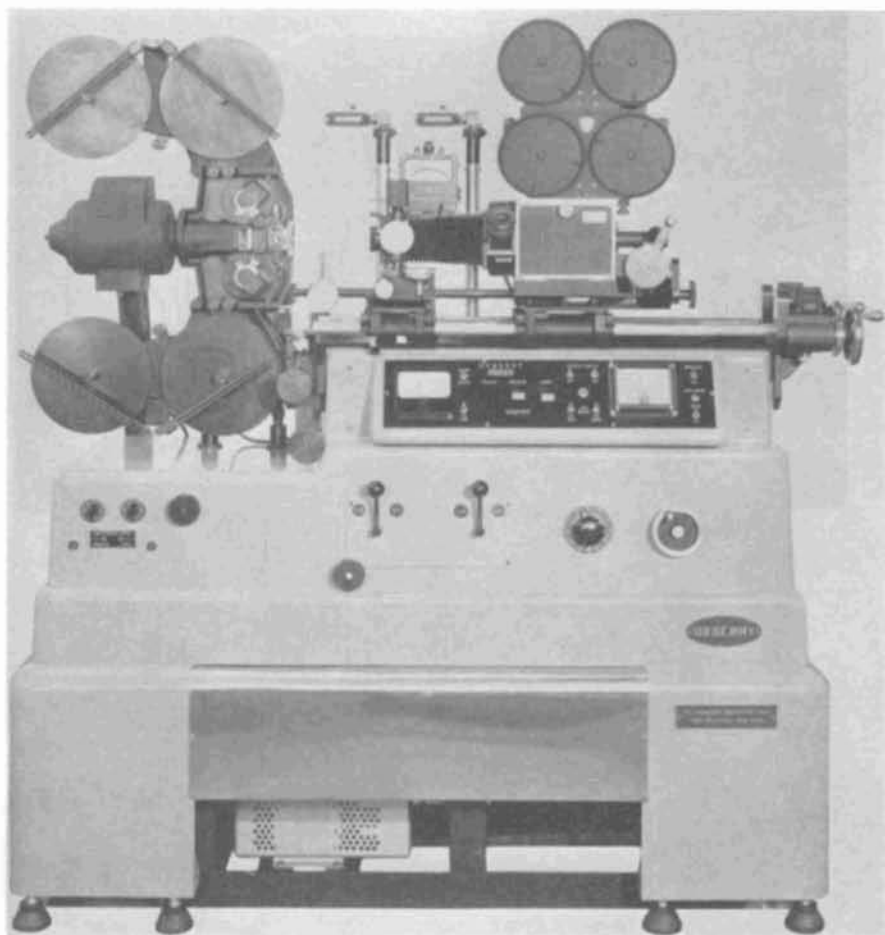
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A new optical printer designed by John Oxberry is now available from the Animation Equipment Corp., 38 Hudson St., New Rochelle, N.Y. New features include a superimposure device having a ground glass marked for silent aperture, camera sound aperture, 35mm sound projection aperture, 25% cutoff for 35mm, 16mm projection aperture, horizontal and vertical crosslines common to all rectangles and a short tick for center of silent 35mm; automatic dissolve designed to run forward or in reverse, continuously or in stop-motion, with range from 10 to 120 frames; Oxberry camera adaptable for 35mm or 16mm; achromatic condensing system permitting delivery of 22,000 ft-c with a 500-w bulb; projector head providing for interchangeable shuttles and sprocket assemblies for 35mm or 16mm film, including four spindles for 1000-ft reels; lens mount with dial indicators registering to 5/10,000ths of an inch.

The printer can handle enlargements up to 4 and reductions down to 5 $\frac{1}{2}$. The working space of 30 in. between camera and projector permits use of CinemaScope lenses. Projector head and camera have separate 700-rpm motors which bypass the stop-motion clutch and can thus be changed from designated speed to rewind and back without adjustment. The stop-motion motor operates through a range of 60 to 240 rpm, with speed indicated by an electric tachometer. Camera and lens have separate flip-over counters which designate zoom positions in hundredths of an inch. A vernier dial is also provided which permits readings in thousandths of an inch.

