

network interconnects 17 schools with its studio. The schools are located within an area of about 20 miles and are linked together by some 22 miles of coaxial cable, suitably amplified. The network is designed for six adjacent channels utilizing the five standard low-band channels plus one channel in the FM band.

FRIDAY AFTERNOON

1:30 TELEVISION EQUIPMENT AND PRACTICES

The Problem of the Unrestored Television Receiver

ROBERT J. NISSEN, *KQED, San Francisco*

It is maintained that correct gray-scale reproduction is the most important parameter of television picture fidelity. The absence of d-c restoration in the modern home receiver, under certain picture conditions, will almost totally destroy proper gray-scale reproduction. Results are reported from a survey of set manufacturers which questioned their reasons for excluding this critical circuitry. To alleviate the unrestored picture problem, until restoration circuits are again included in the home receiver, operating procedures and standards based on the use of the transmission waveform as a guide are proposed to the broadcast engineer.

An Analysis of Noise in the Image Orthicon

B. H. VINE, *Electron Tube Div., Radio Corp. of America, Lancaster, Pa.*

The problem of how to design a camera tube to operate at light flux levels lower than those presently used without reduction of the signal-to-noise ratio is examined. It is shown that any increase in photocathode sensitivity or mesh transmission allows a corresponding reduction in the light required for equal performance. On the other hand, increases in the secondary-emission ratios of the target of first dynode, even if indefinitely large, can only produce a limited reduction in the light required for equal performance.

New Concepts in TV Cameras

S. L. BENDELL and H. N. KOZANOWSKI, *Radio Corp. of America, Industrial Electronics Products, Camden, N. J.*

Television cameras, electrically stabilized to produce optimum picture quality with a minimum of operator attention, have been developed. Such cameras have long-term precision recycling characteristics and are interchangeable without readjustment. Reliability is obtained by the use of premium tubes, nuvistors, and conservative design. These attributes have been incorporated in a new 4½-in. image-orthicon camera.

Operation of a New Image-Orthicon Camera

CYRIL TEED, *Marconi Wireless Telegraph Co., Ltd., Chelmsford, Essex, England*

Operation features of the new 4½-in. image-orthicon Marconi Camera are discussed with emphasis on broadcasting problems and requirements. A new design idea has been incorporated to achieve stability and versatility and to simplify the operation of the camera.

A Versatile Distribution System for Telecine and Video-Tape Signals

GLEN AKINS, *American Broadcasting Co., Hollywood*

An auxiliary video switcher employing a compact, low-capacitance rotary switch permits a typical television switching system to handle an additional forty input signals. Sync mixing and audio switching functions are automatic. An interlock facility is provided for joint operation of two or more switching systems.

A Mobile Color Video Tape Recording Unit

WILLIAM BARNHART, *Ampex Professional Products Co., Redwood City, Calif.*

FRIDAY EVENING

7:45 BEN HUR, MGM STUDIOS (THEATER)

Exhibit Directory

Ampex Corporation
Redwood City, Calif.

Booths 212, 214, 216

Exhibiting: Two new Ampex Videotape Recorders; Marconi Mark IV Television Camera Chain, and accessories.

Personnel: Jack Miller, Joe Silver, Hal Hummel, Bob Day, Jack Neitlich, Joe Roizen, Cyril Teed, Bill Barnhardt, Eldon Brown, Charles Swisher, Ed Aleks, Tom Merson, Frank Gonzalez, Bill Wallace, Jack Hauser.

Arriflex Corporation of America Booths 208,
257 Park Ave. South, New York 10 210
7303 Melrose Ave., Los Angeles 46

Exhibiting: The Arricord—a single-unit double-system synchronous sound recording outfit comprising an Arriflex 35 and a 17½mm magnetic film recorder in a single blimp; Arriflex 16 with signal generator and Maihak ¼-in. tape recorder; Schneider lenses in new series of Cinegons and Cine Xenons; Taylor Hobson Cooke lenses in Kinetal series and Speed Panchro Series II; nickel cadmium batteries with built-in Mini-charger.

