

# new products

(and developments)

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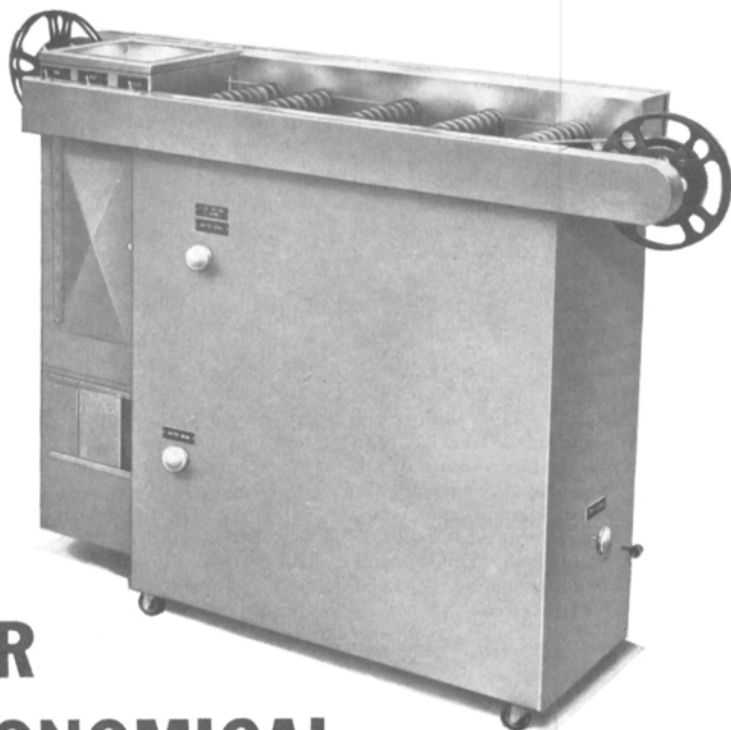
**Application of the "stimulated emission" principle of the maser** to direct amplification of sound waves was demonstrated at General Electric Research Laboratory for the first time, according to an announcement issued May 17. Source of power for the amplification of sound waves (phonons) is microwave radio energy. The effects (called the phonon maser effect) is accomplished by stimulated emission of energy by atoms as they move from a higher to a lower energy level. The effect has been demonstrated with short pulses of very high frequency (9.3 kilomegacycles) sound in a ruby crystal which consists of alumina ( $Al_2O_3$ ) with chromium ions as an impurity. When it is subjected to a magnetic field, the electrons on the chromium ions, acting as small magnets, tend to line up with the field. Each electron has four characteristic energy levels, corresponding to how closely it lines up with the applied field. Most of the electrons are in the lowest energy level, but can move to higher energy levels by absorbing energy at a certain resonant frequency, which is set by the magnetic field strength and the characteristics of the electrons in the crystal. The reverse transition, from a high to a low energy level, can be made by emission of energy at the resonant frequency.

**From Coon Peak in the Oquirrh Mountains in Utah** to the top of Albion Peak in Idaho, a single microwave beam, sent from a 10-ft, dish-shaped parabola antenna, traverses the Great Salt Lake, crosses the salt flats at the north and slices through a 5400-ft mountain pass to reach the receiving point on Mt. Albion, 7000 ft above sea level. From Albion Peak, a connecting microwave link flashes the signal to the transmitter site of Station KID-TV, Idaho Falls. The system, designed by RCA, has been announced as the "longest line-of-sight microwave transmission ever accomplished for television relay." (Since the microwave signal requires an unobstructed line-of-sight, relay stations ordinarily are located no more than 25 to 30 miles apart.) The equipment used in the system is RCA's TVM-1B microwave relay equipment.

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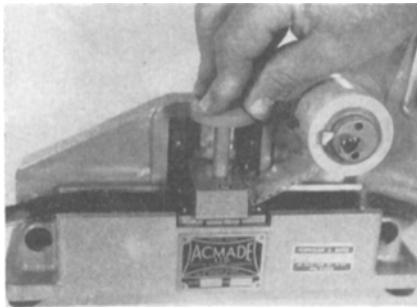


