

new products (and developments)

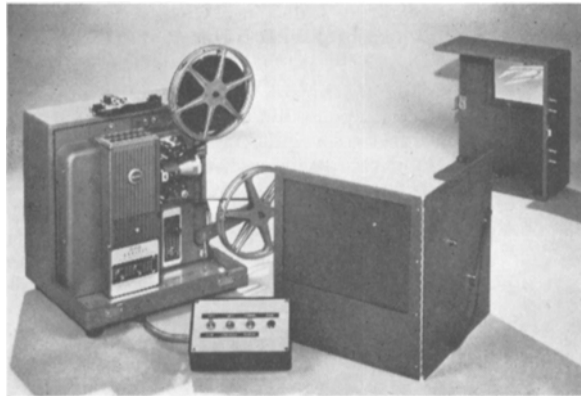
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Further information about these items can be obtained direct from the addresses given. As in the case of technical papers, the Society is not responsible for manufacturers' statements, and publication of these items does not constitute endorsement of the products or services.

Erratum: The Universal Audio Model 176 Limiting Amplifier produced by Universal Audio, Division of Studio Electronics Corp., 11922 Valerio St., North Hollywood, Calif. 91605, has an attack time adjustable from 100 to 1000 microseconds. The attack time was erroneously given as 100 to 1000 milliseconds (ms) in the New Products column (*Journal*, p. 162, Feb. 1967).

An automatic slide numbering machine with numbers from 1 to 999 and a speed of 95 slides/min has been developed by Frank Matic, P.O. Box 649, Radio City Sta., New York, N.Y. 10019. Designated Number-O-Matic, the machine has a 200-slide capacity and contains Robert's Model 50e solenoid-operated numbering unit equipped with continuous duplicating and repeat selector. The machine can also number horizontally, vertically and on both sides. The machine, available in 48, 58, 72 and 96 RPN, is priced at \$550. A model with a conveyor belt on the receiving end to collate the slides is available at a higher price.

Two new series of miniature bandpass filters, designated TCG and TCH, have been announced by Telonic Engineering, Box 277, Laguna Beach, Calif. 92652. The TCG filters are designed to operate at any center frequency from 2 to 6 GHz, with 3 dB bandwidths from 0.3% to 3.0%. They are available with 2, 3, 4, 5 or 6 sections and exhibit VSWR of 1.5:1 up to 4 GHz and 2.0:1 from 4 to 6 GHz. Prices range from \$215 to \$396. The filters in the TCH series are slightly more than 2 in. long, and are capacity-loaded, iris-coupled, TM₀₁₀-mode cavities of 0.05 dB Chebyshev design. They are very narrow band devices with 3 dB bandwidths from 0.1% to 1.0%. The price range is from \$195 to \$280.

A high-density delay line, designated Model 20B600, has been announced by Kappa Networks, Inc., 165 Roosevelt Ave., Carteret, N.J. 07008. The new delay line has a delay of $3.8 \pm 0.5 \mu\text{s}$ with a rise time of $0.1 \mu\text{s}$ at impedance of 180Ω. Pulse attenuation is under 1 dB and overall distortion is 5%. The delay line is encapsulated in foamed urethane resin and her-



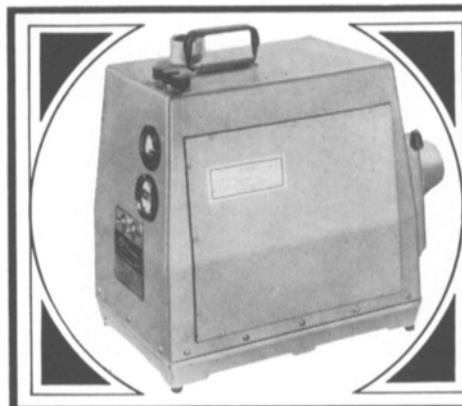
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Screen illumination for 16mm projectors approximates eight times that obtained from incandescent sources—the maximum that this narrow gauge film can withstand, and twice that obtained from the lower power enclosed arc sources.

Screen illumination for 35mm projection is comparable to low powered carbon arc lighting and with a low degree of aperture heat.

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metically sealed in a CRS case measuring 3 by 3 by $\frac{1}{2}$ in. It is priced at \$125.