Personnel: Paul Klingenstein, Victor James, Michael Zois, Abbott Sydney, Richard Halpert, Carl Nuernberg.

Bach Auricon, Inc.

6946 Romaine St., Hollywood 38

Booth 115

Exhibiting: Auricon and Datasync 16mm Sound-on-Film and Data Recording Cameras, including Auricon Cine-Voice II, Auricon Pro-600, Auricon Super 1200, Filmagnetic Recording Systems, Datasync "Photo-tape" Electronic-Optical Data Recording Equipment, Multiple-track Datasync Filmagnetic Projection Equipment, Auricon "VFR," Video Film Recording Equipment.

Personnel: Walter Bach, William G. Straube.

Bell & Howell Co.

7100 McCormick Rd., Chicago 45, Ill.

Booth 102

Exhibiting: The Bell & Howell Model JM 16mm Motion-Picture Printer, and accessories.

Personnel: James L. Wassell, Malcolm G. Townsley.

Birns & Sawyer Cine Equipment, Inc. Booth 201
6424 Santa Monica Blvd., Hollywood 38

Exhibiting: Omniscope Tracking Finders; Omniscope Lenses (telephoto system); Omnipod Lens Cradles; Birns & Sawyer Heater Barneys; new tripods for Arri cameras; sports and tracking finder for Arri cameras.

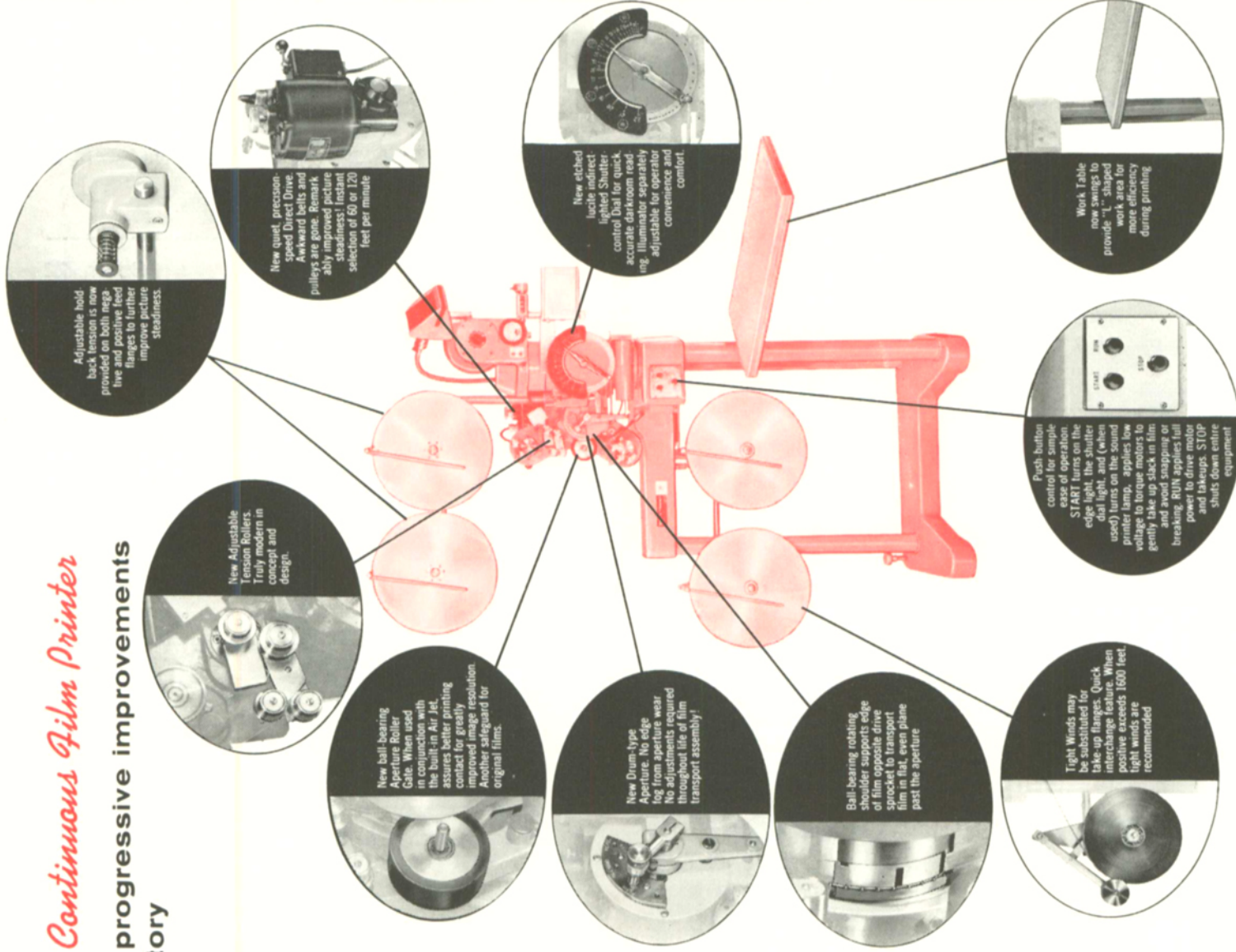
Personnel: Jack Birns, Cliff Sawyer, Pat Watson.