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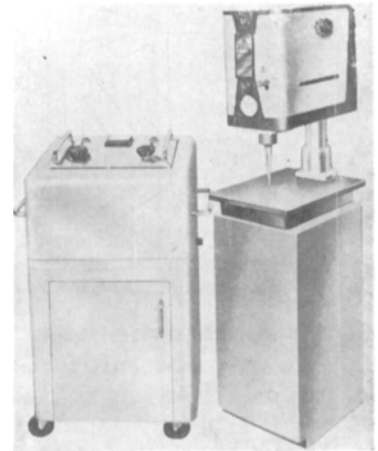
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The Acmade Automatic film splicer is available from Florman & Babb, Inc., 68 W. 45 St., New York 36, distributors for the English firm. Used for making butt splices, it applies Mylar perforated tape on 35mm and 16mm film as well as on all film bases, including Cronar. To make a splice, the operator presses a button after the film has been registered on precision pins and the splicing arm moved over until it is in place above the film. The push-button operation simultaneously cuts the adhesive and applies it to the film. The cutting arm, used to cut both sides of the film simultaneously after the film has been registered on pins in the horizontal channel, also operates automatically when the pushbutton is pressed. When the film is cut, the cutting arm can be moved to one side so that the splicing operation can be completed. Both arms are precision registered to exact specifications. The splicer is priced at \$295.

**HFC Repair Splicers** produced by Hollywood Film Co., 956 Seward St., Hollywood 28, employ Mylar tape with an adhesive back to splice or repair film for general purposes or for use in processing machines. The tape is applied onto the film and a solenoid action perforates the tape in alignment with the film perforation while simultaneously shearing both sides of the film. The 35mm models are available with negative or positive perforations and the area covered is one frame. On the 16mm model two frames are covered. Models for 65mm negative, 70mm theater release film, or military specifications #1 or #2 are available on special order.

A newly developed table-model splicer capable of being used for darkroom splicing of raw stock and preparation of A&B roll printing has been announced by Harwald Co., 1245 Chicago Ave., Evanston, Ill. The splicer features an automatic pre-set scraper said to require only three seconds of preparation for an accurate (reported within 1/10,000-in.) splice, with the entire splicing process completed within nine seconds. Available in three models, Model A, priced at \$99.50, has its registration pins in the conventional position at the rear of the splicing plate; Model B, priced at \$175, has registration pins in the center of the plate so that 16mm and 8mm splices can be made in any emulsion position without "criss-crossing," and Model C, priced at \$175, for 35mm film.

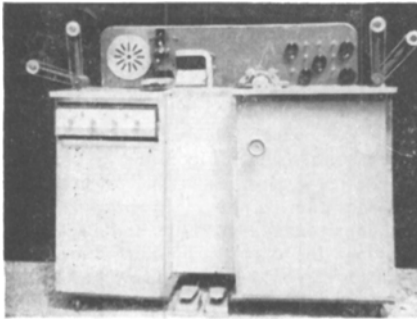


The Zephyr 300 Ultra Sonic Sealer produced by Ultra Sonic Seal, Inc., a Subsidiary of Kleer-Vu Industries, Inc., 76 Madison Ave., New York 16, depends on ultrasonic energy for its sealing and welding operations. Used on Mylar and Cronar as well as other types of film and other materials, it is said to be suitable also for splicing video tape and sealing leaders to coated surfaces of magnetic recording tape. In operation, according to the announcement, the welding device, or operating tool, moves at the rate of 20,000 vibrations per second, and the splicing or welding takes place because of the release of kinetic energy within the materials to be joined. The sealer consists of two separate units. The driver unit, which weighs approximately 200 lb, houses a 25-kc power generator and associated control panel. The head section contains an air-cooled transducer and the operating tool and is mounted on an adjustable base which can be used as an anvil. This section weighs about 85 lb and can be operated from a 115-v a-c line. When film or other material to be spliced or bonded is placed in contact with the operating tool, an imperceptible vertical motion generates heat internally between the sandwiched layers of material creating a molecular bond, while leaving the outer surfaces cool. The machine has been tested on film and other materials ranging in thickness from 1/4 mil to 100 mil at speeds up to 100 ft/min.

The HFC Sound Speed Attachment (SSA-1) for synchronizers, announced by Hollywood Film Co., 956 Seward St., Hollywood 38, is designed to aid in editing and dubbing operations by driving the synchronizer at sound speed (36 ft/min in 16mm and 90 ft/min in 35mm). The attachment consists of a geared motor, capacitor, coupling and a 3-way toggle switch. It can be attached to any synchronizer. It is priced at \$192.

