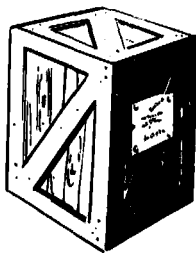


new products

(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.

A new electronic system for editing tape-recorded TV programs has been announced by Radio Corp. of America. Developed for NBC and RCA Electronic Products by RCA Astro-Electronics Division, Princeton, N. J., the system is constructed to enable the television editor to select, view, compare and evaluate groups of frames in tape-recorded programs and to make immediate selections of beginning and end frames of sequences to be removed or altered. The system was described in a paper by William J. Haneman and Harvey Ostrow presented at the SMPTE Convention held in Toronto, May 7-12.

Basic operation of the new system involves recording on the tape identifying numbers with each frame and the subsequent use of the numerical signals to control the automatic selection of specific frames of interest to the editor. The equipment comprises three major units: a frame-number generator, a frame-selection and display console, and a tape search-and-splice console. The identifying numbers can be recorded with the original tape or added later to a prerecorded tape. When the tape is played back the identifying frame number appears above each picture as it is viewed on the display console. The picture sequence can be stopped for as long as five minutes to permit further study. After the tape is transferred to the search-and-splice unit, built-in dials are used to specify the identifying frame numbers of frames to be located. The tape is then played back on the unit, and when a frame number corresponding to the dial setting is reached the tape stops automatically with the frame position and precise location for splicing indicated.

Immediately applicable to broadcasting, the system is expected to have broad application to large-scale picture library systems, such as pictures from satellites.

The VR-1002, fifth in the series of the Ampex Videotape recorders, was introduced by Ampex Video Products Co., Redwood City, Calif., at the NAB Convention held in Washington, D.C., in May. The new model is designed to include major innovations and refinements in operating



controls and circuitry. New features include the AFC Modulator/Demodulator, which incorporates automatic frequency control of the carrier and simplified arrangement of carrier frequency and deviation with built-in zero-center metering, and the new Mark III Head Assembly. The new head assembly is constructed with four pre-matched record/playback heads preset to within 0.05 μ sec with respect to quadrature. It is said to minimize geometric picture distortion and improve performance characteristics. The new machine occupies

Acceptance of the MOVIOLA CRAB DOLLY for motion picture and television cameras is world wide as evidenced by unsolicited testimonials.

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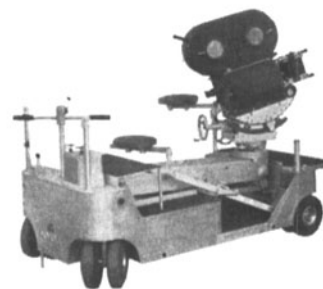
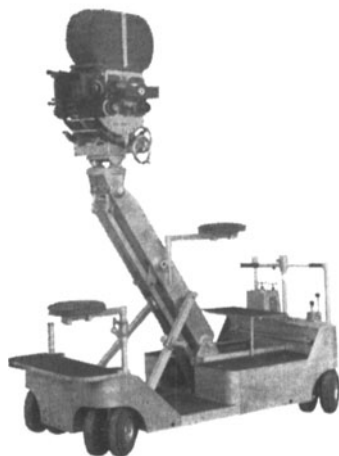
Regardless of the shot — moving or static — all people engaged in the creative phases of the industry recognize that production values are enhanced by the use of the Moviola Crab Dolly.

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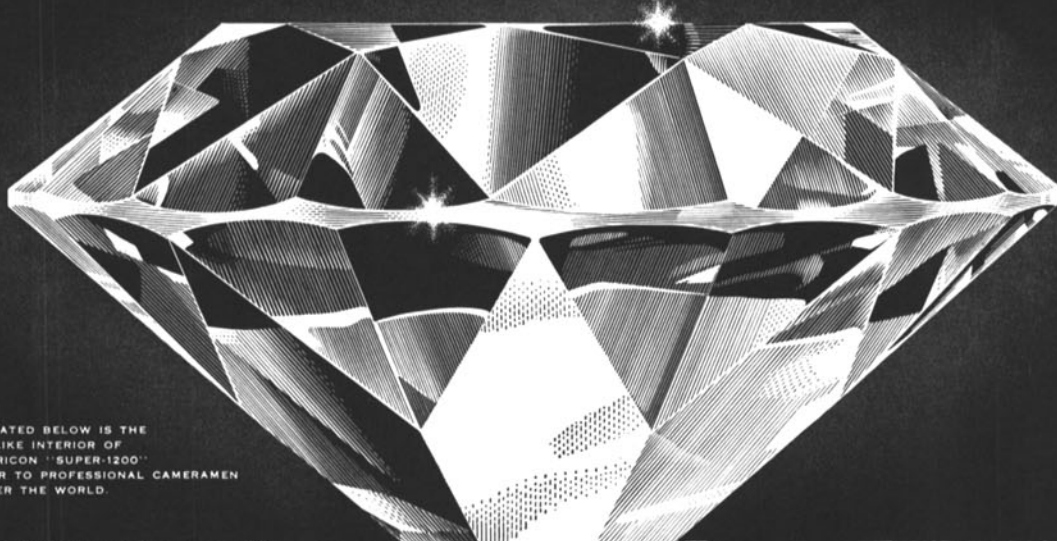
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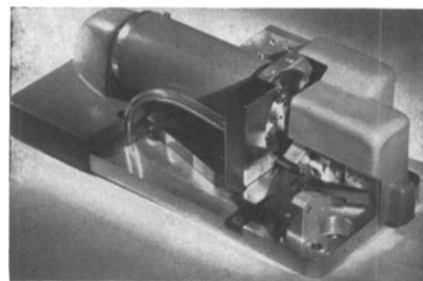
AURICON... THE PROFESSIONAL CAMERA - STANDARD OF THE 16MM SOUND INDUSTRY SINCE 1931

11½ sq ft of floor space and has a two-cabinet construction with an overall height of 5 ft, 5 in. It has fewer tubes and fewer transistors than earlier models to simplify maintenance and adjustment. It is priced at \$41,950.