Bell & Howell Continuous Film Printer

The "JM" brings progressive improvements to the film laboratory

- The 100% ball-bearing film transport system will extend the quality printing life of any film. With the "velvet treatment" of this transport, film literally flows through the entire printer on ball bearings.
- Amazingly improved picture steadiness!
- Much higher image resolution.
- New built-in Edge Light feature allows key footage numbers to be printed in absolute synchronism right at the aperture!
- New Aperture Printing Sprocket design with smooth ball-bearing action.
- New feather-weight Back Shutter of magnesium.
- New ball-bearing Rotating Shoulder opposite main drive sprocket. The "JM" now evenly supports BOTH edges of the film at the aperture during printing.
- New built-in Air Jet behind the aperture for increased steadiness.
- New improved design of Feed and Takeup Flanges — 2000 foot capacity.
- Highest quality precision prints from the "JM" printer will help you maintain customer satisfaction and insure your profits on every printing job.
- Compact electrical distribution panel under shelf of new Triplex base. Seven cable receptacles and all circuitry provided in unit panel for AC and DC input, power for drive motor, AC for sound head, current for 3 torque takeup motors and two interlocked AC and DC quick re-set circuit breakers to protect the entire electrical system. Two additional cable receptacles afford connections to an accessory tape reader (when operating with automatic shutter control) and also for loop-tree printing equipment. An on-off switch with a separate rheostat is provided for variable control of the key footage printing lamp. An adjustable control for dial light intensity and a 2-position switch for MANUAL-AUTOMATIC printer operation complete the panel arrangement. All switches, connectors, and circuit breakers have been selected for 200% to 400% excess capacity to assure trouble free performance.



Adjustable hold-back tension is now provided on both negative and positive feed flanges to insure picture steadiness.

New quiet, precision-Aspec Direct Drive pulleys are space. Remarkably improved picture steadiness! Picture selection of 60 or 120 feet per minute.

New etched lucite radiused lighted Shutter control Dial for quick, accurate darkness reading. Illuminator separately adjustable for operator convenience and comfort.

Work Table now swings to provide "L" shaped work area for more efficiency during printing.

New Adjustable Tension Rollers. Truly modern in concept and design.

New ball-bearing Aperture Roller Gate. When used in conjunction with the built-in Air Jet, results in better printing contact for greatly improved image resolution. Another safeguard for original film.

New Drive Type Aperture No. 10 for long life. No adjustments required throughout life of film transport assembly!

