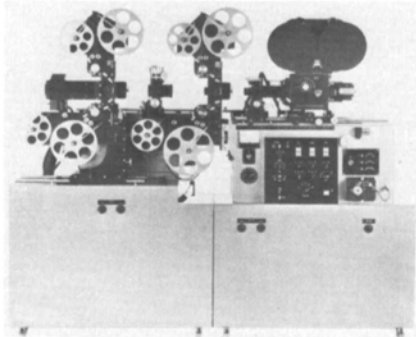


# New Products & Developments

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.



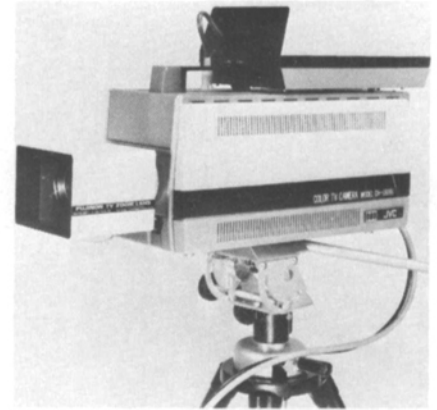
Special effects printers, Models 6211A (aerial image); 6212A (optical); and 6213C (automatic additive color special effects optical printer),

have been announced by Bell & Howell, 7100 McCormick Rd., Chicago, IL 60645. The 6211A (shown above) is designed for either 35mm or 16mm or a combination of both for color or black-and-white. The 6212A constitutes the primary base module of the 6211A. The aerial image techniques are often faster and more convenient; however, it is reported that almost all of the same effects can be accomplished on the 6212A with proper use of the bi-pack technique on the projector and in the camera. The 6213C is designed for the rapid printing of color films. Equipped with the Model "C" Automatic Additive Color Light Source, scene-to-scene color balance, density changes and operation of the dissolve mechanism is automatically accomplished with the printer running at speeds up to 640 frames/s.

Features common to all three models include a patented electronic drive system using electronically controlled 200-pole stepping motors. Each motor is mounted directly to the camera and projector heads to drive the respective cam and film movements by a direct belt without the use of gear boxes, solenoids, clutches or gear

shifts thus eliminating vibration and backlash. Other features include a skip-frame device having electronic controls using a photo-diode mechanism; the Acme Model 6 Process Camera with dual cam for 35mm and 16mm movements; and 1000-ft camera magazines for 35mm and 1200-ft for 16mm.

A basic printer is priced at \$60,000. Prices range up to \$100,000 depending on the accessories included.



The NU-1800U three-tube color TV camera has been announced by JVC Industries, Inc., 58-75 Queens Midtown Expwy., Maspeth, NY 11378. Designed for use mainly by industrial and educational audiovisual departments as well as cable TV companies, the camera combines the three-tube system with dichroic-mirror color-separating optics. The SNR is 46 dB at  $f/2.8$  with illumination of 250 fc. A +6 dB gain switch is used to double sensitivity for low-light conditions. Tubes with electrostatic focus and electromagnetic deflection ( $\frac{7}{8}$ -in) are employed and key circuits are on replaceable plug-in modules. A built-in color bar generator allows optimal adjustment by means of a color TV monitor. Color balance can be adjusted by checking the reference indicator in the viewfinder. Color temperature compensation for 3200 K or 6000 K can be accomplished by flipping a switch on the camera control panel.

The camera is fitted with an  $f/1.8$  Fujinon 12.5-75mm (6X zoom) lens with manual or automatic aperture control. C-mount lenses in the 1-in or  $\frac{7}{8}$ -in tube formats can be used interchangeably. The unit is  $7\frac{7}{16}$  in wide,  $14\frac{1}{8}$  in high and  $22\frac{1}{16}$  in long (183 mm  $\times$  359 mm  $\times$  583 mm). Power consumption is 36.5 W from an input of 120 V ac, 60 Hz. The price of \$5995 includes the camera head, viewfinder and 6:1 zoom lens.



The Tele-Pat Model VI Diascope, an optical device for aligning vidicon cameras has been announced by Tele-Measurements Inc., 145 Main Ave., Clifton, NJ 07014. The unit, which is fitted onto the camera in place of the lens projects a test pattern on the photosensitive surface of the vidicon to produce an image of the

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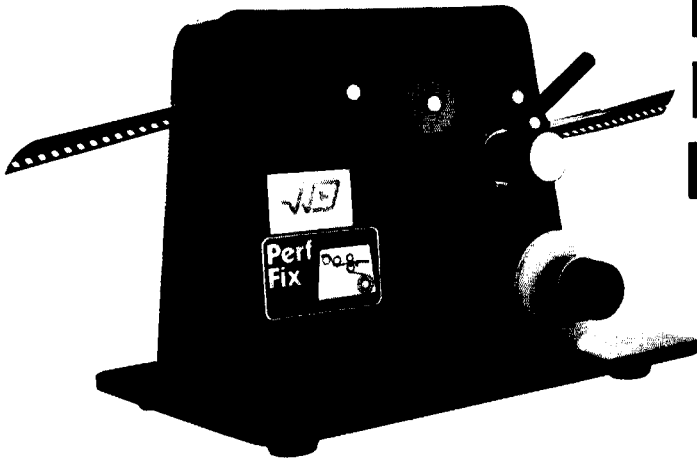
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### Film Labs