The Technicolor Vidtronics process, a color tape to film transfer system which extracts color information from video tape and records it onto a film negative, has been announced by Technicolor Corp. of America, 6311 Romaine St., Hollywood, Calif. 90038. The transfer system basically involves breaking a video tape down into its red, green and blue images and recording them separately. The images are specially enhanced electronically before processing. Technicolor laboratories then register the separations and the soundtrack is then added to produce the final composite by integrating the components into release prints. The process can be used to transfer video tape to 35mm, 16mm, 8mm and super 8 color film. 8mm and super 8 film is used in Technicolor's cartridge-loading portable projectors.

The process is said to produce films of network broadcast quality. However, a print produced by this process is not suitable for theater exhibition because of the limitations of the NTSC standards for color television broadcasting, the announcement stated.

Prints made by this process require about five to seven working days for completion from the time the tape is received at the firm's Vidtronics laboratories.

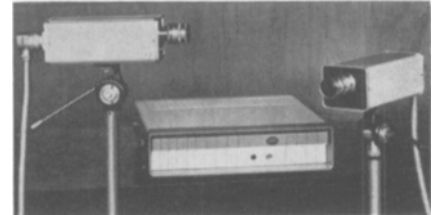
A television camera tube developed at Bell Telephone Laboratories, Murray Hill, N.J. 07971, has a new type of target structure consisting of a silicon wafer, the size of a nickel, containing more than 250,000 silicon photodiodes in an area less than $\frac{1}{2}$ in. square. The target is fabricated using techniques identical to those used in making silicon integrated circuits. In making the target structure, p-type islands are diffused into an n-type silicon substrate. The substrate is isolated from the scanning beam by a silicon dioxide coating. A gold overlay on each p-type island increases the effective beam landing area of each diode. Ohmic contact to the substrate is provided by a small region of heavily doped n⁺ silicon coated with a gold contact. Target structures can be made from silicon wafers that are 0.8 in. in diameter and about 0.001 in. thick.

The new tube, like other television camera tubes, converts an optical image into a pattern of stored electrical charges on the target structure. An advantage of the silicon target is that its performance is not degraded or modified by exposure to bright light sources or by electron beam bombardment. The new tube is the same size as a conventional vidicon, a glass cylinder about 1 in. in diameter and 7 in. long. Standard tube fabrication techniques, including a high-temperature bake, can be used in fabricating the new tube.

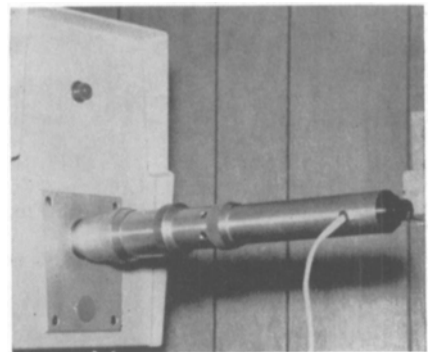
A closed-circuit video-tape recorder designed for use in international communications has been announced by Ampex Corp., 2201 Lunt Ave., Elk Grove Village, Ill. 60007. The new recorder, designated VR-7003, records and plays back at the 625-line standard used in Europe, England, and elsewhere, and also at the 525-line standard used principally in the United

States and Japan. A single switch allows selection of either line standard. Thus, material recorded, for example, in London or Paris, can be played back in New York on the VR-7003, and vice versa. The machine can record about 60 min of programming on 1-in. magnetic tape for immediate and repeated viewing on television receivers. It is priced at \$3,350.

The PK-315 camera designed for use in educational television, has been introduced by Radio Corp. of America. The camera has a 5-in. viewfinder and solid state circuitry. It is priced in the \$3,800 price range.



A dual-camera 1029-line all solid-state closed-circuit television system has been announced by Granger Associates, 1601 California Ave., Palo Alto, Calif. 94304. Designed for such special applications as remote reading of gages and controls, remote quality control in atomic assembly, microscope projection in biological studies, etc., the system consists of two cameras, two monitors and a control unit. The control unit is designed to power one camera or two cameras. It fits into 3 $\frac{1}{2}$ in. of rack space or can be mounted in its own desk console. The unit processes the video signal from the camera or cameras, supplies synchronizing power for camera and monitor and supplies dc power for the total system. The 1029-line system is said to give the optimum combination of vertical and horizontal resolution. However, if a change is desired, plug-in circuit cards are available to convert the sync generator to any of 12 line rates from 525 to 1225 lines. Price of the system (two monitors, two cameras and one control unit) is \$7,996. Price does not include lenses.