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.

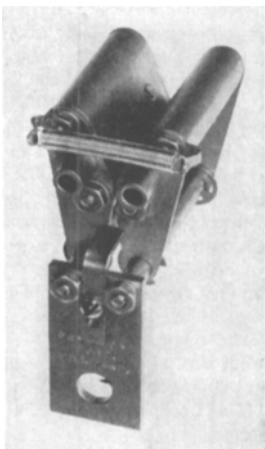
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A new 16mm editor in the Editors Desk series has been announced by Palmer Editors, 73-40 Vleight Place, Flushing 67, N. Y. The machine has two channels, one for picture and one for sprocketed magnetic film. The soundhead is directly over the picture aperture for easy editing. The takeup reels are power driven, forward and reverse. Instant stopping is provided and a clutch release allows for hand operation. A standard type of synchronizer is provided which indicates frame and footage. The table measures 48 by 18 in.

Improvements on the Model "U" Inspect-O-Film machine for inspecting, editing and cleaning motion-picture film and the development of the Inspect-O-Film Junior (Junior Console Model 61) have been announced by Harwald Co., 1245 Chicago Ave., Evanston, Ill. Improvements on the Model "U" machine include a new speed control and braking system which can be electrically adjusted. The work surface (546 sq in.) has been arranged to provide overall illumination with built-in adjustable shade.

The new Junior model is 48 in. long and 22 in. deep. Designed especially for use in small film centers and libraries, the machine is reported to have a 2000-ft reel capacity, maximum inspection speed of 650 ft/min and 2000 ft/min rewind speed with automatic stop. The machine is designed so that splices can be made without unthreading the film. It is priced at under \$2000.



A new air squeegee, the Model HB-2, designed for use on any 16mm or 35mm continuous film-processing machine, has been announced by Gryphon Corp., P.O. Box 854, Burbank, Calif. Using a combined Venturi-airfoil principle, the unit is designed to remove all surface liquid from the film as it passes through the squeegee on

an air cushion, thus avoiding contacting with metal parts. The squeegee is also designed to open automatically for passage of all commonly used film splices. The machine is made of stainless steel and is constructed for easy adjustment to any processing machine. It has been tested by the manufacturer at speeds in excess of 200 ft/min. It is priced at \$100.

Availability of a U/L approved "SCR" Dimmer in 4, 5, and 6 kw capacity has been announced by Kliegl Bros., 321 W. 50 St., New York 19. Designed for flexibility, the dimmer can be operated remotely, or can be installed as part of a control console or incorporated in a lighting cross-connect circuit selected system. The dimmer is a plug-in type and each dimmer incorporates two silicon controlled rectifiers in a back-to-back circuit to provide a symmetrical alternating current output to the lighting load it controls. The control voltage does not exceed 28 v d-c at 12 ma. Full line voltage to the lights is carried and controlled solely by the rectifiers. Each unit is equipped with a circuit breaker and a pilot light which indicates the operational state of the unit.

A new series of U/L approved dimmers with silicon-controlled rectifiers has been announced by Century Lighting. First installation was in the Yale University Drama School Auditorium. Presently available is a plug-in type in sizes up to 6000 w. Equipment for higher wattages is expected

to be available soon. The new system, as well as other lighting control systems and equipments, is described in the Century Data Book, available without charge from Century Lighting, 521 W. 43 St., New York.

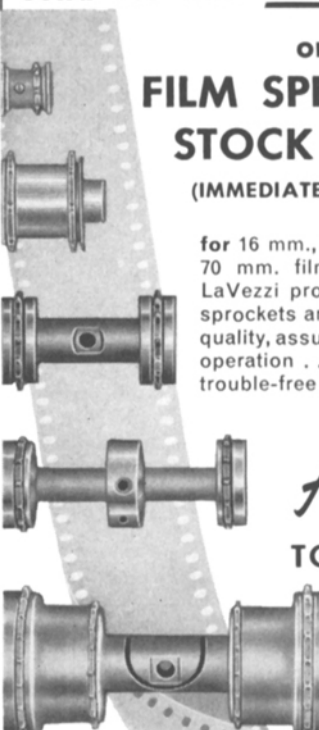

A new lens bench for rapid electronic testing of photographic lenses has been introduced by Eastman Kodak Co. The machine compares the amount of energy concentrated by the lens in a circle of very small diameter with the total amount of light in the image to determine if the lens under test is up to standard. The total energy and the energy passing through a small circular aperture are shown on a cathode-ray tube for comparison. A series of the test apertures drilled in a spiral on a rotating plate scans the image from side to side to determine the uniformity of the light-concentrating power of the lens being tested. Modifications of the testing machine make it possible to use the electronic signal that appears on the cathode-ray tube—the difference between total energy and energy passed through the scanning disc—for electronic positioning of the lens in its mount. The bench was described by William T. Sherwood at the recent meeting of the Society of Photographic Scientists and Engineers.