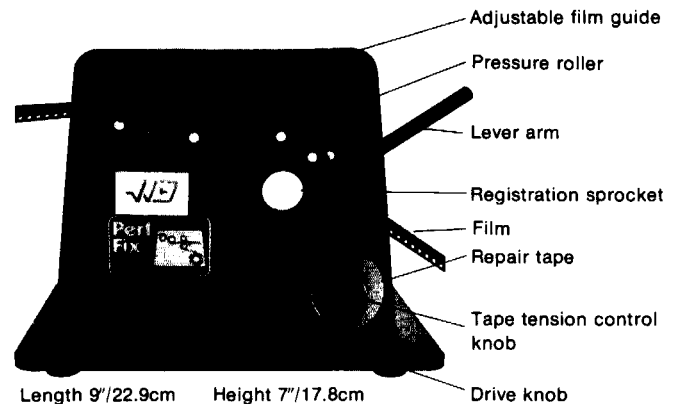
Torn perforations are the nemesis of any lab operation. With the Perf-Fix repair system, repairs are quick and simple. The Perf-Fix repair tape is available in clear or opaque rolls for standard film (prints) and a special negative tape designed for interneg and originals. 35mm or 16mm. Your customers are gonna love you.



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- ( ) 16mm repair tape, 65' roll, ( ) Opaque, \$4.00; ( ) Clear, \$4.00/; ( ) Negative \$5.00/
  - ( ) 35mm repair tape, 65' roll, ( ) Opaque, \$6.50/; ( ) Clear, \$6.50/; ( ) Negative \$7.50/

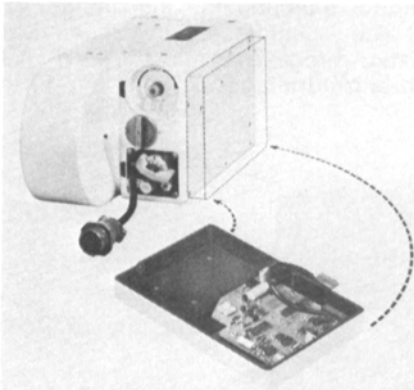
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pattern on the monitor. It contains its own light source together with a rheostat that permits adjusting the light for ambient room conditions. An exact replica of the test pattern being used appears, provided the surface of the vidicon is in optical axis and at a distance of 69 in from the front of the "C" mount of the camera. A carrying case and a variety of slides for making different electronic and optical checks of the camera are available. Price of the Tele-Pat VI Diascope is \$535. Test slides are \$40 each and the carrying case is priced at \$37.50.



The Photo-Sonics 35mm-4ML camera has been improved by the addition of synchronous phase lock and/or remote speed select "add-on" module for the Photo-Sonics 35mm 4ML camera, announced by Instrumentation Marketing Corp., 820 South Mariposa St., Burbank, CA 91506. The 4ML camera is a medium-high-

speed camera with continuously variable speeds from 10 to 200 frames/s. A sensor in the camera simultaneously permits synchronization and out-of-phase modes between cameras; e.g. two cameras running at the same speed can also be operated 180° out-of-phase with each other. When three cameras with 140° shutters are phased 120° from each other an event can be continuously recorded. The module provides several options in controlling one or more cameras. It can be used for phasing the shutter from an external pulse to an event that simultaneously makes the camera run synchronous to the input pulse. The shutter correlation pulse in a camera can be used as an input pulse to other 35-4ML cameras equipped with this module capable of making them run synchronous to the master camera. Price of the 35-4ML camera with 400-ft magazine and phase lock electronics is \$12,375.

The new Universal Model Steadicam camera stabilizing system has been announced by Cinema Products Corp., 2037 Granville Ave., Los Angeles, CA 90025. The new system allows easy removal of the camera from the system and permits the use of one Steadicam system interchangeably with either a handheld 16mm or 35mm motion-picture camera or a handheld video camera. (The Steadicam-35, a stabilized 35mm motion-picture camera incorporating the Brown Stabilizer, was reported in the June 1976 issue of the *Journal* (p. 438).)

The basic features of the Steadicam system remain unchanged. The complete system consists of a body brace with a support arm attached to the body brace at one end and, through a free-floating gimbal, to the camera system at the

other end. An articulated support arm parallels the operator's arm in any position and almost completely counteracts the weight of the camera system with a carefully calibrated spring force.

The flat, sled-like lower portion of the camera assembly contains all the electronics for the



video viewfinder and the battery pack powering both the camera and the viewfinder system. Two vertical members which support the camera mounting platform are attached to the sled.

The Universal Model configuration makes it possible to remove the camera from the platform and to use it independent of the Steadicam system, handheld or on a tripod. It also makes it possible to mount the camera on a tripod adjacent to the sled, drawing power from the sled system and using the 3-in monitor as an added video-assisted viewfinder. Prices for the new Universal Model Steadicam without the camera, lens and accessories begin at about \$15,000. Cameras presently available for use with the Universal Model Steadicam include the CP-modified Arri IIC 35mm camera, the CP 16R reflex 16mm camera (equipped with Cinevid) and RCA's TK-76 color video camera. A number of accessories are also available.

A 400-ft magazine adapter designed to increase the capacity and versatility of the Canon Scoopic 16M and 16MS cameras has been announced by the Professional Motion Picture Products Division of Canon U.S.A., 10 Nevada Dr., Lake Success, NY 11040. Designed to attach to the top of either camera, the new adapter permits snap-on, snap-off use of either the Cinema Products 400-ft Lexan™ magazine or a standard 400-ft Mitchell magazine. Power is supplied by the camera's own battery which can run four 400-ft magazines through the camera on a full charge.

In operation the Scoopic's battery cover and battery are removed and the 400-ft adapter is fastened onto the top of the camera and locked in place with a single screw. The battery is placed inside the adapter and film is fed through an opening in the battery compartment into the camera mechanism and back out to the magazine. A separate motor within the adapter powers the magazine, eliminating loading of the camera's drive system. Footage is read on a resettable counter on the side of the adapter. The adapter can be easily removed and the battery replaced in the camera in case only a 100-ft capacity is needed.