Diascope, Model 252, an optical device for use with vidicon cameras, has been announced by Zolomatics Corp., 5875 Melrose Ave., Hollywood, Calif. 90038. The device is an alignment gage designed to be fitted onto the camera in place of the lens to project a built-in test pattern onto the vidicon and produce an image of the test pattern on the monitor. It is now avail-

able with a power-pack where continuous alignment is required. The image is an exact replica of the original pattern if the surface of the vidicon is in optical axis and at a distance of 0.69 in. from the front of the "C" mount of the camera. Otherwise the camera and the vidicon have to be realigned optically, mechanically and electronically until the correct image appears on the monitor. The device is 12 in. long and has a maximum diameter of 1.8 in. For battery operation the price is \$495, and for ac operation, \$620.

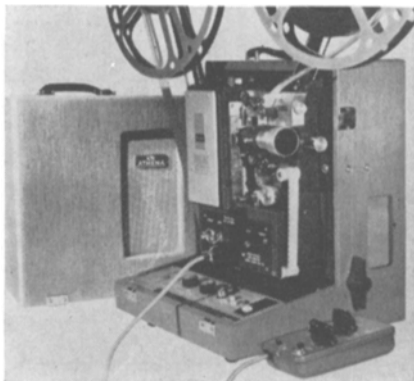
A simplified passive reflector for microwave broadcasting has been developed by Andrews Towers, Inc., 1420 Layton Ave., Forth Worth, Tex. 76117. The reflector consists of two interchangeable halves that as a whole make up an octagonal shape. The octagonal can be converted to a paraboloid by the turn of a screw. The reflector is mounted on a ball and joint that can be locked into place with the foot, hand or elbow after it is mounted on the tower. The ball joint permits the reflector to be easily elevated or panned. The reflector is easily assembled and most parts on a given size of reflector are interchangeable. All plates are interchangeable on all the reflectors. Sizes range from 6 ft and 300-lb weight to 12 ft and 740-lb weight. The price range is from \$318 to \$850.



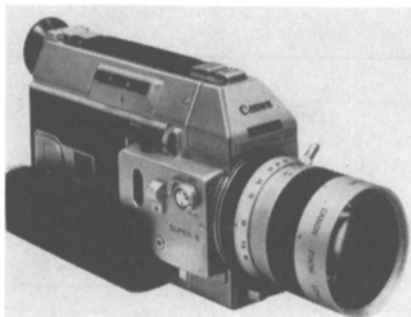
The Ampex AG-500 Series of audio recorder/reproducers has been announced by Ampex Corp., 401 Broadway, Redwood City, Calif. 94063. An advanced generation of the Ampex PR-10 Series, the new series has several new features, including solid-state electronics, a die-cast top plate to eliminate flexing problems, a drive motor designed for long running time between lubrications and an open-style motor fly-wheel for a cool operating drive motor. Price range of the new series is from \$1,202 to \$1,524.

Electrodyne 709L, announced by Electrodyne Corp., 10747 Chandler Blvd., North Hollywood, Calif., is an audio input channel, with 71 dB of gain, for use in control consoles for recording, broadcasting and sound reinforcement systems. The unit incorporates a low-noise microphone pre-amplifier, straight line or rotary attenuator, low- and high-frequency equalizers, isolated echo, cue and program outputs, using integrated circuit amplifiers in a single plug-in module. An input switch provides for selection of line or microphone input. Two additional switch positions are incorporated to reduce microphone pre-amplifier gain by 10 dB and 20 dB, respectively, to accommodate various micro-

phone output levels. An isolated echo send output with independent level control is provided. A coaxially mounted switch selects echo send output from before the attenuator or after the program amplifier. Low-frequency equalization points are selectable at 40 or 100 Hz. High-frequency equalization points are selectable at 1.5, 3, 5, or 10 kHz. The 1.5 kHz position is included to permit control over the critical range required for dialogue and vocal enhancement. It is priced at \$465.