The Ampex Selective Editing unit, an electronic device used in conjunction with Ampex's Inter-Sync TV signal synchronizer for pushbutton-controlled editing, has been introduced by Ampex Video Products Co., Redwood City, Calif., as a regular accessory for the Ampex Videotape Recorder. The accessory kit consists of an all-transistorized chassis, which fits into 3½ in. of rack space, and a full-track erase assembly for replacement of the recorder's standard full-track erase head. The new unit is designed to compensate electronically for the physical separation of the erase head and the video recording head in the recorder's tape transport system. Purpose of the new unit is to make it possible, with one recorder, to assemble

prerecorded segments into a complete program or commercial tape without splices or discontinuities in picture transitions. It is also used to erase any portion of a tape and to insert new material without cutting or splicing. When new material is inserted only the audio and video portion of the previous recording is erased. The original control track is retained for added stability. A three-position rotary switch allows for selection of three modes of operation: Inoperative, Insert and Assemble.

A new type of video head, designed to provide longer operating life and improved recording quality, has been introduced by Ampex Video Products Co., Redwood City, Calif. Called the 340 Ferrite Video Head it features unitized transducers with wear-resistant, all-ferrite tips, said to provide operating life more than 10 times that of the standard video head assembly, and a signal-to-noise ratio of 46 db. It is planned to supply the new head assembly as optional equipment for Ampex Videotape



Recorders. It is expected to be commercially available by August with a price of \$2950.

An optical multiplexer (Type PF-11-A) has been designed by Eastman Kodak Co. for General Electric. The multiplexer, announced by General Electric Communication Products Dept., P.O. Box 4197, Lynchburg, Va., uses frontsurface mirrors to project the image from film and slide projectors, including the latest improved version of the G-E continuous-motion, TV projector system. The system is designed so that the center line of the projector output is horizontal and 48 in. above the floor. Both the multiplexer and the improved projection system were introduced at the NAB Convention held in Washington, D.C., in May.

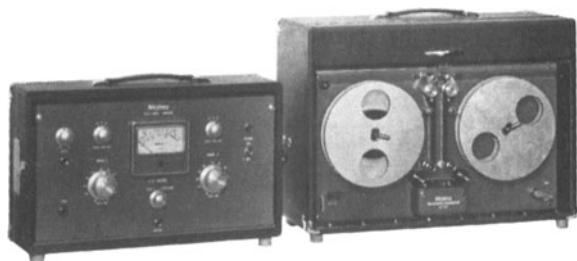
A model of equipment for future use in a fully-automated, computer-controlled television station with all its operations carried on by an integrated electronic system was displayed by Radio Corp. of America at the convention of the National Association of Broadcasters held in Washington, D.C., in May. RCA-produced automation equipments include a continuous loop for film projector, semiautomatic live cameras, random access tape with automatic cue, and an automatic announcer, the latter shown for the first time at the NAB convention. The announcer is a combination of RCA's RT-7 cartridge tape recorder and its TP-7 slide projector, providing a complete sequence of slides synchronized with a recorder announcement. The unit may be operated by pushbutton or by a signal cue from other gear. Another development toward automation is the simplification of controls by use of four basic panels to reduce the knob-button complex. Of present advantage for manually-controlled operations, this development is said to be a step toward eventual automation.

A single-cubical 1000-w VHF high-channel TV transmitter, developed by General Electric Co., may be used in the future as the base for a block-building approach to a 35,000-w VHF high-channel transmitter for telecasting at maximum commercial power. A second cubicle can be added to the 1000-w unit to form a compact 5000-w transmitter. The 5000-w transmitter can also be used as the driver for the G-E Type TF-14-A amplifier. Announcement was made by the General Electric Communication Products Dept., P.O. Box 4197, Lynchburg, Va.

The CECO High-Speed Editing Table, introduced by Camera Equipment Co., 315 W. 43 St., New York, is designed for

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The Westrex Series 1200 Portable Magnetic Systems are truly portable. The mixer weighs 22 pounds and the recorder 39 pounds. Three different models allow recording with 16mm or 17½mm magnetic film, or ¼" perforated magnetic tape. These systems are built with the identical award-winning quality features built into the Westrex professional studio systems. Included are all system cables, spare glassware, and two headsets. Microphones, microphone cables, tripod and other accessories are available. For a checklist of the built-in advantages of these very flexible systems, plus complete specifications, ask for Data Sheet Series 1200, Recording Department, Westrex Corporation, 5501 Romaine Street, Hollywood 38, California or 540 West 58 Street, New York 19, N.Y.

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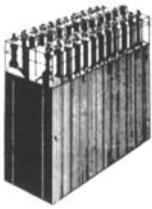
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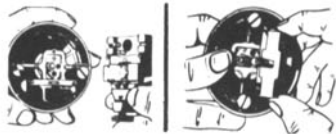
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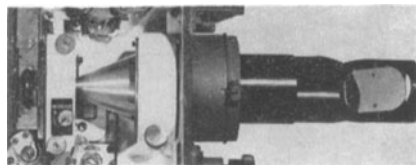
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rapid film scanning and is available in 35mm and 16mm models. The unit, which includes a viewer, operates at a speed from zero to 250 ft/min in both forward and reverse, and is also designed to stop the film action on a single frame instantaneously without damaging the film. The viewer has a 4 by 6-in. screen and is equipped with a footage counter and optical sound head. A conveniently located panel contains speaker, amplifier and controls for both speed and sound. The unit is suggested for television and film library use where rapid inspection of prints, insert spots, commercials, etc., is required. Dimensions are 60 in. long, 30 in. deep, with a table height of 36 in. The 16mm table is priced at \$2500. The 35mm table is priced at \$1750. Accessories, including a time counter, are priced separately.