Ball-bearing rotating shoulder supports edge of film opposite drive sprocket to transport film in flat, even plane past the aperture.

Tight Winds may be substituted for take-up flanges. Quick interchange feature. When light winds are recommended.

Push button control for sample ease of operation. START turns on the edge light, the shutter dial light, and (when used) turns on the sound printer lamp. applies low voltage to torque motors to gently take up slack in film and avoid snapping or breaking. RUN applies full power to drive motor and takeups. STOP shuts down entire equipment.

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EVERY CONVENTION OFFERS AN OPPORTUNITY TO GREET OLD FRIENDS ...AND TO MAKE NEW ONES.

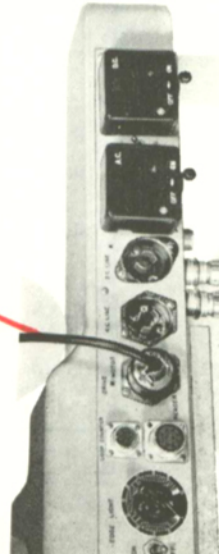
WE LOOK FORWARD TO SAYING "HELLO" AND TELLING YOU OF OUR PRESENT PRODUCT AND OUR FUTURE PLANS.

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WE'LL LEND AN UNDERSTANDING SHOULDER — AND POSSIBLY EVEN A SOLUTION!

SEE YOU IN L.A.!

JIM WASSELL
MARKETING MANAGER



Camera Equipment Co.
315 West 43 St., New York 36

Booth 211

Exhibiting: CECO Red Lake Projector; Weinberg-Watson Model II Projector; Cameraflex Bore-sight Camera and other photo-instrumentation cameras; CECO viewers; Waddell High-Speed Cameras; CECO motors; Scanascope Lenses; Professional Jr. Tripods—new models; portable power supplies; Maurer Blimp; Perfectone Recorder; CECO Programmer.

Personnel: Frank Zucker, Burt Zucker, Allan Green, Jack Pill, Cliff Van Praag.

Computer Measurements Co.
12970 Bradley, Sylmar, Calif.

Booth 119

Exhibiting: Unicorn Automatic Solvent Film Cleaner for 70mm film; Unicorn Automatic Darkroom Film Splicers 16mm, 35mm and 70mm models; Unicorn Color Timer for pre-selecting correct color printing filter information; Unicorn Printer Robot for Bell & Howell Printers (automation through programming tapes); Unicorn High-Speed Film Slitter for 35/32mm film.

Personnel: J. L. Cassingham, Mel W. Jones, Harlan Baumbach.

Electronic Systems, Inc., HURLETRON Booth 204
Subsidiary of Electric Eye Equipment Co.
1938 East Fairchild St., Danville, Ill.

Exhibiting: HURLETRON Automatic Shutter for 16 & 35mm Bell & Howell Printers; HURLETRON Punch Tape Control System With Tape Verifier; HURLETRON Automatic Control Board System; Dial-Matic Perforator.

Personnel: Theodore W. Batterman, Edward Richter.

Equipment Papers and Demonstrations

Wednesday, May 4, 9:30 a.m. to 12:30 p.m.,
exhibitors will present the following
equipment papers and demonstrations.

A complete list will be published
in the Convention Program.

Bell & Howell Co.: The New JM Printer.

Florman & Babb, Inc.: F & B Power Mite Nickel Cadmium Batteries and Power Supplies With Transistorized Inverters.

Hollywood Film Co.: HFC 16mm Hot Splicer.

Mole-Richardson Co.: Special Effect Equipment—Cobweb Spinner, Fogmakers, 18-in. Windmaker.

Ryder Sound Services, Inc.: The New Perfectone and Accessories, the Ryder Sync Camera Drive, and the Ryder Transistorized Inverters.

S.O.S. Cinema Supply Corp.: Time-Delay Unit for Motion-Picture Printers.

Traid Corp.: AUTOMAX—35mm Data-Recording Camera.