A new 16mm stop-motion sound projector called the Athena-TV has been announced by L-W Photo, Inc., 15451 Cabrito Rd., Van Nuys, Calif. 91406. Basically the Athena-TV is the Eastman Pageant projector re-engineered for flickerless operation and TV application, the announcement stated. The machine is designed to project a wide range of frame rates (from 1 to 24 frame/s) and to permit unlimited hold time on stills. Operation is said to be compatible at all speeds with the 60-scan rate of TV broadcast with no visible shutter bar on the television screen. Features include instantaneous stop, start and change of direction, forward or reverse; remote control of all operating speeds and directions; solid-state audio system; frame-by-frame projection on command by push-button control; and heavy-duty reel arms to handle reel sizes from 100 to 2,300 ft at all speeds. It is priced at under \$2,000.



The Canon Auto Zoom super 8 movie camera, Model 87C, has been announced by Bell & Howell, 7100 McCormick Rd., Chicago, Ill. 60645. The camera has a fast $f/1.4$ lens with an electric zoom with a range of 7.5 to 60mm. The zoom can be motor-driven at a regulated speed throughout the entire zooming range, or it can be operated manually by a lever on the lens barrel. An exposure meter is located inside the lens and incoming light is reflected by means of a mirror. Exposure can



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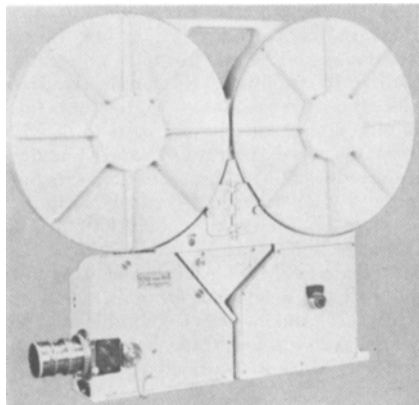
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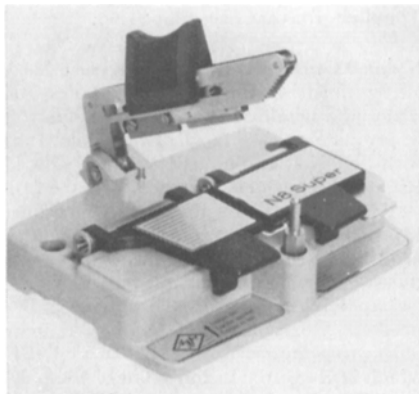
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be either automatic or manual. The camera is priced at \$369.95.

A new rotary-type attenuator spanning 100 dB in 10-dB steps has been announced by Telonic Instruments, 60 N. First Ave., Beech Grove, Ind. 46107. Designated Model 8008, the unit features individual attenuation pads consisting of resistive Pi networks. Each pad is positioned in a rotor assembly to maintain 50-ohm transmission line characteristics throughout the attenuator. The new model is designed to operate over a frequency range of dc to 1000 MHz with insertion loss of about 0.1 dB. Accuracy is said to be 2% at 30 MHz, 3% at 400 MHz and 5% at 1 GHz. Price is \$140.



A self-regulating, film-tensioning mechanism, for which a patent has recently been granted, has been announced by Photo-Kinetics, Inc., 1624 Stillwell Ave., Bronx, N.Y. 10461. The mechanism is designed for use on high-speed cameras to maintain constant tension on the film by regulating the acceleration and deceleration of the feed spool and the take-up spool. The mechanism includes a braking system to provide a positive stop-start action without film breakage. The mechanism has been incorporated into the "Nova" 1200-ft camera. Together with the servo loop control it is used to provide a constant speed within 2% at all frame rates. The magazine and control box are priced at \$6,800.



The Agfa N8 Super Splicer, an all-metal splicer for super 8 film, has been announced by Agfa-Gevaert, Inc., 275 North St., Teterboro, N.J. 07608. The splicer is designed to bevel film ends automatically so that the ends can be joined without making a thick splice. The splicer is 5 in. wide, 5 in. deep and 3 in. high. The bedplate

of the unit has two holes so that it can be screwed to a splicing or work bench. It is priced at \$19.95.

A 16mm Ektachrome continuous film processor designated the F.E. 50 has been announced by Filmline Corp., Milford, Conn. The processor, designed especially for use at television stations and industrial installations, processes color emulsions at a rate of 50 ft/min. Constructed of stainless steel, the processor is equipped with the Filmline friction drive with built-in overdrive. Features include variable speed control, feed-in elevator for continuous processing, stainless-steel air squeegee of the Micro-Ventur type and impingement dry-box for safe, even drying. The F.E. 50 is priced at \$22,500.