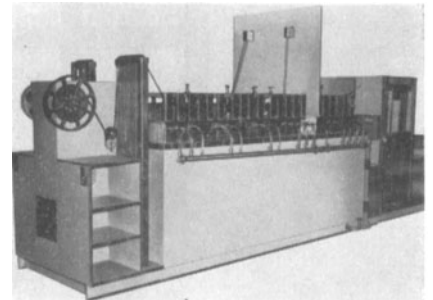
The projector alignment tool kit developed by the Motion Picture Research Council is now available from the National Theatre Supply Co., 50 Prospect Ave., Tarrytown, N.Y. The kit contains a film path gauge for mechanically lining up the fixed guide roller, the guide rails, and the narrow-tooth intermittent sprocket; an optical alignment tool for positioning the carbon arc and the mirror on the optical axis of the projection lens; and sufficient footage of 35mm all-purpose projector alignment film to make loops. This film is used in conjunction with the alignment tool to center the image on the film on the optical axis. The optical alignment tool can be used with the projector in full operation. An adjustable observation mirror is provided so that all alignment operations can be made from the projectionist's usual working position. The complete tool kit is priced at \$59.50.

A description of the 16mm color film used to record the reactions of the second astronaut to reach outer space has been released by Anso Division, General Aniline & Film Corp., Binghamton, N.Y., subsequent to government clearance, with an announcement that it will soon be commercially available. The film, Anscochrome F P C-132, was the result of more than nine months research by Anso preceding the development of a film for the space program that would be suited exactly to the dim light and other conditions within the Mercury capsule that carried Lt. Shepard aloft on May 5.

Expected to be useful in industrial research, such as flame study, instrumentation and other specialized applications, the film has a present minimum rating of ASA200. However, experiments have indicated that a higher rating, up to ASA-500, is acceptable because of the film's consistently good latitude, which permits wider lens openings without the necessity of forced processing. It has been suggested that with forced processing, the film's speed range may be extended even further.

The film is essentially a daylight type film (6000 K), but may be used under tungsten illumination in special cases. Its speed, in common with that of other color films, is considerably reduced by the use of filters necessitated by artificial light, so for most purposes requiring artificial light the manufacturers recommend a Super Tungsten type film.

The grain of the new color film is of moderate size and gradation similar to that in Super Anscochrome, the announcement stated. Resolution is between 45 and 55 lines/mm. The film will be available in 16, 35, and 75mm, and special sizes and spool and core specifications can be supplied.



The Houston Model 515-K2, a professional, double-duty processor for Kodachrome K-2 film, has been announced by Houston Photo Products Division, Houston Fearless Corp., Burbank, Calif. The machine automatically processes both 8/16mm and 35mm film, either simultaneously or separately, or two reels of 8/16mm can be developed at the same time. Independent drive systems for the two film sizes are on opposite sides, but utilize the same tanks for solution, rinse and wash, plus a common drybox. A single all-purpose driveshaft on the bottom eliminates film tension. Speeds are 12½ ft/min for 8/16mm and 5 ft/min for 35mm. The machine's equipment includes automatically controlled heating and refrigerating, automatic On-Off switch, loading elevators, pumps, replenisher tanks, compressor, air filters, drybox and control panel. The unit is 16 ft long and 5 ft high and does not require a platform. It is priced at \$27,750.

A new film processing machine which uses chemicals in a viscous form (about the consistency of heavy lubricating oil) to process black-and-white 16mm film at a speed of 36 ft/min and a dry-to-dry time of 1 min has been announced by Eastman Kodak Co.

The machine, called the Eastman Viscomat Processor, Model 10P, is about the size of a four-drawer file cabinet (21 in. wide, 16 in. deep, 58 in. high). It weighs 330 lb. It operates on standard 110 a-c current, and requires only two hose connections — one to bring in water, heated to 130 F, at the rate of 1 gal/min, and the other to drain the wash-water.

When the film is processed it is uniformly wetted and brought to processing temperature before the chemical is applied, through the use of pressurized water sprays which saturate the processing chamber with water vapor at a uniform temperature of 125 F. The viscous material is drawn into the processor through a gear-driven meter-

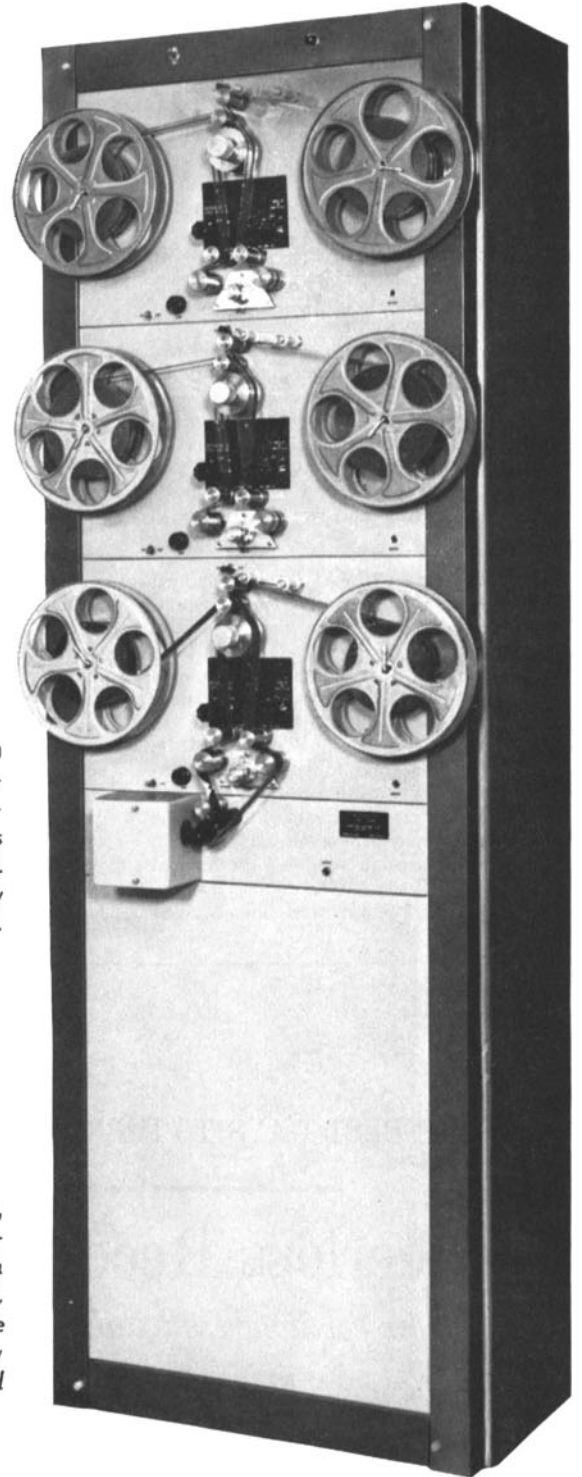
MAGNA-TECH ELECTRONIC 400 SERIES FILM RECORDING EQUIPMENT ARE VARIOUS INSTRUMENTS SPECIALIZED TO PERFORM THE FUNCTIONS ASSOCIATED WITH THE PRODUCTION OF OPTICAL AND MAGNETIC SOUND FOR MOTION PICTURES. THEY OFFER SPACE AND CAPITAL INVESTMENT SAVING WITHOUT COMPROMISING THE CRITICAL DEMANDS OF THE ENGINEER.