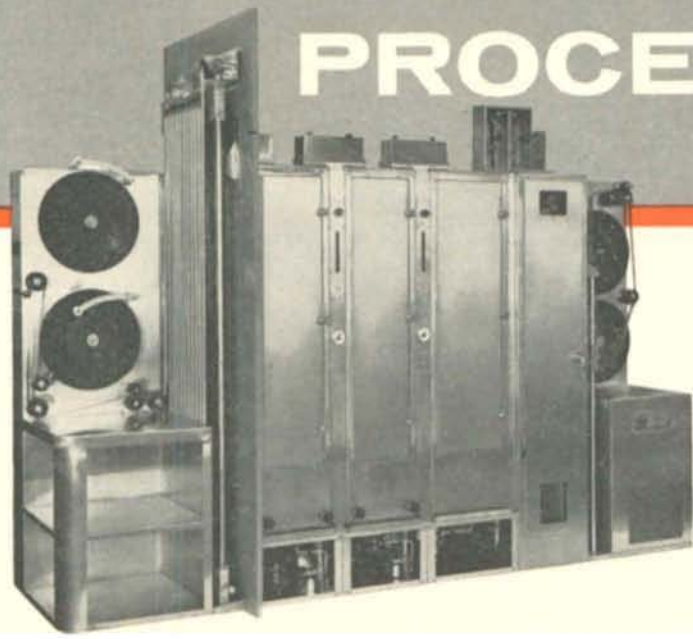
Dallas Film Industries, Inc., is a new company that has just announced its formation at 1011 Mercantile Securities Bldg., Dallas, Tex., for the production of films for television, theaters and industry. The production schedule for 1957 calls for a minimum of 26 half-hour television programs and two feature films for theatrical release. President of the new company is Joe Graham, who was until recently with the American Broadcasting Co., New York.

Three new television video equipment catalogs and a new audio equipment catalog are now available from Radio Corp. of America, Commercial Electronic Products, Camden 2, N.J. The video catalogs consist of a Camera Catalog, with a full line of RCA cameras and mounting accessories for live telecasting; a Film Catalog, with equipment for the film room; and a Terminal Catalog containing video distribution equipment, sync equipment and a full line of microwave gear. These catalogs replace the Video 1 and 2 and the Color Equipment catalog now in use.

The audio equipment catalog has descriptive information and specifications on microphones, turntables, amplifiers and speakers, consoles and rack equipment, and custom equipment.

Chance Brothers Ltd. of Birmingham, Eng., manufacturers of optical, ophthalmic, filter and other types of glass, will henceforth be known as Chance-Pilkington Optical Works, in order to indicate its relationship with its parent company, Pilkington Brothers Ltd. Chance-Pilkington Opti-

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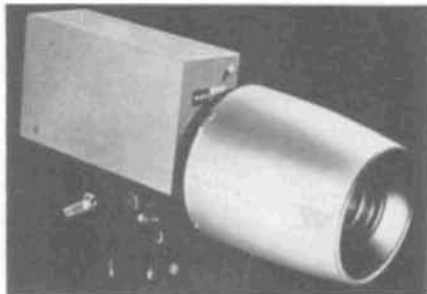
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Two new projector carbon sizes for the latest high-powered reflector lamps are available from National Carbon Co., Div. of Union Carbide Corp. The 13.6mm high intensity "National" projector carbon is now available in 18- and 20-in. lengths, in addition to the standard 22-in. carbon. A new $\frac{1}{8} \times 9$ -in. special "Orotip" cored negative carbon has been developed for use with these two new positive carbons.



A new model of the Auto-Zoom variable focal length lens for small television cameras has been announced by Perkin-Elmer Corp., Norwalk, Conn. The new lens has a speed of $f/3.5$, more than twice as fast as its $f/4.7$ predecessor. The lens has a 5:1 (30-150mm, 60-300mm) variable focal length range. Improvements have been

made in the electrical and control system permitting it to be remotely controlled 4000 ft away from the camera. Series 7 accessories can also be mounted on the improved lens. The lens has been designed for use with 16mm and vidicon-tube TV cameras. The dimensions, including motors but not control box, are $8\frac{1}{2}$ in. long \times $6\frac{1}{2}$ in. in diameter. It weighs about 6 lb. The lenses are priced at \$1,350 for the motorized iris model and \$1,200 for the manually operated iris version.

A new line of spool-loading 16mm cameras in medium-price range has been announced by Bell & Howell Co., 7100 McCormick Rd., Chicago 45. Known as the 240 series, the cameras are available in single-lens and two- and three-lens turret versions, featuring automatic threading, a 32-ft film run and five camera speeds. Suggested retail prices range from \$179.95 to \$259.95 and up, depending on choice of lens.

Color photography, both still and motion pictures, will be the main theme of Camera 57, the first Swedish International Photo and Cine Exhibition, scheduled for June 8-16 in the Grand Fair Building, Gothenburg, Sweden. The exhibit is sponsored by the National Union of Photographic Dealers, the Press Photographers Club of Gothenburg, Photo Clubs of Sweden, Swedish Photographers Association and the Swedish Industries Fair. Exhibitors from more than 10 countries are expected to participate.

Supplement No. 2 to the Bibliography of Colour Television, published by the Television Society of Great Britain, 164 Shaftesbury Ave., London, W.C.2, contains 234 items and was compiled by Mrs. K. Bourton of Ultra Electric Ltd. Copies of original Bibliography and of Supplement No. 1 are available at 2/6d each.

A missile-scoring camera "pod" for determining how and why a guided missile hits or misses its aerial target is being manufactured by Bell & Howell Co., 7100 McCormick Rd., Chicago 45, under a U.S. Navy Contract.