Agfachrome CK17 super 8 reversal color film has been announced by Agfa-Gevaert, Inc., 275 North St., Teterboro, N.J. 07608. A type A film, CK17 is intended for use with 3400 K floodlamps and Sun Guns, but it can also be used with daylight. It has an exposure index of ASA 40 when used with recommended lamps and ASA 25 with daylight when used with a No. 85 conversion filter. It is priced at \$4.85 for a double 8mm 25-ft length.

Availability of 16mm Eastman Color Negative Film, Type 7251, has been announced by Eastman Kodak Co. The film has been on the market for several years as a special-order item (Type SO-216). The only difference is the designation.

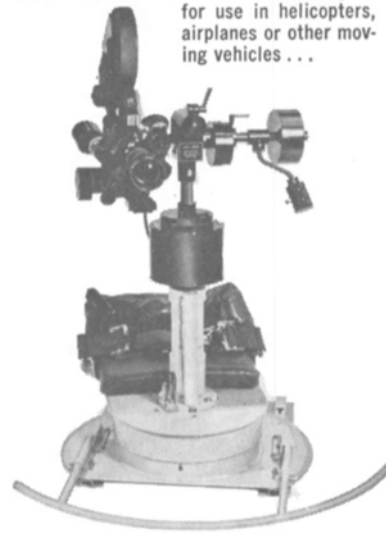


A lightweight Cine King and Cine Queen Conversion Kit has been introduced by ColorTran Industries, Inc., 1015 Chestnut St., Burbank, Calif. 91502. The kit consists of an adapter and a specular or diffuse intensifier to increase the intensity and efficiency of the Cine King and Cine Queen light fixtures (using boosted or non-boosted PAR 64 lamps). The adapter clips to the fixture and clamps to the intensifier. The kit (adapter and intensifier) is priced at \$66.50.

The Flex Mobilite Model QB-1 Movie Lite announced by Flex Electric Products, Inc., 39-08 24th St., Long Island City, N.Y. 11101, is designed for compact size, light weight and cool operation. The 10-oz light uses a 650-W quartz bromine lamp and is equipped with a set of three keys to

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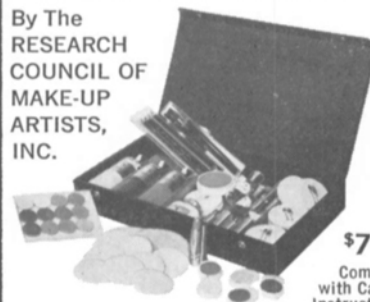
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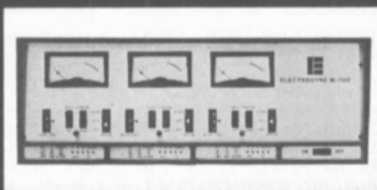
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Cable Address: "ELECTRODYNE" North Hollywood, Calif.

fit most super 8 cameras. Each key automatically swings a built-in type A filter out of the light path when the light is mounted onto the camera. The unit is priced at \$15.95.

Bir-Vac RG1 equipment, announced by Bir-Vac Ltd., Swindon Rd., Cheltenham, Gloucestershire, England, uses an electron gun in high-vacuum evaporation to deposit films of a wide range of materials onto substrates. According to the announcement, with the exception of carbon, almost every known material can be evaporated by this equipment, including many which cannot be melted by a resistance element or boat. Several different materials can be deposited in sequence in the same vacuum since the turntable is able to accommodate six crucibles. The equipment can be supplied to suit any required voltage. The electron gun alone, for incorporating into an existing vacuum chamber is priced at about \$1,960.

Vibration testing equipment designed for compactness and economy is manufactured by Environmental Equipments Ltd., Denton Rd., Wokingham, Berkshire, Eng. The equipment is contained in two basic units. One unit comprises the basic vibration exciter and its accelerometer, a reaction mass and a cooling fan. The other consists of a power amplifier, an oscillator, an accelerometer amplifier of high input impedance and a "g" meter. Solid-state circuitry is used throughout. The system is available in four versions, providing thrusts of up to 1, 3, 6 and 18 kg, priced at \$924, \$1,478, \$1,848 and \$2,218, respectively.