Florman & Babb, Inc.
68 West 45 St., New York 36

Booth 202

Exhibiting: F & B Triplex Animation Stand; a new product for camera animation work; complete line of F & B products—and a few new ones.

Personnel: Arthur Florman, Warren Portman.

Great Books of the Western World Booth 108
3805 Beverly Blvd., Los Angeles 4

Exhibiting: GREAT BOOKS, presented by Encyclopaedia Britannica in collaboration with the University of Chicago. The accumulated wisdom of three thousand years of civilization together with the revolutionary idea-index called the SYNTOPICON. These books bring together the greatest minds and ideas spanning the thirty centuries of Western civilization.

Personnel: S. R. Wallis, John Parker.

Karl Heitz, Inc. Booth 222
480 Lexington Ave., New York 17

Exhibiting: Kinoptik High-Speed Color-Matched (T-Stopped) Apochromat Lenses, for 16 & 35mm motion-picture and television cameras from 20 to 500mm; Robot 35mm Automatic System Camera and complete electric photo-recording system; Alpa 35mm Single-Lens Reflex Camera; Sinar 8 × 10, 5 × 7, 4 × 5 Interchangeable View Camera; Lindia 2 × 2 snap-in mounts with Newton-free glass.

Personnel: Karl Heitz, Dean Peck.

Hi-Speed Equipment, Inc. Booth 215
73 Pond St., Waltham, Mass.

Hollywood Film Co. Booths 121, 123
956 N. Seward St., Hollywood 38

Houston Fearless Corp. Booths 112, 114
11801 W. Olympic Blvd., Los Angeles 64

Lipsner-Smith Corporation Booth 217
3475 West Touhy Ave., Chicago 45

Exhibiting: The Lipsner-Smith CF-2 Ultrasonic Film Cleaner. This cleaner differs from other cleaners in that there is no contact with the film while it is being cleaned and no mechanical scrubbing. The film is cleaned ultrasonically in a special CF-2 solvent bath and stripped dry in an air tower.

Personnel: Jerry Lipsner, Roy Bartels.

Magnasync Corporation Booths 104, 106
5546 Satsuma Ave., North Hollywood, Calif.

Exhibiting: Magnasync 16mm portable recorders, Series X-400, 602, Mark IX; Magnasync 16mm and 35mm dubbers, interlock systems and studio mixing equipment; Nomad 7-lb transistorized split 16mm recording system.

Personnel: D. J. White, Bill Stutz, Ralph Sogge, Bob Dickinson, Jim Green.

AVOID

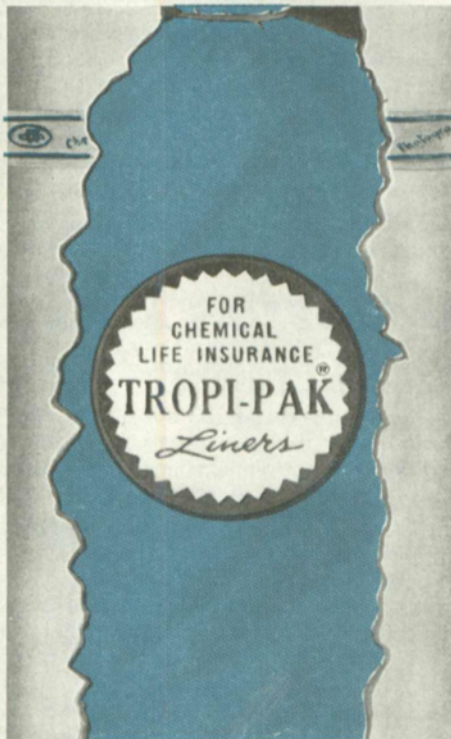
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To our industry, "Hygroscopicity" means trouble . . . trouble due to the fact that chemicals decompose and cake rapidly upon exposure to moisture.

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TROPI-PAK, the heavy-duty Polyethylene liner, prevents Airborne Contamination, keeps out Harmful Moisture, insures that RUSSELL chemicals remain undecomposed—"Photo Grade."