The Scoopic MS is factory-equipped for use with the 400-ft adapter; however, the Scoopic

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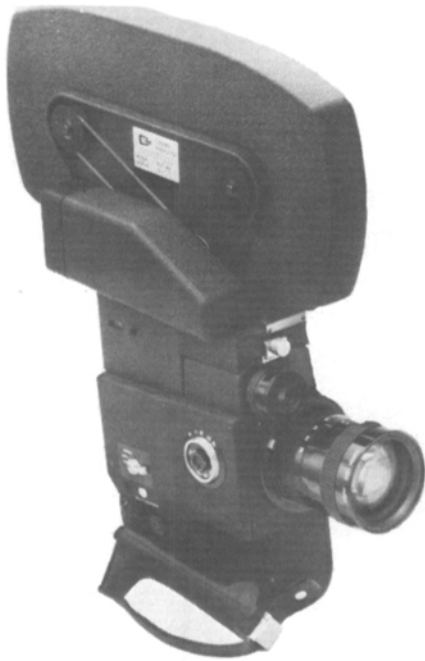
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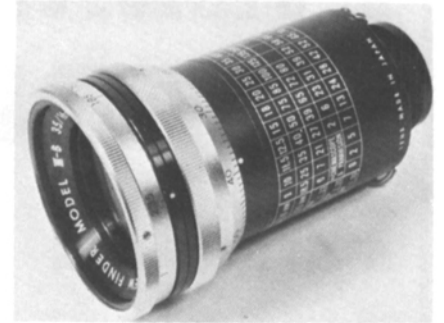
16M must be factory-modified to provide a new film path between the camera and the magazine. Price of the Scoopic 16M factory modification is \$140. Price of the 400-ft adapter is \$470.

A low-light super-8 sound movie camera which combines a 6.5:1 zoom range with macro focusing capability has been introduced by Bell & Howell/Mamiya Co., 7100 McCormick Rd., Chicago, IL 60645. Other features include an



ultra-fast Bell & Howell  $f/1.2$  lens; through-the-lens automatic electric-eye exposure control; a microphone on/off switch for remote camera control; two microphone input jacks for simultaneously recording and mixing sound from two

sources; and single-frame exposure capability for shooting one frame at a time. Price of the camera, designated the Bell & Howell Filmosonic Model 1237/XL, is \$499.95.

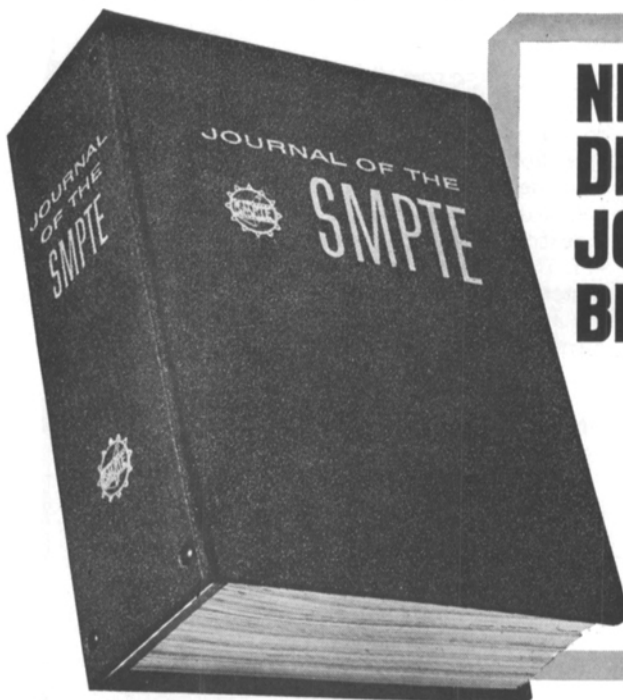


A new model of the IIBB 35/16mm Director's Zoom Finder has been announced by Alan Gordon Enterprises Inc., 5362 North Cahuenga Blvd., North Hollywood, CA 91601. The new finder has been recalibrated to include all wide screen formats and film ratios from 1:1.33 (Academy), Safe Action TV and other formats including Panavision and CinemaScope. The finder also has a new easy-to-read scale on the barrel which simplifies the selection of lenses in the various formats. The finder can show what the camera reveals through its available lenses and can aid in selecting the best composition by determining what focal length lens should be used. Price of the Model IIBB is \$149.50.



Four new fluid heads designed specifically for Cine/ENG cameras have been announced by Quick-Set, Inc., 3650 Woodhead Dr., Northbrook, IL 60062. Weight capacities of the four are: Samson Mini, 20 lb; Samson Junior, 30 lb; Hercules Hydro, 50 lb; and Hercules Fluid Cam, 50 lb. All four heads feature compact, light-weight design, a built-in level, 360° pan range, and a choice of Pro Jr., ball level, or geared column bases. Except for the Samson Mini, each head has separate pan and tilt tension controls. The Hercules Hydro has a spring-loaded tilt action to counterbalance uneven loads. All four have dual handle operation. Optional accessories include a quick-on camera plate mount (included with the Hercules Fluid-Cam at no extra charge) and a second telescoping control arm. Prices are: for the Samson Mini, \$450; Samson Junior, \$595; Hercules Hydro, \$850; Hercules Fluid-Cam, \$1650.