A new VSWR meter designated the TSM-1 Rho-Meter has been introduced by Telonic Engineering Co., Box 277, Laguna Beach, Calif. The instrument is designed for use with VSWR detection devices and also with hybrids and directional couplers. It provides a direct readout of VSWR and contains a built-in preamplifier for use with oscilloscopes or similar devices. It is designed to measure VSWR from 1.02:1 to 4:1 with an accuracy of 2.0%. The unit weighs 5 lb and measures 5 by 8 in. at the front panel. It is priced at \$395.

Three new products have been announced by General Radio Co., West Concord, Mass. 01781. The Type 1026-A Standard-Signal Generator features a frequency range of 9.5 to 500 MHz, a calibrated output range from 0.1 μ V (to 5 V fully modulated) behind 50 ohm, $\frac{1}{4}$ % frequency accuracy with single-dial control, phase-lock capability and automatic level control. It is priced at \$5,900.

The Type 1160-P2 Sweep and Marker Generator has been developed for use with the firm's frequency synthesizers. The sweeper supplies a control voltage for the continuously adjustable decade featured by the synthesizers and also supplies center-frequency and side markers for visual monitoring of the frequencies generated. Time for a one-way sweep of up to 10 continuous-decade divisions is 0.02 to 60 s in nine steps, the announcement stated. Markers can be set from 1 to 5.9 continuous-decade divi-

sions in 0.1-division steps. The device is priced at \$495.

The Type 1313-A Oscillator is designed to cover the frequency range from 10 Hz to 50 kHz with both sine- and square-wave outputs. Major feature of the new oscillator is that its entire frequency range is covered in one turn of the frequency dial, with no handswitching required. The oscillator is priced at \$325.

A video waveform monitor, called Mark 21, has been developed by Ball Brothers Research Corp., P.O. Box 1062, Boulder, Colo. 80302. A flat-face, rectangular, 5-in. CRT with an edge-lit IEEE-type graticule is used to provide a bright trace on a large viewing area. Silicon semiconductors are used throughout the electronic circuitry. Since power consumption is low in the monitor's solid-state circuits, convection cooling is employed. No fan is required. Electronically regulated high- and low-voltage power supplies are used to provide constant trace brightness and low-drift amplitude calibrations. Features include three switch-selected vertical amplifier response characteristics: Flat to 5 MHz; IEEE-rolloff; and Chroma-High-pass peaked at 3.58 MHz. An internal amplitude calibrator is provided for gain measurements; 2H and 2V selections and expanded sweeps are switch-selected by a single control. The Mark 21 is priced at \$995.

A microminiature metal film resistor, called the UC resistor, has been announced by IRC, Inc., 401 N. Broad St., Philadelphia, Pa. 19108. The new metal film unit is 0.125 in. long, 0.047 in. in diameter and has #30 AWG (0.010 in.) gold-plated dumet leads. Resistance values range from 50 ohm to 10K ohm with initial tolerances of ± 1 , ± 2 or ± 5 %. The resistors are priced at 67 cents each in lots of 1,000.

The Shure Reactance Slide Rule, developed in 1943, has been re-issued by Shure Brothers, Inc., 222 Hartrey Ave., Evanston, Ill. 60204. The slide rule is used for solving resonant frequency capacitive reactance, inductive reactance, coil "Q" and dissipation factor problems that cover a frequency range from 5 Hz to 10,000 MHz. The slide rules are priced at \$1.00.

Nylon 11 powder, used to provide a hard, glossy finish to most metal surfaces and many nonmetallic surfaces, such as glass, is a product of M & T Chemicals Inc., Rahway, N.J. Designated M&T Nylon 11 Rilsan, the powders are used to make protective coatings on machines, furniture, equipments, etc., and can also be used as an acoustical sound dampener on large theatrical curtains. The principal method for applying Nylon is the fluidized bed process. This consists of heating a metal object to a temperature of 375 F to 400 F, which is above the fusion point of the polymer, then moving it to a fluidized bed of polymer powder. Following immersion for a few seconds, when the polymer particles fuse and adhere to the surface, the product is removed, and transferred to a post-curing oven where the plastic continues to fuse and form a coating. Other application methods include flame spraying and electrostatic spraying.