The transport is a self-driven unit incorporating the film pulling mechanism, a miniaturized semi-conductor reproduce amplifier, drive motor and torque motors in one assembly. Basically a magnetic reproducer, it is also used as a magnetic recorder, optical reproducer, and optical recorder by means of optional attachments.

Interlock is provided by the conventional method using a selsyn motor mounted on each film transport. 2 to 8 track reproducers and record attachments are also provided. 8 reproduce amplifiers are mounted on one panel. Recording amplifiers are on individual panels.

A cabinet can be supplied to house five complete film reproducers or various optional attachments and transports utilizing the 77" panel space. A semi-conductor power supply mounts inside this cabinet.

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TYPE	FILM WIDTHS	SPEEDS(fpm)	OPTIONAL ATTACHMENTS ACCOMMODATED		
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MD417	17½mm	90	MR417 MAGNETIC RECORD		
MD435	35mm	90	MR435 MAGNETIC RECORD	OD435 OPTICAL DUBBER	OR435 OPTICAL RECORD
MD447	17½mm	45	MR447 MAGNETIC RECORD		
MD437	COMB. 17½/35mm	DUAL 45/90	MR437 MAGNETIC RECORD	OD435 OPTICAL DUBBER	OR435 OPTICAL RECORD
MD427	17½mm	DUAL 45/90	MR427 MAGNETIC RECORD		
MD497	COMB. 17½/35mm	90	MR437 MAGNETIC RECORD	OD435 OPTICAL DUBBER	OR435 OPTICAL RECORD
MD436	COMB. 16/35mm	DUAL 36/90	MR436 MAGNETIC RECORD	OD416 AND OD435	OR416 AND OR435

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ing pump. The feed system contains a reservoir which eliminates any air from the material before it is pumped. When applied to the film, the viscous chemicals are extruded through a hopper which applies a thin, uniform layer across the entire surface of the film. The chemicals are applied in a downward direction while the film moves upward.

Production models of the Viscomat are expected to be available about January 1, 1962. The price will be \$12,500.

A two-part paper presented at the 89th Convention in Toronto described the new method and the machine. Authors of Part I, entitled "Viscous-Layer Processing of Motion-Picture Film," are George E. Cummins, John R. Turner and Robert J. Wilson. Authors of Part II, "A Machine for the Rapid Processing of 16mm Films," are Paul A. Hermle and Harold D. Lowry.

The Perfectone EP6A Recorder and Ryder Sync Generators, Transformers, and accessories have been announced by Magnetic Sales Corp., 1147 North Vine St., Hollywood 38. These equipments (See "Improved Synchronizing System Using Magnetic Tape," by Loren L. Ryder, in earlier pages of this issue of the *Journal*) are designed for use in motion-picture and TV studio productions. The 16-lb recorder is priced at \$1285. The Sync Generators are available for the Bolex H-16, Eastman Kodak Cine-Special and for Mitchell 16mm wild camera motors, each priced at \$145; and for Arriflex

16mm, Arriflex 35mm, and for Auricon Cine Voice cameras, priced, each, at \$170. Sync transformers, which are used in place of the generators when the camera is being driven by a synchronous motor are priced at \$30 for single phase, 120-v, 60-cycle, and at \$40 for three-phase, 220-v, 60-cycle. Various accessories and modifications for and of these equipments are also available.

A transistorized playback synchronizer for synchronizing $\frac{1}{2}$ -in. tape in playback with sprocket-driven film has been announced by Magna-Tech Electronic Co., 630 Ninth Ave., New York 36. The device, designated Type 92B, is designed to correct speed deviations of 20% to -20% from sync speed. It can be used with most tape transports. The unit is mounted in 12 $\frac{1}{2}$ in. of rack space and weighs 38 lb. It is priced at \$1920.

A new series of tape recorder/reproducers has been announced by Midwestern Instruments, Inc., 41st and Sheridan Rd., Tulsa, Okla. Called the Magne-cord 748, the recorder has a tape speed of 3 $\frac{1}{2}$ in./sec or 7 $\frac{1}{2}$ in./sec. It is capable of stereophonic, monophonic and sound-on-sound recording. It accommodates up to 10 $\frac{1}{2}$ -in. reels and can be ordered with $\frac{3}{4}$ -track or $\frac{1}{2}$ -track heads. A direct drive hysteresis synchronous motor is incorporated to provide timing accuracy of ± 3 sec in 30 min of playing. At 7 $\frac{1}{2}$ in./sec, the frequency response is said to be 40 to 15,000

cycles/sec, ± 2 db with flutter and wow held to 0.15%. Speaker/amplifiers are available as optional equipment. The 748-4 stereo-stereo recorder/reproducer, complete with case and $\frac{3}{4}$ -track head is priced at \$924. The 784-44 with a fourth head ($\frac{1}{2}$ -track) is priced at \$965.



A new mixer amplifier, available in two versions — a 5-position single channel and a 4-position single channel stereophonic — has been announced by Oliver Berliner, UltraAudio Products, Dept. P-10, 7471 Melrose Ave., Los Angeles 46. Name of the new product is *CustoMixer*, so called because of the design which permits users to purchase only the plug-in, shock-mounted preamplifiers and input transformers required for the specific application. Both versions incorporate the *Line-Aten* straight-line volume control. According to the announcement, input and output impedances are from 500 to 600 ohms plus hi-z. Each output line has an illuminated VU meter, with further provision for stereo headphone monitoring and feed to external power amplifiers and public address systems. Each unit incorporates a self-contained, fused silicon rectifier power supply. Both versions are priced at \$480.