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Canada: L. B. RUSSELL CHEMICALS (CANADA) LTD.
77 Crockford Boulevard, Scarborough, Ontario

J. G. McAlister, Inc. Booth 120
1117 N. McCadden Place, Hollywood 38

Exhibiting: Fisher Microphone Boom, with crab base; Garnelites, stands, converters; McAlister Lights Dimmer, Duro, Diffusion Scrims; McAlister Crab Dolly.

Personnel: Walter A. Klinger, James L. Fisher, "Slats" Combs, Irving Yates, K. D. Clardy.

D. B. Milliken Co. Booth 117
131 N. Fifth Ave., Arcadia, Calif.

Mole-Richardson Co. Booth 207
937 N. Sycamore Ave., Hollywood 38

Exhibiting: Special effect equipment for motion-picture and television studios: Type 1963 Fog-maker Moleffect; Type 1983 Mister Fogmaker Moleffect; Type 1993 Senior Fogmaker Moleffect; Type 1911 Cobweb Spinner Moleffect; Type 1971 Windmaker Moleffect.

Personnel: M. A. Hankins.

Moviola Mfg. Co. Booth 110
1451 Gordon St., Hollywood 38

Neumade Products Corporation Booth 219
250 West 57 St., New York 19

Exhibiting: Video-tape storage cabinets; splicers, re-winds and other editing equipment for 16mm, 35mm, 70mm; Neuvator Film Cleaner; Neucue Television Cue Punch; Magnetic Tape Storage

Units; film, filmstrip and slide cabinets and racks.

Personnel: Lee E. Jones, Robert E. Hempel, Lew Grosfisk.

Precision Laboratories Div. Booth 205
Precision Cine Equipment Corp.
1037 Utica Ave., Brooklyn 3, N.Y.

Exhibiting: Precision Sound Readers for editing optical or magnetic soundtracks; unitized synchronizers; magnetic attachments for synchronizers; film slitters; editing devices for picture and sound.

Personnel: Irwin R. Sheldon.

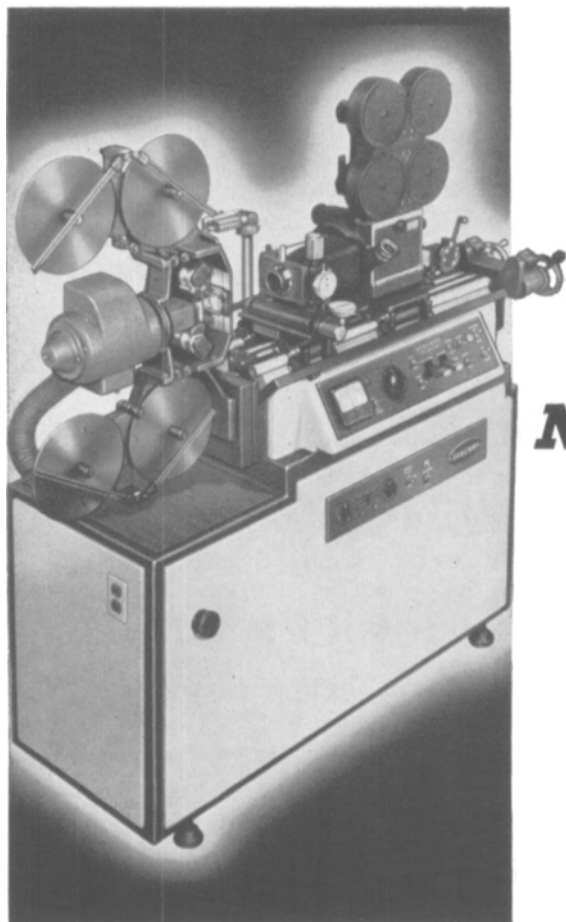
Prestoseal Mfg. Corp. Booth 220
37-27 33 Street, Long Island City 1, N.Y.