A console version of the BCN-format 1-in broadcast videotape recorder, designated the IVC-8050, has been announced by International Video Corp., 990 Almanor Ave., Sunnyvale, CA 94086. The videotape recorders were produced



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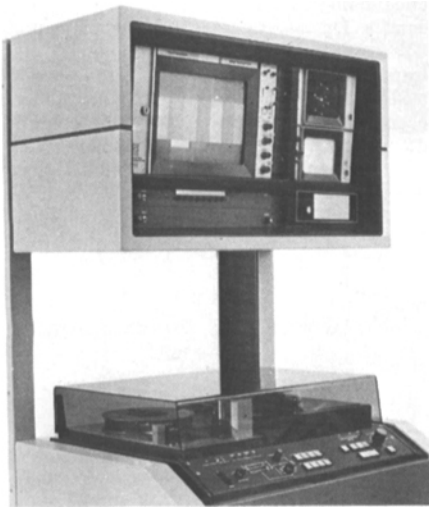
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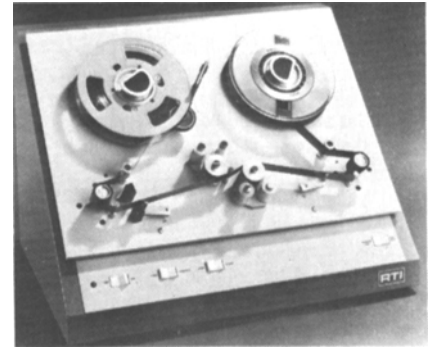
by the Robert Bosch organization, German developer of the BCN concept who had granted IVC manufacturing and marketing rights to the format. IVC has restyled the 8050 console and has incorporated somewhat less expensive digital timebase correctors not available in the German Version.

The IVC-8050 has a segmented recording format that includes four longitudinal tracks, a control track and three audio tracks, two of which are switchable from line level to microphone level. The third track, although full fidelity, is intended primarily for cue or address recording. All three audio tracks and video can be edited simultaneously or individually. The combination of 1-in tape and a speed of 9.65 in/s is said to result in significant tape economies.

The recorder holds reels up to 10½ in in diameter for a playing time of up to 96 min. Insert and assemble editing with preview capability and a 300 in/s shuttle are standard. The IVC-8050 includes the CVS-520 digital timebase corrector which can process all color signals. The price is \$60,500. Also available is the IVC-8050A with the CVS-518 digital timebase corrector which can process only direct color. The price is \$57,000.

The Eigen Color Disc Recorder has been announced by Eigen, P.O. Box 1027, Grass Valley, CA 95945. Offering low cost and easily replaceable videodiscs for special effects and sports work in cassette form the Eigen disc's flexibility is said to eliminate "crashing." The unit is compact and portable making remote setups easy and fast. Off-line editing with the Eigen disc recorder can be accomplished faster than with conventional tape recorders, according to the announcement. It offers easy location of precise edit points with the ability to crawl forward or reverse. With the SUN® system, SMPTE time codes can be recorded on the disc, giving the operator the option of viewing them in the picture or switching them out. Post production effects such as freeze-frame, slow-motion, time-lapse and animation become economically feasible and within training expectations of helical level studios, the announcement stated. The recorder can be tied into automatic editing systems or can insert freeze-frame on its own with the "Memory-Cue" feature. The Eigen recorder is applicable to electronic newsgathering operations making it possible for any tape or film brought back to the station to be dubbed to the disc for slow-motion, freeze-frame and

other effects. Animation effects can be added in video for commercials, titles, etc. Price of the basic Eigen color unit Model 12 is \$15,000.



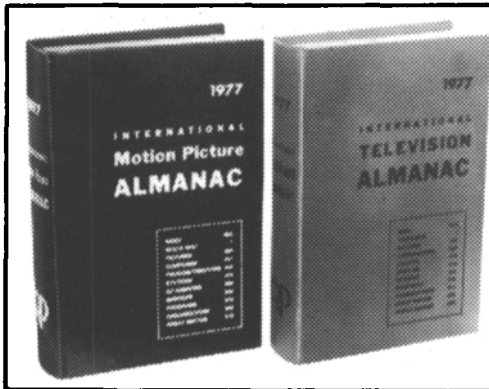
The RETEC videotape conditioner announced by Research Technology Inc. (RTI) 8260 Elmwood Ave., Skokie, IL 60076, is said to reduce tape dropouts by as much as 70% and to virtually eliminate head clogging. The machine is designed to burnish and polish the oxide surface and to remove dirt, chips and loose particles. Features include straight-line threading and automatic shutoff at the end of the conditioning cycle. The machine can condition a 10½-in reel of tape in less than 4 min without solvents and without harming the recorded program. Available in a variety of formats designed to treat tape 1.5 or 1.0 mils thick and ½, 1 or 2 in wide, the RETEC is priced at \$4250.

A miniaturized high-speed analog to digital converter for digital television and radar applications has been announced by Micro Consul-