Three new models of the Simoramic Spectrum Analyzer have been announced by Federal Scientific Corp., 615 W. 131 St., New York 27. These are Models 505, 110, and 4A. Model 505, said to cover simultaneously the frequency band from 50 cycles/sec to 5000 cycles/sec, features variable resolution from 35 cycles/sec to 350 cycles/sec, thus providing a high degree of flexibility, particularly in the analysis of speech signals. Model 110 is a delay-line synthesized Fourier analyzer operating at a theoretically maximum information extraction. It is designed to permit Fourier analysis of signals in the audio spectrum with a 1.3 cycle/sec resolution. Model 4A is a high-speed, fine-resolution analyzer operating in real time and designed to cover simultaneously the frequency range 1 cycle/sec to 200 cycle/sec without the use of contiguous filters, because of the incorporation of special frequency conversion circuits.

The Green-Bartlett Colorimeter is a machine that can "see" colors and that can automatically sort and grade products on the basis of color variations at a speed far beyond human capabilities. Developed by Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass., the machine combines an electronic-optical head with a small-scale digital computer. Light reflected from a colored material to a photo-detector generates a series of signals which represent the tristimulus values. These signals are fed to a computer where coded color information is converted to digital form and stored for subsequent actuation

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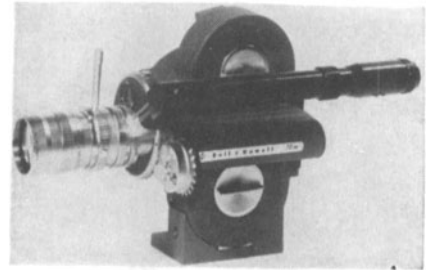
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of sorting mechanisms or process controls. In a demonstration of the first developmental model, the machine handled articles at a rate of 10 per second, sorting them into some 40 different color categories. According to the announcement, it is expected that further developments of the basic system may lead to applications for high-speed continuous scanning devices.



The Traid Twenty-Eighty Variable Focal Lens is now available with a built-in viewfinder which may be positioned for any spot in the 360° range around the camera. The framing mask can be rotated for horizontal positioning and the eyepiece closes to prevent feedback of light. The lens fits any "C" mount 16mm camera and provides focal lengths from 20mm to 80mm for wide angle, normal or telephoto shots. The lens with viewfinder is priced at \$450. It is a product of Traid Corp., P.O. Box 648, Encino, Calif.

A Kinoptik lens with a wide-angle coverage of 197° has been announced by Karl Heitz, Inc., 480 Lexington Ave., New York 17. The lens, 1.9mm f/1.9 (in "C" mount) for 16mm motion-picture and TV cameras, is a custom-ground, 9-element Apochromat. It gives a round image, 8.7mm in diameter. Used for photographing interiors, panoramic views, underwater scenes, missiles, etc., it is said to be capable of photographing an area behind the photographer operating the camera. The lens has 3-color correction and is T-stopped and color-matched to other Kinoptik lenses. It is priced at \$1250.

A special adapter which makes it possible for cameramen to have their prescription lenses fitted in the eyepiece assembly of the Arriflex 16 has been announced by Arriflex Corp. of America, 257 Park Ave. South, New York 10. The adapter is designed so that the prescription lens is permanently placed in a small subassembly which may be slipped on and off the finder eyepiece. A blank slip-on ring may be substituted for the prescription lens assembly to permit the camera to be used by other cameramen. The prescription lens holder is priced at \$28.00 and the blank slip-on ring is priced at \$8.00.

The 8mm Director Reflex motion-picture camera introduced by Bell & Howell, 7100 McCormick Rd., Chicago 45, features a through-the-lens or reflex electric eye to prevent the photocell from seeing and responding to light outside the area that will appear on film. The new camera also has through-the-lens viewfinding and focusing and is available in both roll-film and magazine-load models. The new camera also has a zoom lens with an electric

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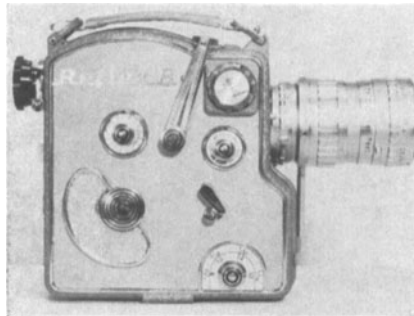
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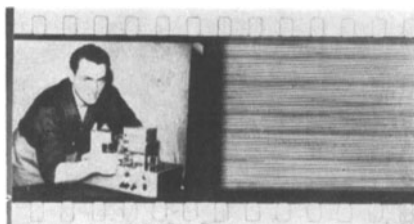
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motor to assure smooth zooming action and to enable the lens to be zoomed when the camera is not in motion as an aid toward composition or focusing. The photocell in the new camera is located behind the lens so that its field of view is limited to the area covered by the lens. A sensitive cadmium sulfide photoresistive cell is used instead of the conventional selenium photocell. Power is supplied by a tiny mercury battery. The roll-film camera (Model 434) is priced at about \$349.95. The magazine-load version (Model 444) is priced at about \$369.95.



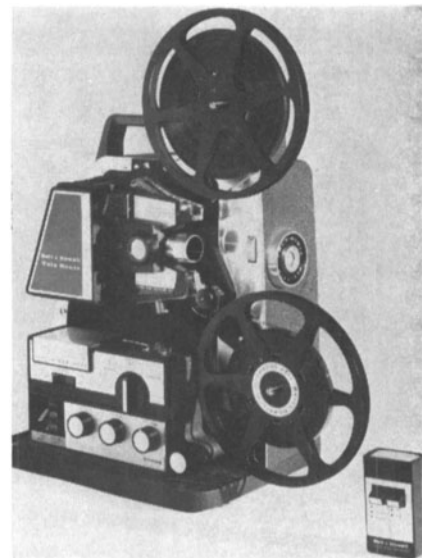
The Camex CR Dual-Reflex 8mm movie camera, announced by Karl Heitz, Inc., 480 Lexington Ave., New York 17, supplements a parallax-free through-the-lens viewing system with a behind the lens exposure meter for continuous light adjustment before and while filming. ASA ratings from 10 to 320 and film speeds from 8 to 32 frames/sec are set on a dial. The correct diaphragm opening is set by matching the needle with the center line in the reflex image. Lenses are available from 6.5mm up to 145mm; zoom lenses are available with a continuous focusing range from infinity down to 1 in. The price range is from \$259 through \$499, depending on the lens.