Exhibiting: New Prestoseal equipment for splicing dissimilar materials with thermal setting reinforcing agent; 16mm, 35mm and 70mm butt-weld splicers; digital paper tape splicer.

Personnel: Leonard A. Herzig.

Radio Corp. of America Booths 101, 103, 105,
Broadcast & TV Equipment Div. 107, 109, 111,
Camden, N. J. 113

Exhibiting: RCA Television Tape System, featuring a "matched" line of production equipment; Advanced Television Tape Recorder; New 4½-in. Image Orthicon Television Camera; TK-15 Vidicon Television Camera; transistor switching



Modern as tomorrow and streamlined for maximum efficiency, the **ALL NEW OXBERRY 1500 Series Optical Step Printer** is a truly remarkable machine. Designed to meet the growing demand for a high performance, moderately priced unit, it embodies all the essentials necessary for fine optical printing and special effects work. It is built with the same high precision as the world-famous OXBERRY 1000 Series, but at a substantial lower price without sacrifice of function or scope.

The 1500 will do frame to frame and continuous step projection printing; freeze frame work; in color or black

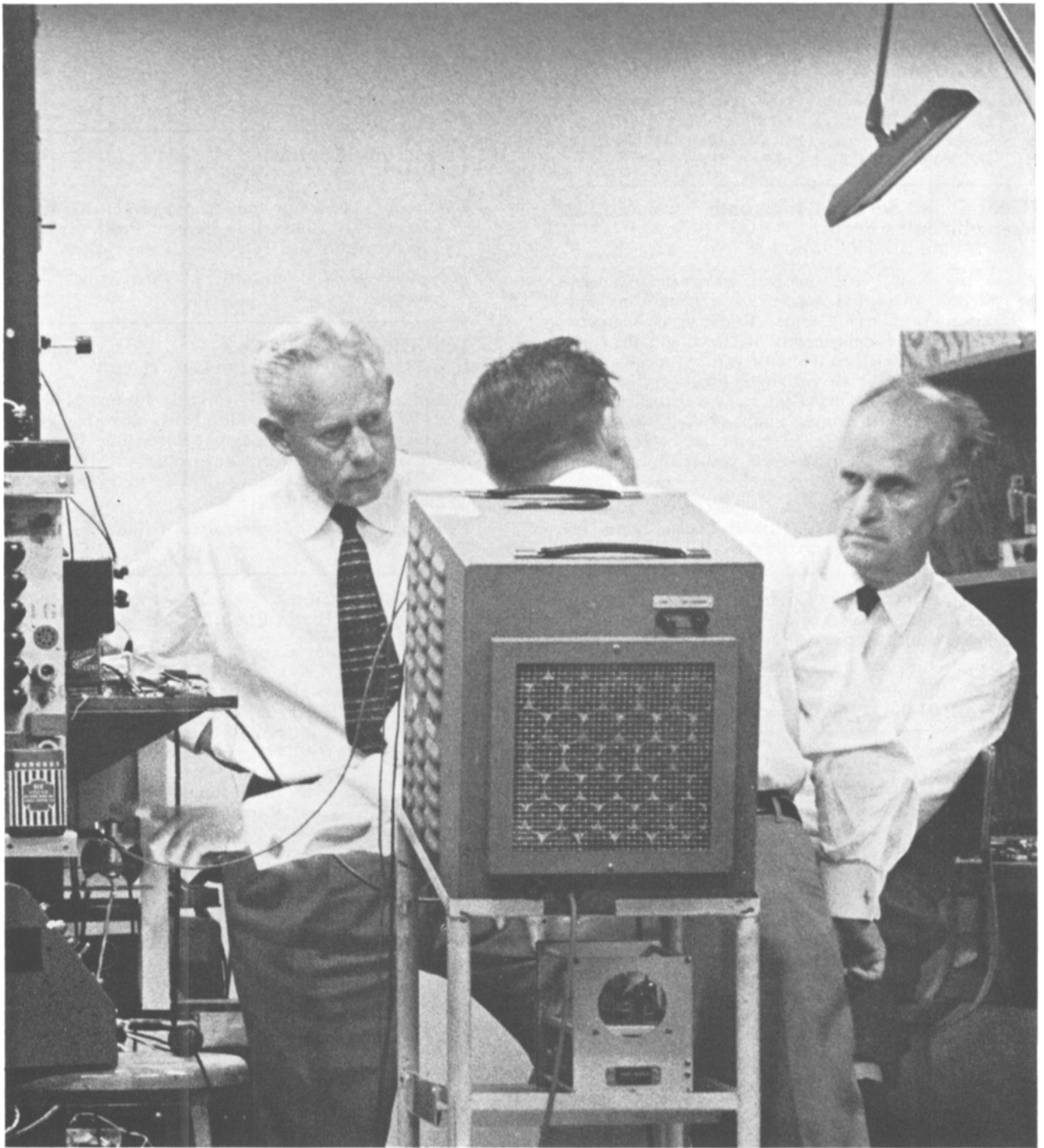
New 1500 Series Printer

and white. Zoom range from 5 diameters reduction to 4 diameters enlargement. Both camera and projector will receive 35mm and 16mm components without loss of optical centers or film alignment when changing from 35mm to 16mm. Electro-mechanical drive has push-button controls. Full range of accessories available.

Standard model printer for 35mm includes the following: Camera with manual dissolve and fade; 35mm shuttle and sprocket assemblies; automatic take-up; 400 ft. magazine; counter; viewing device, superimposed type; precision compound lens mount; 100mm f/4.5 Ektar lens. Two speed stop motion motor, continuous, forward and reverse. Price, complete **\$14,800**