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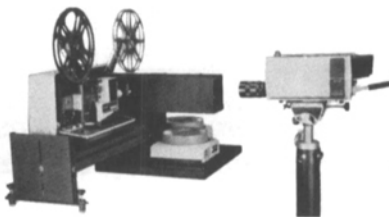
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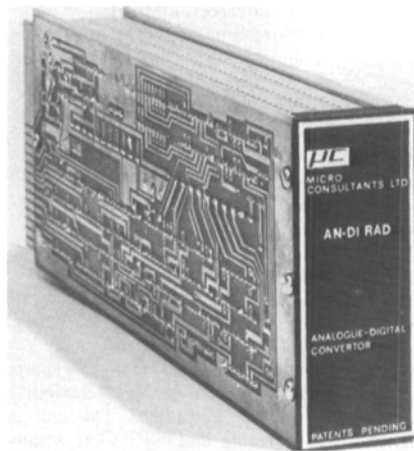
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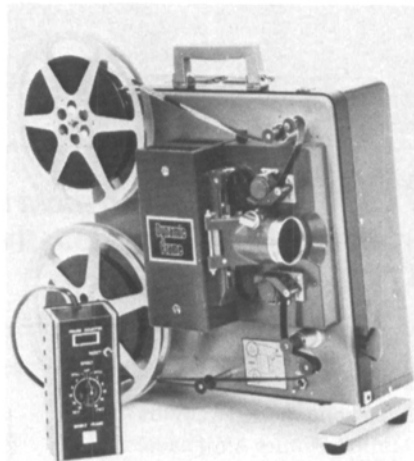
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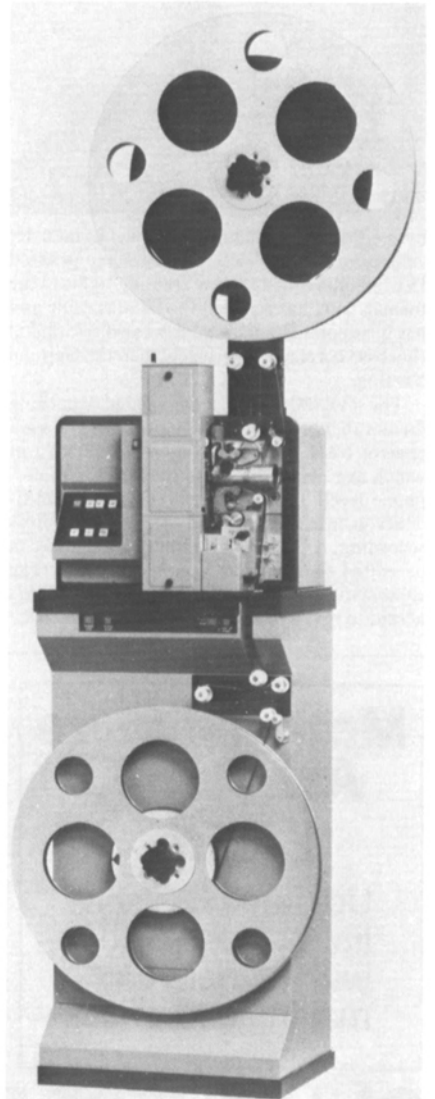
tants, Inc., P.O. Box 10057, Palo Alto, CA 94303. Designated Model 2700/3, it is a plug-in module measuring 1 in wide, 2.75 in high and 7.5 in long. It incorporates a differential video amplifier, a sampler and an 8-bit encoder. The sample-hold unit has an aperture uncertainty of 100 ps to allow the video subcarrier and fast pulses to be sampled with precision. Sampling jitter can be held to less than 15 ps. The input amplifier is designed to meet color television requirements in respect to differential phase and gain. Differential input is 1 V full scale and can be terminated in 50 or 75Ω. Digital noise generated by the system is virtually eliminated by a high common mode rejection. Sine wave response extends to 20 MHz, rise time is 20 ns and full-scale setting time is 50 ns.

Sampled analog data are applied to an encoder that produces a binary coded digital output in a 66-ns conversion time. Throughput may be up to 15 MHz. The encoder is double buffered and the parallel data is available for the entire conversion time except for 5 ns when the output register is updated. Output appears as both true and complement data in a form suitable for driving matched twisted pair or coaxial lines. The unit can drive into standard MECL or TTL line receivers. Prices begin at \$600 ranging to \$4000 for the basic instrument and related items.



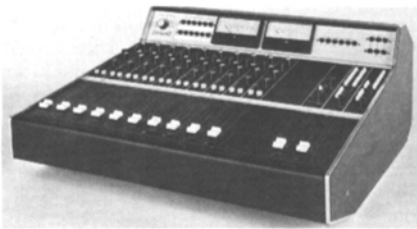
The NAC Model DF-16B 16mm flicker-free projector, designed for qualitative film analysis, has been announced by Instrumentation Marketing Corp., 820 South Mariposa St., Burbank, CA 91506. The unit is continuously variable, forward/reverse 0 to 18 frames/s, 24 frames/s, and single frame forward/reverse. It has instantaneous stop for frame-hold at any speed up to 18 frames/s, constant halogen illumination

at stop-motion and all speeds with no film damage. Other features include a remote control box containing speed/direction knob, LED frame counter with pushbutton zero reset and pushbutton for single frame advance/instantaneous stop. It has a capacity of 800 ft, single or double perforation. Input voltages of 115 V ac or 220-240 V ac, 50 Hz are available. The price is \$2260.

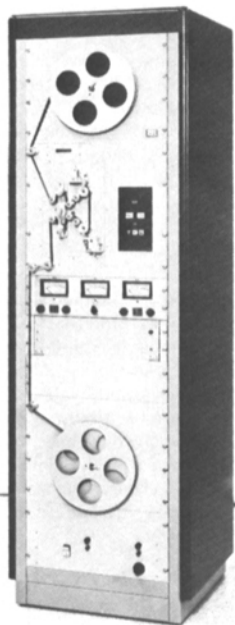


The Athena 5000, a new 16mm professional, heavy-duty television broadcast projector has been announced by L-W International, 6416 Variel Ave., Woodland Hills, CA 91364. The new projector is designed to provide instantaneous change of direction, instant stop/start and unlimited hold time on a single frame of film without damage to the film and without focus drift. Film capacity may range from 100 to 5000 ft servo controlled. Features include dual tungsten lamps with automatic changeover, easy threading with automatic lower loop restorer, instant sound with no "roll-in" time, rack and pinion focusing and others.

The 5000 provides optical or magnetic playback with solid state preamp. Solid state CMOS control circuitry offers, with the use of an interface, future capability for external digital programming and computer operation of the projector. Price of the Athena 5000 is \$12,600.