A 90mm f/1.0 lens has been designed by Bausch & Lomb especially for use in the Fluoricon x-ray image intensifier developed by General Electric. This fluoroscopic

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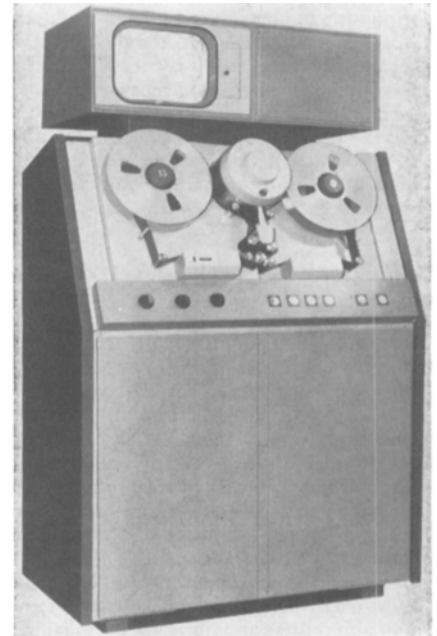
system, used for medical research and diagnosis, uses mirror magnification, closed-circuit TV and motion pictures to display x-ray images. Functioning as a relay lens system, the new lens picks up the image from a phosphor screen rather than directly from the x-rays, and is designed to photograph in the region of 0.550-micron light. The five-element design of the optical system is said to produce increased light transmission and uniformity of screen illumination. The lens is also said to have a high degree of aberrational correction without resorting to aspheric surfaces. Detailed information is available from the Photographic and Optics Sales Dept., Bausch & Lomb Inc., Rochester 2, N.Y.

A vidicon TV film camera (Model V-900), designed for maximum horizontal resolution, gray-scale response and linearity, has been announced by the Vicon Division of the American Microwave and Television Corp., 1369 Industrial Rd., San Carlos, Calif. Introduced at the NAB Convention held in May in Washington, D.C., the camera is said to provide the broadcaster with film reproduction of 800-line horizontal resolution in the center and 600 lines in the corners. Response is reported at 50% at 800 lines and 75% at 600 lines. The design incorporates electron optics, which produce an extremely small, high-density electron beam, to eliminate the need for aperture correction. All voltages, including camera filaments are regulated electronically. A cascode input stage and special low noise resistors are incorporated to achieve a high signal-to-noise ratio.

An image orthicon camera, the V-600, is a product of Foto-Video Electronics, Inc., 36 Commerce Rd., Cedar Grove, N.J. Designed for live-image or closed-circuit monochrome use at 600-line minimum resolution, the camera weighs 25 lb and occupies 25 cu ft of space. It can be fitted with conventional studio lenses or with a variety of Zoomar lenses. Designed for high sensitivity, the camera is said to provide good fidelity at light levels of less than 1ft-c. Modular in construction with wing side doors and hinged top, a transistorized preamplifier plug-in module uses a high-gain, double cascode circuit arrangement to assure maximum freedom from noise. Other features include an individual high peaker in the camera head to produce high-frequency response with high signal-to-noise ratio; built-in adjustable independent aperture and phase corrector; and an all-transistorized constant-current regulator for focusing.

An electronic device called AMTEC (Ampex Time Element Compensator), designed to provide instantaneous and automatic line-by-line compensation of timing errors in the composite video signal, has been announced by Ampex Video Products Co., Box 3000, Redwood City, Calif. An engineering model of the device, originally developed at CBS, was introduced at the Society's 1960 Spring Convention in Los Angeles. Further developmental work has been conducted at Ampex laboratories and the production model, demonstrated at

the NAB Convention held in Washington, D.C., in May, has been fully transistorized. With its fully contained power supply the device occupies only 5½ in. of rack space. In operation it samples the timing accuracy of the recorder's playback signal at the rate of once each horizontal interval. The timing error (if present) is detected and compensation completed in time to correct each horizontal sync pulse and its accompanying line of picture information. The device has been described as an "automatic watchman" to prevent picture distortions such as skewing, scalloping and horizontal line displacement, from reaching the viewing screen.