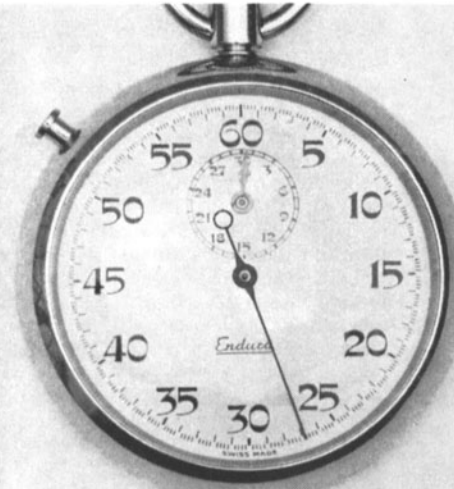
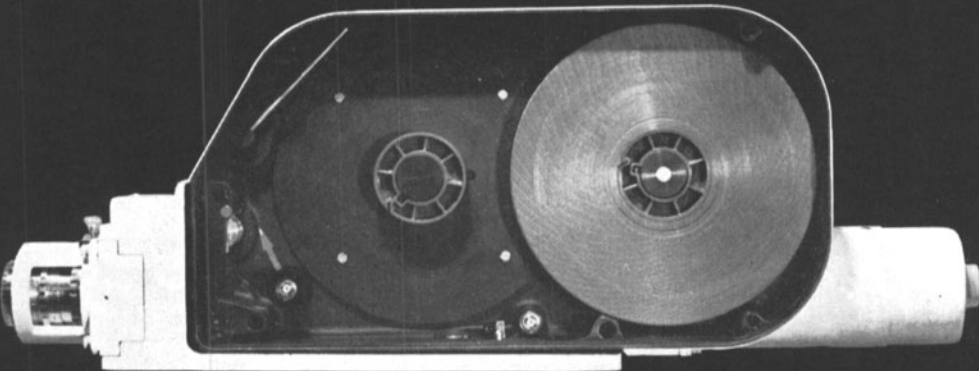
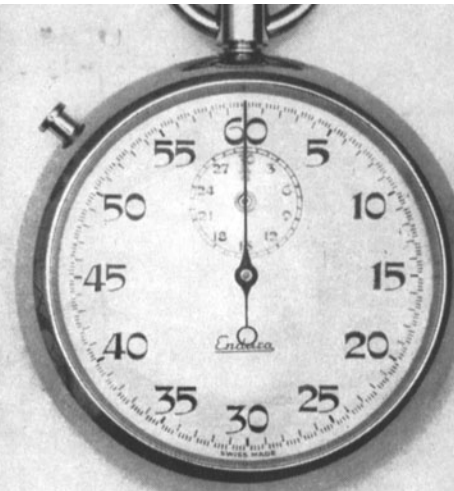
A new slidefilm projection process that uses a rotating light beam to scan an optically recorded soundtrack on a still picture filmstrip has been announced by Kalart Co., Plainville, Conn. Designated the Kalart Soundstrip Projector, the device (8½ in. high, 9 in. wide, and 15 in. long) incorporates a 35mm projector, sound scanning mechanism with audio amplifier, and controls. A loudspeaker is built into its removable cover. A Soundstrip program produced on standard 35mm motion-picture film (either color or black-and-white) contains a series of pictures arranged alternately with recorded sound messages in synchronized relationship. As each picture is projected on a screen, its related sound message is scanned and reproduced through the built-in amplifier and speaker. Each sound message can contain up to 18 sec of program time, and at the end of each message the film automatically advances to the next picture and sound

frame. A "Hold-for-Discussion" switch permits the operator to interrupt the program at the end of any recorded message to add his own remarks. A Repeat Control allows the operator to repeat a picture and its related sound message as often as he wishes by pushing a button on the projector. The projector may also be remotely controlled. The price will be under \$400.

The Cinephonic 22, an 8mm rear-view sound motion-picture projector, weighing approximately 15 lb, was introduced by Fairchild Camera and Instrument Corp., 580 Midland Ave., Yonkers, N.Y., at a meeting of the National Visual Presentation Association held in May in New York. Announcement of the new machine was made by R. G. Hennessey, General Manager of the firm's Industrial Products Division, author of "8mm Magnetic Sound Film in Audio-Visual Applications," presented at the SMPTE 89th Convention in Toronto. The new machine, designed as a portable sales aid and for educational purposes, provides a synchronous sound motion-picture presentation from 8mm magnetic film. The picture is projected in an integral 11 by 8½-in. screen and can play continuously without reload or rewind from a 200-ft capacity magazine. The complete unit is contained in a package resembling a portable typewriter. Dimensions, closed, are 12 by 12 by 8½ in.; opened, 12 by 12 by 18½ in. It will be priced in the neighborhood of \$400. A companion model with a 400-ft capacity, weighing approximately 17 lb, will also be available.



The Wireless Remote Telesonic Projector introduced by Bell & Howell, 7100 McCormick Rd., Chicago 45, is an 8mm projector for home use that can be remotely controlled from start to finish of the movie, including turning on and off the room lamp. High-frequency sound waves inaudible to the human ear are emitted from the hand-held control unit and are picked up by a receiver built into the projector which triggers the various operations. The unit has two buttons, one to start, reverse and shut off the projector, and the other to freeze the action on the screen. Projection speed can be varied from 16



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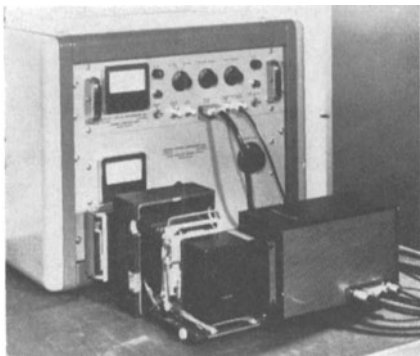
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to 24 frames/sec and a micrometer framer allows precise framing of the picture on the screen. The projector with control unit is priced at about \$299.95.



