New Products

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.

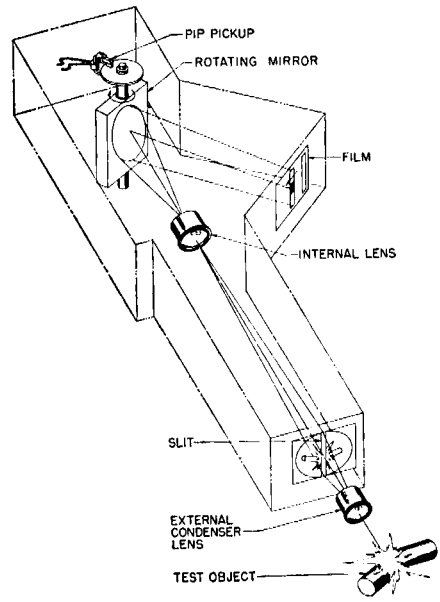
This is a new research camera, Model 168, developed by Beckman and Whitley, Inc., San Carlos, Calif., and described here with data supplied by Jack Chambers, Director of Research of that organization.

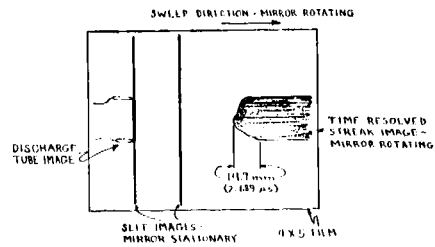
This smear or streak type of camera images the event to be studied through the vertical slit at the upper left, then the rotating stainless-steel mirror wipes the image onto film at a sweep rate of 0.327 to 5.466 mm/μsec. Either 4 × 5 in. or 4 × 10 in. film is used. Inside the upper right section of the housing below the vertically projecting knob is the mirror which by the knob is secured in a vacuum-tight round access panel.

The schematic shows how a self-luminous image is projected through the slit by an external condenser lens which is not part of the instrument. The internal lens forms an inverted nonmagnified image of the slit in the film plane after reflection from the mirror surface.

The slit width is 0.010 in. The slit plate is a piece of flat glass with an opaque coating on one side through which the slit line has been ruled. The shutter is a guillotine type to work at high speed to prevent multiple exposures, with exposure time of 1/200 sec. The mirror has a $3\frac{3}{4}$ × 4 in. reflecting surface. Temperature-monitoring thermocouples are mounted on the outer races of upper and lower mirror bearings.

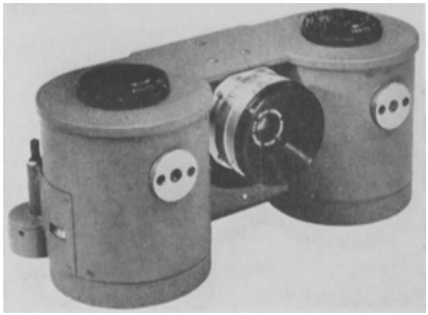
As shown in the schematic, synchronizing of the exposure with actuation of the test object is accomplished through the pip-generating commutator seen on top of the mirror. Each turn of the mirror produces a 15-v minimum pulse





which is used to trigger and synchronize the test object so that the image will be positioned on the film.

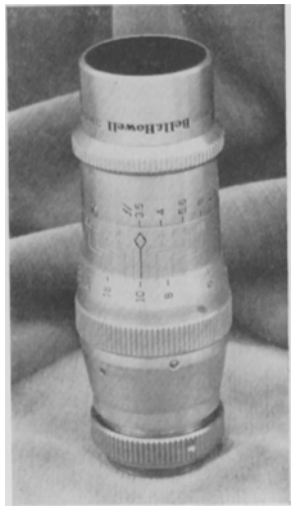
A typical recording is depicted in the last illustration. At the extreme left is a slit image photographed for the purpose of determining the position of the test object, a gas-filled glow-discharge tube. To the right is a second slit image also made with the mirror stationary. This image constitutes the time base from which measurements are made to the streak image at the extreme right. This image is produced with the mirror spinning and a synchronized high-voltage pulse applied to the tube.



The Auto Camera Mark 3 has been announced as available from J. A. Maurer, Inc., Photographic Instrumentation Div., 37–01 — 31st St., Long Island City 1, N.Y. Designed as a low-cost, lightweight, compact recording camera, it was originally provided for aircraft use by D. Shackman & Sons Ltd., London, England. It is $8\frac{7}{8}$ in. long, $3\frac{3}{8}$ in. wide, 4 in. high and weighs 6 lb. A spring motor drives the camera to transport and expose 21 ft of 35 mm film, the cycle being initiated by either a 12- or 24-v d-c pulse. The film is held in special cassettes. Five shutter speeds, from 1/10 to 1/200 sec, and "time" exposure, are provided. The standard lens supplied is a 36-mm focal length, *f*/3.5 in a graduated focusing mount. Other lenses are available and special models of the camera incorporate 6- or 9-in. lenses.