A closed-circuit TV tape recorder, designed specifically for nonbroadcast applications (educational, military, industrial, etc.), has been announced by Ampex Video Products Co. 2755 Bay Road, Redwood City, Calif. The new Recorder, called the VR-8000, incorporates a single record/reproduce video-head helical scan recording technique specifically designed for closed-circuit application. The new recorder is said to provide all the detail and gray scale tone values the TV camera is capable of picking up. A video erase unit incorporated in the machine covers the full 2-in. width of the tape. A separate audio erase head is included. The 7½-in./sec tape speed permits the recording of two hours of material on a standard 12½-in. reel of 2-in. tape. The machine weighs approximately 500 lb and is self-contained in a cabinet 24 in. deep, 56 in. high, and 42 in. wide and occupies 7 sq ft of floor space. It operates from 117 v nominal a-c, 60-cycle at 15 amp. Also available are 220-v, 50-cycle versions. The basic price is \$20,400.

A miniaturized color conversion unit for Ampex VR-1000 Videotape Recorders has been announced by Ampex Video Products Co., Box 3000, Redwood City, Calif. Trade-marked as the Colorter system, it occupies only 4½ in. of rack space. According to the announcement, the device eliminates the complex conventional signal proc-

essing of decode-encode systems or heterodyning systems. The device is described as a direct color recovery system employing precise time-base compensation of the tapesignal so that the resultant signal is within the required stability limits. In operation it is said to accomplish line-by-line compensation of timing errors in the composite color signal by sampling burst phase of the signal each horizontal interval, with respect to the external 3.58-mc signal. The instantaneous phase difference between the sampled and reference signals is converted to a proportional voltage which adjusts the delay time of a voltage controlled delay line in the video signal path. The unit was demonstrated at the NAB Convention held in Washington, D.C., in May.

**A dynamic, nondirectional, voice-range microphone**, the E.V Model 652, designed for use in small stations or studios with an acoustic problem that can be alleviated by use of a close microphone, has been announced by Electro-Voice, Inc., Buchanan, Mich. A 24-in. "neck" of semi-rigid  $\frac{1}{4}$ -in. tubing permits mobility of the microphone in relation to the speaker or performer. Supplied with two transparent baffles to allow accentuation of the presence range, the smaller baffle is used for a 3-db boost and the larger for a 6-db boost at 5000 cycles/sec. Used without a baffle, the microphone is said to provide smooth response from 80 to 8000 cycles.

**A motion-picture projection system called Strato-Cinema** developed especially for showing entertainment films to passengers on airliners, has been tested on a TWA jet New York-Miami flight and will soon be installed on TWA jet transcontinental and transatlantic flights for the entertainment of first class passengers. Installation kits will be manufactured exclusively for Inflight Motion Pictures, Inc., by Lockheed Aircraft Service, New York International Airport, Jamaica 30, N.Y.

**Brumberger Reel Chests** for storage of motion-picture reels and cans and magnetic tape reels are products of Brumberger, 68 34th St., Brooklyn 32, N.Y. Available in Economy and DeLuxe models and in various sizes, prices range from \$3.25 for an Economy Model chest accommodating twelve 200-ft reels of 8mm film or 5-in. magnetic tape reels to \$7.50 for a DeLuxe chest (with a device for automatic reel selection) which holds nine 400-ft reels of 16mm film or 7-in. magnetic tape reels.

**Minute pencil tubes** (so called because of the size and shape) designed by RCA's Electron Tube Division, Harrison, N. J., were installed in the Mercury Space Capsule's two-way radio system used for Earth-to-Space/Space-to-Earth communications in May while Astronaut Shepard was traveling in Space at the rate of 6000 ft/sec (more than 4000 mi/hr). The tube, designated RCA-5876, is an ultra-high-frequency high-gain triode. It was designed mainly for use in grounded-grid service as an r-f amplifier in transmitters or receivers operating up to 1000 mc/sec. Plans for a manned space flight in orbit, scheduled for later this year, include use of the RCA-5876 in the communication system.

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