Since missile and target both fly at velocities approaching the speed of sound and at altitudes far beyond the range of human vision, a remote control system of recording data is a vital tool in evaluating missile accuracy.

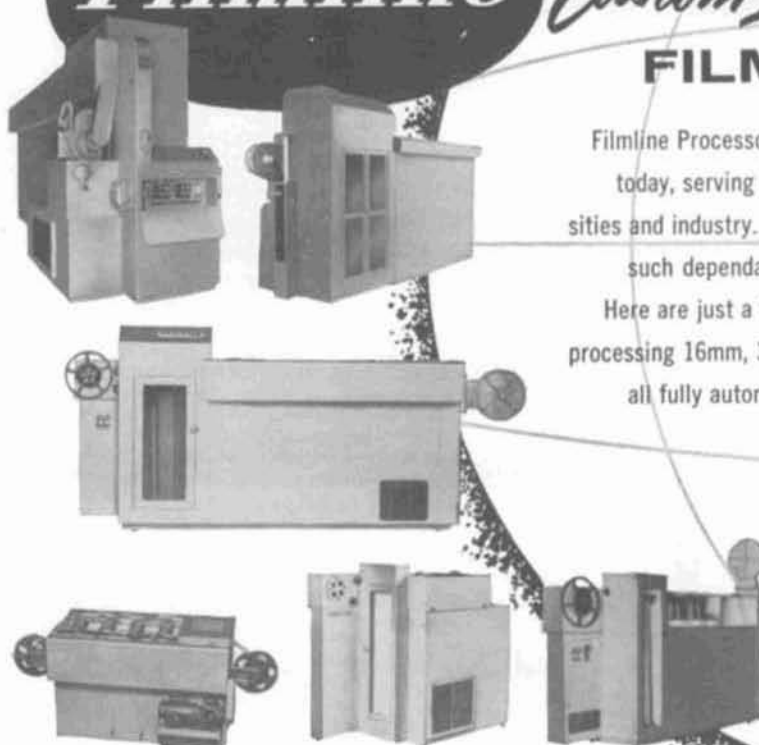
Mounted on the wing-tips of a drone target (a pilotless plane or a larger missile), each missile-scoring pod contains four 16mm high-speed cameras. The eight cameras — four to a pod, with one pod on each wing-tip — are mounted to give complete spherical coverage of a missile's flight as it nears the moving target. The cameras are so aimed that the approaching missile is continuously covered by at least two cameras.

Actual scoring of missile behavior is done by assessing the film records against suitable grid coordinate charts. Data thus obtained show the missile trajectory, miss-distances and other functional characteristics. A built-in electronic timing

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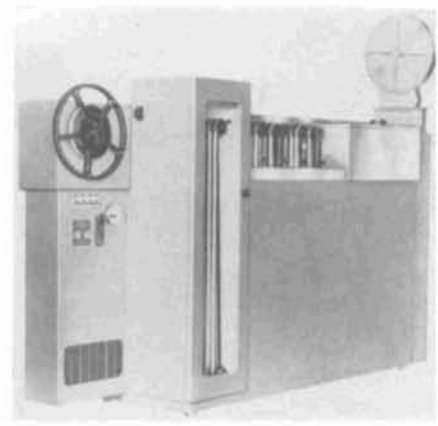


device indicates elapsed time in fractions of seconds on the film so that a missile's path and speed may be accurately evaluated.

The pod is 70½ in. long with a diameter of 11 in. and weighs 95 lb. The four electrically driven cameras with an operating voltage range of 24–29 d-c have a 200-ft film capacity and are watertight and interchangeable. The lens is 142° wide-angle and the operating range is between 5000 and 50,000 ft at velocities up to Mach 0.95 (just short of the sound barrier).

If there is a direct hit, the pods are jettisoned without damage by means of an explosive bolt, or "squib." Once free of the drone, the pods are lowered to earth by means of self-contained 16-ft parachutes, which land them in a position calculated to minimize impact damage. For recovery from water, they have nonmechanical flotation gear which keeps them surfaced for 24 hr; built-in dye markers; and an exterior finish in standard government recovery colors of brilliant yellow-and-red to assist in their location. To minimize hazard to operating personnel, the pod's explosive jettisoning squib is disconnected electrically until the drone is airborne.

Production quantities of the pod are being delivered to the Navy and are available to companies working on missile-scoring or rocket-scoring systems.



Filmline Corp., Erna St., Milford, Conn., has announced an automatic, temperature-controlled 16mm film processor. The new model, RI5TC, is a modification of the firm's reversal model which is used for developing high-speed microfilm as well as conventional motion-picture film. Among other features the new model has a variable-speed drive mechanism; daylight operation for all emulsions; recirculation pump for developer tank; feed-in elevator and a 1200-ft magazine to permit continuous processing. Dimensions are: height, 50 in.; length, 76 in.; width, 24 in.; weight, 500 lb.



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