A Kerr Cell Instrumentation Camera System, Model KSC-51/A, which incorporates a trigger pulse generator in the control unit circuitry, has been announced by Electro-Optical Instruments, Inc., 2612 E. Foothill Blvd., Pasadena, Calif. An earlier model, KS-51, used an external pulse generator to initiate the shuttering action. The pulse generator of the new model permits operation from an external low voltage trigger source, as well as from an internal 60-cycle source. It has three output pulses: a 50-v pulse from a high-impedance source which can be utilized to provide time-base generation; a fixed 300-v pulse which provides Kerr-cell triggering action into a 50-ohm load; and a 100- to 300-v variable output pulse

which is available for initiating other phenomena or instrumentation.

For many applications the generator can be used to initiate shuttering action directly without the use of higher voltage trigger pulses. The 300-v trigger is said to keep triggering delay times below 100 nanoseconds, while the jitter in the Kerr-cell shuttering action is no more than 15 nanoseconds. Possible applications include plasma and shock tube studies, and hypervelocity and impact phenomena research.

The TG-100 pulse generator may be added to the system as an accessory for applications where extreme time resolution is required.

The Stereoflex, a camera developed for a Navy project to take high-speed photographs in 3-D, has been announced by Benson-Lehner Corp., 1860 Franklin St., Santa Monica, Calif., as ready for production. The camera is designed to permit slowing down of explosive action and viewing it in 3-D. Special 35mm film is used, and the camera is said to be capable of accelerating from a standing start to a film speed of 127 mi/hr in less than one second, and thereafter to hold a steady, synchronous speed. It may be used as a rotary prism camera with or without stereo.

Newly designed ionization gauges produced by Westinghouse Electronic Tube Division for the National Aeronautics and Space Administration's Goddard Space Flight Center are "intended to sniff the thin atmospheres of near space and measure

their density," according to a recent announcement. Because of a wide range of sensitivity (1×10^{-3} to 1×10^{-10} mm of mercury) the gauges are expected to be useful in gathering data at altitudes of from 70 to 450 miles where prevailing molecular densities range from 5×10^{14} molecules/cu in. to 5×10^7 molecules/cu in. Designed as self-contained variants of the Bayard-Alpert ionization gauge, the gauges are triodes whose elements are a tungsten filament drawing 1.5 amp at 4 v; an ion collector working at -30 v, and a grid working at 150 v. These elements are mounted in a glass envelope $3\frac{1}{4}$ in. long and 1 in. in diameter into which the atmosphere can be admitted by "un-stoppering" the open end of the envelope.

In use, electrons from the hot cathode are accelerated across the 150-v potential difference between cathode and grid, acquiring sufficient energy to ionize gas molecules that have entered through the open port into the area of electron bombardment. A silvered ring-like ion trap just inside the port attracts ionized particles and neutralizes their charges to prevent spurious indications that would otherwise be caused by their entry. Because of their positive charge, ions produced through electronic-molecular collision are propelled to the negatively charged ion collector and produce a direct current in the ion-collector circuit. Since the ratio of this current to the grid current is proportional to the number of electronic-molecular collisions, and to the number of gas molecules within the envelope at any moment, the ratio serves as a base quantity which is transmitted to Earth to indicate the molecular density at that point in space.

A new series of RF sweep and signal generators capable of providing up to 4 w of power has been announced by Telonic Industries, Inc., Beech Grove, Ind. Six models, designated PD-1 through PD-6, are included in the series covering the RF range from 5 to 1000 mc. A switch arrangement on each instrument enables the selection of one of four different modes of operation. The PD models employ high-power tubes to produce an output of 14 v rms into 50 ohms. The new instruments also include the Birdy-By-Pass Marker system by which beat frequencies may be added to the test signal. An external of 0.1 v may be added to the basic instrument accessories.

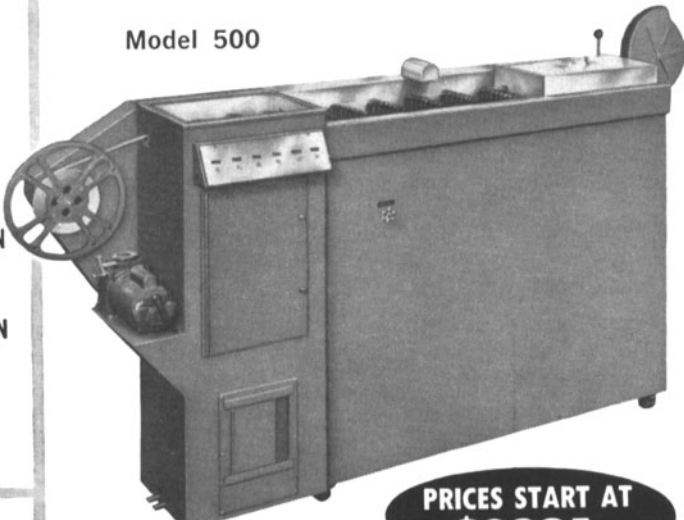
The Dynamax Power Pack, announced by Gordon Enterprises, 5362 N. Cahuenga Blvd., North Hollywood, is a nickel-cadmium battery with about six- to ten-hour capacity that can be repeatedly recharged. It is available with 12- and 24-v outputs for use with Hulcher and other cameras with similar power requirements. A dual Power Pack for use with arriflex cameras supplies either 8.5 v or 17 v, switch selected. A companion unit is the Dynamax Charger, operating on 115-v, a-c, used for overnight charging of the Power Pack.