The **Transportable Audio Console, Model M1002**, has been announced by Ward-Beck Systems Ltd., 841 Progress Ave., Scarborough, Ont., Canada M1H 2X4. Small and lightweight, the unit has 10 input channels with mic/line and equalization capabilities, two output channels, extensive monitoring, fully balanced circuitry and a self-contained power supply. It is intended especially for small studio or remote pickup applications requiring either mono or stereo program production. The price is \$9800.

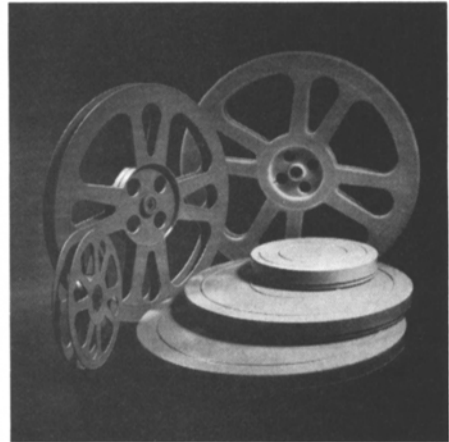
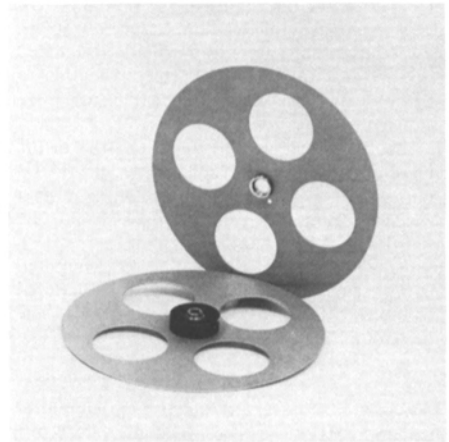
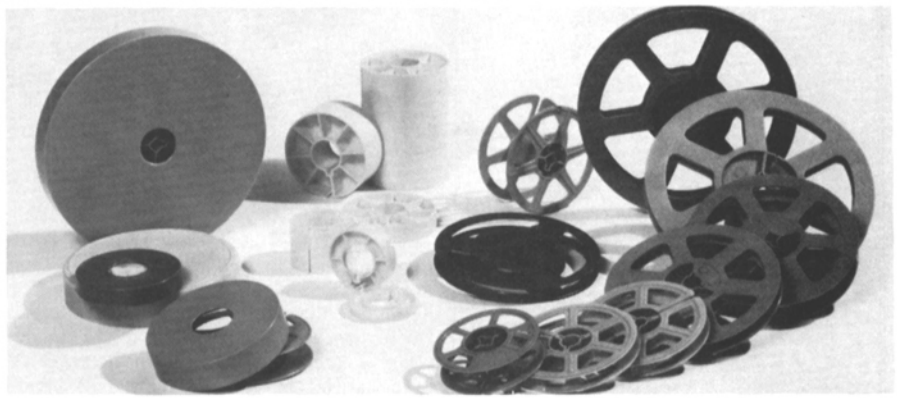
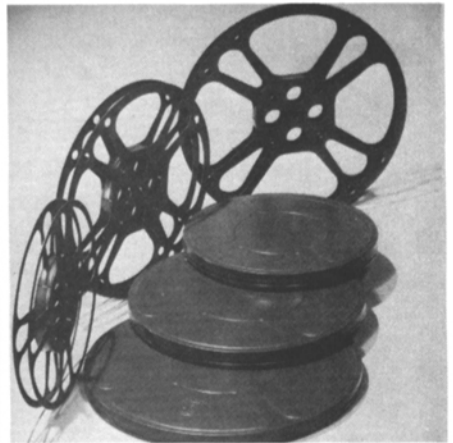
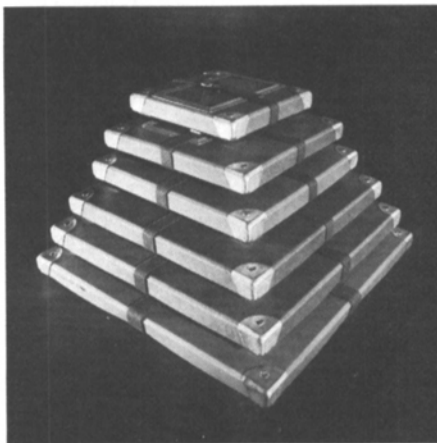


The **WRE Model 840 super-8 recorder** for S-8 magnetic sound recording has been announced by Wide Range Electronics Corp., 2119 Schuetz Rd., St. Louis, MO 63141. The recorder is available in models to accommodate all fullcoat and prestriped S-8 film formats. Model 840 utilizes the "on the drum" technique for recording S-8 film. Head to film intimacy is maintained under virtually all film conditions. The dual drum, dual sprocket film transport design provides a simple and easy film threading path. Frequency response is typically 50 Hz to 8 kHz ( $\pm 2$  dB) for record and playback. Maximum wow and flutter is 0.10% rms and the total harmonic distortion is less than 1.5%. Film capacity is 3000 ft. The record and playback operation is at 24 frames/s (20 ft/min).

The Standard Model 840 Type B super-8 recorder can accommodate 16mm (1-3) and single strand S-8 film and is compatible with existing playback devices and dubbers in or out of interlock. The Type B system includes two channels each of record and playback electronics, VU meters for record/playback and bias current level monitoring, footage counter and rear-lighted pushbutton control panel to accommodate all functions. Models for other film formats are also available. Price for Model 840 Type B is \$6750.