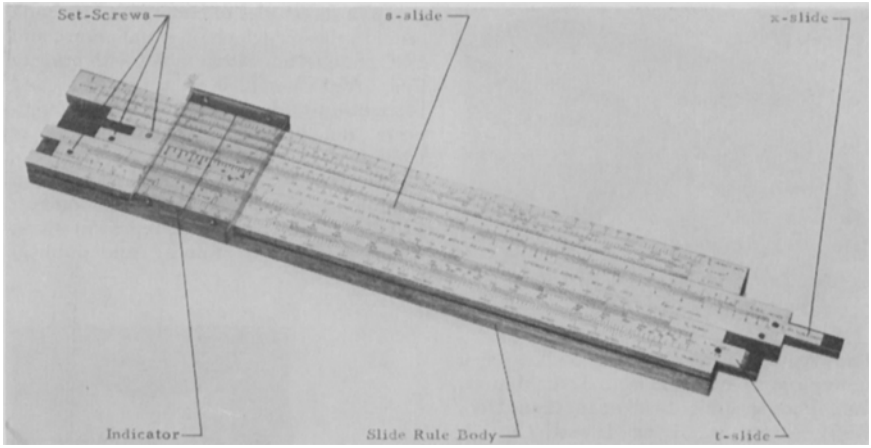
There are two models to provide alternatives of 200 pictures 1 in. × 1 in. or 300 pictures $\frac{3}{4}$ in. × 1 in. Accessories permit time-lapse recording, photomicrography, normal and stereo photomacrography, aircraft instrument and chemical experiment recording.

One-hundred and seventy-five television stations authorized to start operations during 1953 are listed in the 16th edition of Television Factbook, published by Television Digest, Wyatt Bldg., Washington, D.C. This figure covers all the post-freeze new television stations authorized through Jan. 3, 1953; of the 175, 48 are VHF and 127 UHF. *Television Factbook*, a semiannual reference guide, has 268 pages in the new edition and costs $3.00. A new feature in this issue is a group of directories of community antenna systems, theater-television installations, and FCC channel allocation tables with priority lists. Also included are revised and brought-up-to-date directories of: engineers and attorneys; manufacturers of television equipment, including receivers, transmitters, tubes, theater-television, and community antennas; program sources; FCC personnel; station representatives; trade associations; unions; and publications.



A new 3-in. *f*/3.5 telephoto lens for 16mm motion picture cameras has been announced by Bell & Howell Co., 7100 McCormick Rd., Chicago 45, Ill.

The new lens, which replaces the B & H 3-in. *f*/4 Telate lens, has all air-glass surfaces coated. Accuracy of focusing is secured by matching the lens and focusing scale within 1%. The lens carries an easy-to-read, standard spread-out iris scale with a range from *f*/3.5 to *f*/22. Click stops assure positive setting and prevent accidental changes of the diaphragm opening. The depth of field scale is filled in red for readier identification. Distances are calibrated in feet from film. Supplied with the lens are a metal lens cap and a sunshade. The sunshade serves also as a filter-holder. The retail price of the new lens, which is now available from Bell & Howell dealers, is $79.95. (Federal excise tax is not applicable.)



This is the first working model of the Revised Slide Rule for complete analysis of high-speed motion picture data.

In mechanics research, rapid methods for quantitative analysis of high-speed motion picture data are highly desirable. A first step in this direction was a slide rule developed at Springfield Armory in 1950, described before the Society at its 1951 Spring Convention and in a paper published in the June 1951 *Journal*. That model was essentially planned for determining the operation time and cyclic rate of moving parts, with additional use for some precalculation tasks.

Recently, a more general slide rule has been developed. It and some of its possibilities were described in detail before the Society at its 1952 Fall Convention. It has been designed to allow for determination of displacement, velocity and acceleration of moving parts. It consists of slide rule body, three slides and an indicator, and carries scales for camera speed, number of frames, time, length of film interval, cyclic rate, object displacement, image displacement, velocity, acceleration and depth factor. The proper setting of the three slides is determined by the camera speed, the magnification and the length of film interval selected. The indicator is used for aligning corresponding values in various scales, such as number of frames vs. time, object displacement vs. image displacement, displacement vs. velocity, and velocity change vs. acceleration. In addition, a data sheet has been developed to serve as a guide for the sequence of measuring and calculating operations and for plotting the results.

The slide rule and the data sheet have been used at Springfield Armory over a period of some months and have proved successful, with much time saved in calculations. A computing aid, after brief training, can perform the whole operation, and it appears that errors in numerical calculations are reduced. The slide rule is expected to be of special value to small installations where expensive computing equipment is not justified.

Manufacture and sale of the slide rule on a commercial basis have been postponed until the pending patent application is cleared. Further information is available from Springfield Armory, Atten: Karl W. Maier, Springfield 1, Mass.

A new edition of the Society's Test Film Catalog is now available at no charge from the Society's headquarters. It covers 27 different test films, 16mm and 35mm, for use by theaters, service shops, factories and television stations. These test films have been developed by the SMPTE and the Motion Picture Research Council.