The ColorTran Explosion-Proof Light, LCKS/64WP, designed for use in hazardous environments with PAR 64 lamps, has been announced by Natural Lighting Corp., 630 South Flower St., Burbank,

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Nomad MARK 11		The 12-lb. featherweight Mark 11, a professional double-system recorder/reproducer is completely transistorized, self-contained, and highly reliable with maximum recording qualities and operating economy. Power consumption is only 20 watts.		X											X	X	
X-400		When lightweight portability is a must the 27 lb. X-400 Type 1 is the answer! Another reason so many producers choose this machine is that it is genuinely professional, and yet, surprisingly economical!			X		X	OPTIONAL	OPTIONAL	OPTIONAL					X	X	OPTIONAL
TYPE 1		The Type 1 is a miniaturized version of the Type 5. Low power consumption and extreme portability has made this 39 lb. unit a popular selection for remote location production by leading professional motion picture studios.			X	X	X	X	X	OPTIONAL	X				X	X	OPTIONAL
TYPE 15		The X-400 Type 15 is designed for the man who wants everything in one case . . . playback amplifier, monitor speaker, footage counter and torque motors. You can be proud to have this machine represent you on any sound stage!			X		X	X	X	X	X				X	X	OPTIONAL
TYPE 5		The most popular magnetic film recorder in the world is the Type 5! With this unit and all its operational conveniences, you are definitely in the "major league." The Type 5 owner always starts his pictures with a special feeling of confidence in the realization that he has allowed no compromise in the selection of equipment.			X	X	X	X	X	X	X				X	X	OPTIONAL
MARK 1X		There is nothing on the market that compares with the remarkable Mark 1X. This unit is in a class by itself . . . with push-button remote controlled relay functions, plug-in audio elements and all the "extras" that make for flawless recording under the most adverse conditions.			X	X	X	X	X	OPTIONAL	X	X	X	X	OPTIONAL	X	X

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Calif. The light is 10-in. in diameter and weighs 12 lb. It is said to provide usable photographic light equal to a 5000-w conventional studio key light when controlled by the ColorTran Converter. It is priced at \$120.

The 40-amp Mark II Cinemaster Converter, designed to control eight 500-w PAR 64 lamps at 3400 K, has been announced by Natural Lighting Corp., 630 South Flower St., Burbank, Calif. The converter features two banks of color-coded pushbutton switches, each bank individually monitored on a Kelvin meter. A safety interlock switching is used to permit starting operation at normal lamp voltage only. The unit measures 9 by 9½ by 12 in. and weighs 50 lb. It is priced

at \$258. It is available with remote control on special order.

The Model 150 Milliampere Circuit Breaker, a product of Orbitec Corp., 512 30th St., Newport Beach, Calif., is a compact unit designed to protect transistor circuits against sudden or transient overloads. The circuit breaker is said to respond to 1-μsec transients, opening the load within 10 μsec. The trip current may be adjusted by a panel-front knob to any value between 15 and 150 ma. A "reset" button is depressed to close the circuit, but the instrument cannot be reset if an overload condition continues to exist. Accuracy is said to be ± 10%. Power may be supplied from any standard 120-v, 60-cycle source. It is priced at \$160.

Books, Booklets, Brochures

Information Retrieval and Machine Translation (in two parts), edited by Allen Kent, is Volume 3 in the series, "Advances in Documentation and Library Science," General Editor, Jesse H. Shera. Published by Interscience Publishers, Inc., 250 Fifth Ave., New York 1, Part 1, is presently available at a price of \$23. Part 2 is in press and is expected to be priced at about \$25. The emphasis in Part 1 is on machine literature searching while Part 2 deals primarily with the problems of machine translation and the search for a common machine language. The two-part work represents the distillation of the research of seventy-five experts in the field of machine searching and translation of scientific literature, from ten countries. Included in Part 1 are many useful tables with detailed data on literature searching devices, analysis of literature, literature analysis-machine translation, language pairs under investigation, subject-fields covered, and translating equipment.

A translation of the *Akusticheskii Zhurnal* (Acoustics) of the USSR Academy of Sciences is offered by the American Institute of Physics in cooperation with the National Science Foundation. Presently available or scheduled are Vol. 6, Nos. 1-4 (containing material published in the original Russian Journal in 1960) and Vol. 7, Nos. 1-4 (containing material from the original Russian Journal in 1961). Subscription rate for each volume is \$12.00 in the United States and Canada, and \$14.00 elsewhere. A brochure containing a description of the periodical and selected titles from the Table of Contents is available without charge from American Institute of Physics, 335 E. 45 St., New York 17.

IEC Publication 124: Recommendations for the Rated Impedances and Dimensions of Loudspeakers, published by the International Electrotechnical Commission (IEC), is available from the American Standards Association, Dept. PR 198, 10 E. 40 St., New York 16. It is priced at \$1.20. The IEC is the coordinating body for international standards in the fields of electricity and electronics. The publication applies

to single moving-coil (dynamic) loudspeakers of the direct radiator type. It provides a series of rated impedances of the moving coil and mounting dimensions (size and arrangement of mounting holes). The dimensional recommendations are limited to loudspeakers having cones of circular section.

The **Engineering Index for 1960** is now being compiled. Information, including the current catalog is available without charge from The Engineering Index, 29 W. 39 St., New York 18. For the 1959 Index, a staff of engineering linguists reviewed each issue of more than 1800 Engineering and Technological publications and selected therefrom and annotated more than 34,000 articles covering 249 fields of engineering. Publications from 44 countries in more than 20 languages are reviewed. Each annotation is supplied on a 3 × 5 library card. If a desired article is readily available, the Engineering Index undertakes to supply a photostat or microfilm copy of the entire article.

The first issue of **Applied Optics**, a bimonthly publication to be published by the Optical Society of America, 1155 Sixteenth St., N.W., Washington 6, D.C., is scheduled for January 1962. The magazine will be devoted to work in the areas of applied optics and closely related scientific and technical fields, such as physical, electron, ion, ultraviolet and space optics; lens design and optical formulas; plasma solid state and crystal physics. Each issue is planned to contain a leader review paper of about 10,000 words on one of the major aspects of optics or its applications, about 10 contributed technical papers of about 3000 to 5000 words, and other departments such as Letters to the Editor, Book Reviews, etc. The pre-publication annual subscription rate for OSA members is \$6.00 and for nonmembers, \$10.

An 8-page illustrated brochure describing in detail the RT-3A Heterodyne Repeater is available without charge from Adler Electronics, Inc., One LeFevre Lane, New Rochelle, N.Y. (att Mr. E. Strunin). The unit is designed for unattended TV and communications relaying in the 2-kmc frequency range.