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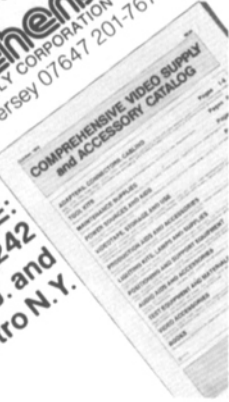
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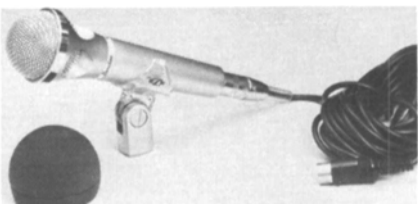
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**The Super C, a new electronics unit** designed to complement the C Series Master-Room Reverberation Chambers, has been announced by MicMix Audio Products, Inc., 9990 Monroe Dr., Suite 222, Dallas, TX 75220. As in the regular C Series units, the Super C chambers are full two-channel stereo with separate sound columns (not shown in the photograph above) incorporating delay and ambience characteristics. Also included in the Super C models are variable decay controls and independent reverb and direct signal mix controls on each channel. Additional Super C features include both high and low shelf equalization plus selective frequency peak EQ. Shelf controls provide 17 dB boost and 18 dB cut at 150 Hz and +14 to -12 dB at 20 kHz while the peak controls permit up to 10 dB boost at selective frequencies of 1.5, 2.2, 3.4, 4.5 and 6.0 kHz. With the EQ controls in the flat position, the Super C has been designed to provide smoothness and flat response. The electronics are mounted in a standard 3 1/2-in rack panel and brackets are provided for the sound columns. Prices begin at \$1995. Options include balanced line transformers and cabling for re-moting the sound columns.



**Two new Beaulieu/Sennheiser microphones** have been announced by Hervic Corp., 14225 Ventura Blvd., Sherman Oaks, CA 91423. The following are the characteristics of the Electret Microphone Model ME S-8 type: dynamic pressure gradient receiver; frequency range, 50 to 15,000 Hz; sensitivity at 1 kHz, 2 mV/μbar (-76.5 dBV); impedance at 1 kHz, 15,000 Ω ± 20%; nominal actual load impedance ≥ 1500 Ω; directional characteristic, cardioid; SNR, ≥ 64 dB; power, 5.6 V Mallory battery. The price of \$197.90 includes connecting cable and mike support.

The following are the characteristics of the Cardioid Dynamic Microphone Model MDS-8 (shown above) type: dynamic pressure gradient receiver; frequency range, 50 to 15,000 Hz; sensitivity at 1 kHz, 0.13 mV/μbar (-73 dBV); impedance at 1 kHz, 200 Ω ± 20%; nominal actual load impedance ≥ 200 Ω; directional characteristic, cardioid; SNR, ≥ 67 dB. The price of \$272 includes a windscreens.

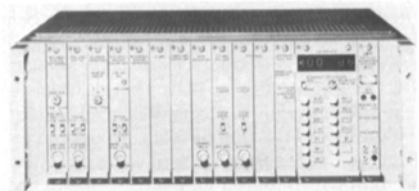
**A new audio tape record/playback preamplifier** called the RP-85 has been announced by Telex, 9600 Aldrich Ave. South, Minneapolis, MN 55420. Designed as a compact monaural modular addition to the Telex line of tape products, the RP-85 can accommodate tape speeds from 1 7/8 to 15 in/s in 1/8 to fulltrack formats. A low-speed RP-85L provides special equalization for use with cassette or open-reel logging applications (1 7/8 to 1 7/8 in/s). The unit has facilities for mixing and is universally matched for line and microphone inputs as well as line and monitor outputs. Independent line and cue amplifiers permit monitoring without loading the program output. Self-synchronizing bias permits multi-channel operation including stereo monitoring. Two isolated dc outputs provide continuous or record-mode controlled voltage for external

relay or lamp operation. Programmable connectors accommodate various head impedances and configurations. Features include silent FET switching, 60 dB bias rejection and immunity to electromagnetic and radio frequency interference. The new amplifier replaces the Telex RP-84, RP-110 and RP-120 units. The price is about \$260. Rack mount kits, interconnecting cables and 240-V adapters are available as optional accessories.



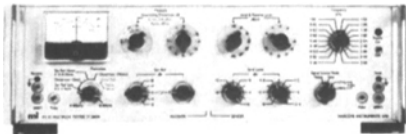
**A studio monitoring headphone designated HD 224 X** has been announced by Sennheiser Electronic Corp., 10 W. 37 St., New York, NY 10018. A dynamic headphone with a frequency response of 16 to 20,000 Hz, it can be connected to either mono or stereo units. Features include soft earpads made of soft foam with double walls designed to cover the entire ear. Price of the HD 224 X is \$99.80.

**A new self-aligning capstan idler assembly** has been announced by VIF International, P.O. Box 1555, Mountain View, CA 94042. Designated the VIF 1005 Idler Assembly the device incorporates a ball bearing that enables it to remain parallel to the capstan at all times. Available for OEM applications, the device has been used as a replacement part for professional audio tape recorders it can also be used on small-diameter capstans on slower speed recorders. The VIF 1005 Idler Assembly is priced at \$30.

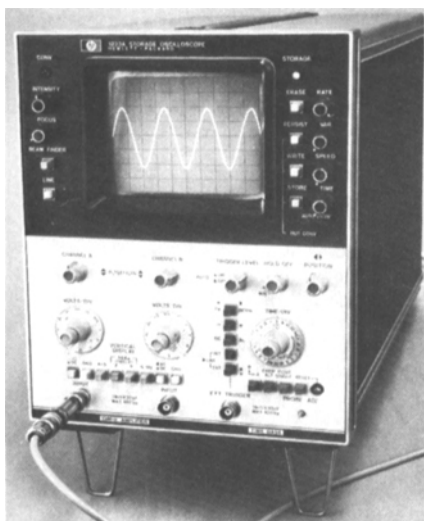


**A new VIT (Vertical Interval Test) Distortion Meter, Type UPF**, designed to monitor broadcast signals as well as those generated in the laboratory, or for general measurements, has been announced by Rohde & Schwarz, 14 Gloria Lane, Fairfield, NJ 07006. The new VIT meter has a modular design consisting of the basic unit, a test parameter plug-in limit monitor and a display unit. A selection of test parameter plug-ins provide flexibility. The basic unit includes the power supply and the four basic plug-in cassettes (gain control, sync separator, timing program and luminance bar amplitude). The unit is capable of providing test information on linear distortion, non-linear distortion, interference voltages, operating parameters and measurement ranges and error limits of other important parameters. Pilot lamps and signaling lines indicate the various irregularities in signals. In addition to pure VIT line tests, measurements

in the full field range are possible. Other operating parameters, such as sync and burst amplitudes or hum, can be determined. The instrument permits simultaneous analysis of several characteristics of a signal under test. The price is about \$18,000 depending on the configuration.

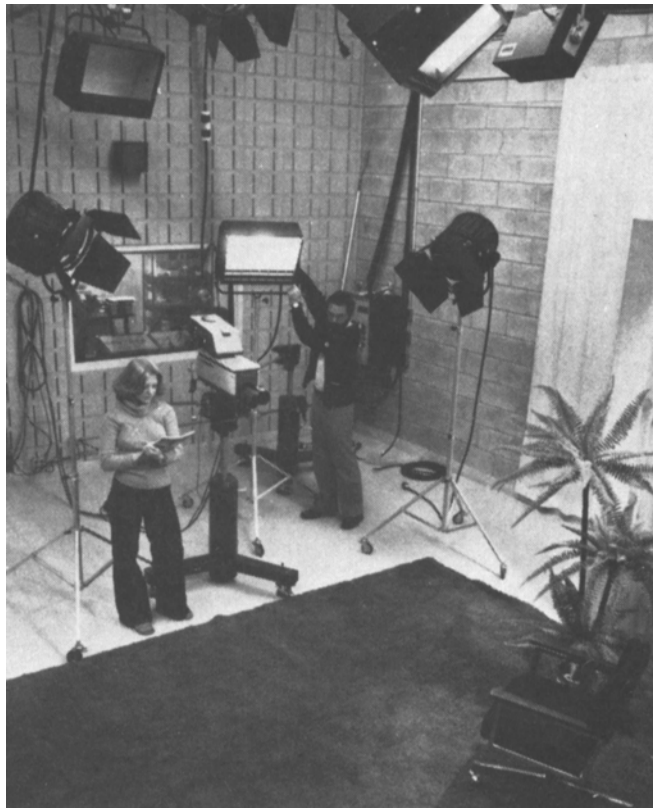


A p.c.m. multiplex tester, Model 2807A, an improved version of the earlier Model 2807, has been announced by Marconi Instruments, 100 Stonehurst Court, Northvale, NJ 07647. The instrument is designed to measure the overall performance of a p.c.m. multiplex system from audio input to audio output, measuring impairments in performance introduced during multiplexing and analog to digital conversion. The performance of digital systems may be assessed either end to end or looped at the digital output/input of the multiplexer. The new model is said to have better stability, distortion and accuracy than the earlier model. It has improved mechanical construction and switches. Switched audio output frequencies replace the previous analog output to provide increased ease of operation. Measurement functions include quantizing distortion; signaling distortion; channel gain or loss; linearity; channel frequency response; interchannel crosstalk; and idle channel noise. Two distinct signal sources are included in Model 2807A — pseudo random noise and sinewave to provide the user with the advantages of measuring distortion by either of the commonly accepted methods. Price of the 2807A is \$3975.



A variable persistence/storage oscilloscope, Model 1223A, has been announced by Hewlett-Packard, 1501 Page Mill Rd., Palo Alto, CA 94304. Features include a burn-resistant CRT and automatic storage control to make it easy to capture low rep-rate and single-shot waveforms for stored display. The instrument has a 15-MHz bandwidth and 2-mV sensitivity. It integrates very-low-frequency or low-duty-cycle traces into clear displays and provides storage for single-shot events. Maximum writing speed is 1 cm/ $\mu$ s in the storage mode. The auto-erase mode provides repetitive single-shot displays for

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recurrent viewing of traces while also making it easy to set up the instrument for capturing single-shot events. An auto-store mode allows the instrument to wait for an event and capture it when it occurs. A variable control for brightness of stored traces is included so a setting can usually be found for optimum trace to background contrast. Applications include vibration and shock analysis (electromechanical), ECG/EEG muscle reaction analysis (medical), machine design and service (x-ray and numerical control) as well as design of low-frequency filters and circuits for integrating and differentiating (research and education). The 1223A also includes TV sync, variable trigger holdoff, A±B modes, calibrated x-y display and selectable chop/alternate sweep operation. Power-line voltage may be set at 100, 120, 220 or 240 V (±10%) and line frequency may be from 48 to 440 Hz. The price is \$2250.

A new destaticizing blower, Model WD-100, has been announced by Wescorp, 1601 Stierlin Rd., Mountain View, CA 94040. The new blower blows ionized air at a distance of up to 7½ ft. The cone of ionized air, 4 ft in diameter at its widest point eliminates static electricity from the air surrounding a work area. Applications include graphic arts, film processing and other industries where static electricity can cause safety or quality control problems. Features include a tubular housing, instead of rectangular, to improve air flow from a fan that blows ionized air from a high-voltage electrostatic field. The fan is 5 in in diameter and provides an airflow of 150 ft³/min. The instrument operates on 115 V ac. The price is \$244.

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