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Solving problems related to all types of film processing is their business. Out of their discussions also come ideas for saving you time—and money. Forty-five years of experience mean superior quality and service—plus dependability.

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and processing equipment; special effects for television tape production; editing equipment for television tape; audio and film recording equipment.

Personnel: A. M. Miller, Dana Pratt, P. Bergquist, A. E. Inglis, E. T. Griffith, Max Berry, J. Grever, E. J. Frost, R. J. Newman, M. Corbett, H. Dover, W. Charles, M. A. Trainer.

**Ryder Sound Services, Inc., and
Magnetic Sales Corp.** Booth 209
1161 N. Vine St., Hollywood 38

Exhibiting: New Perfectone and accessories: transistorized three-dial mixer, sync generator and automatic starting units; Ryder Sync Camera Drive: for synchronizing Perfectone 1/4-in. tape recordings with cameras driven by spring, battery d-c motor drive, single-phase, 120-v and three-phase power; Ryder Transistorized Inverters: for furnishing single-phase, 120-v, 60-cycle power from a 12-v storage battery and three-phase, 220-v, 60-cycle power from a 24-v storage battery.

Personnel: Leon D. Selznick, Gene Garvin, Ronald Cogswell, Fred Albin, Robert Hicks, Loren L. Ryder.

S.O.S. Cinema Supply Corp. Booth 203
602 West 52 St., New York 19
6331 Hollywood Blvd., Hollywood 28

Exhibiting: S.O.S. Tel-Anima Negative/Positive Film Cleaning Machine; S.O.S. Tel-Anima Hot Press; S.O.S. Sonostriper: Moy Visible Edge

Numbering Machine; S.O.S. Ediola Film Viewers; Bridgamatic Processing Machine; Tel-Amatic 16mm Printer.

Personnel: D. J. Capano, Alan C. Macauley, Jan Macauley.

Telescript-CSP, Inc. Booth 213
155 West 72 St., New York 23

Exhibiting: Telescript film studio prompting equipment; TV-7000 Rear Screen Projector, with polarization kit; Television Tape Editor.

Personnel: Curtis Howard, David Reiner, J. P. Latil.

Television Specialty Co. Booth 206
1055 Stewart Ave., Garden City, N.Y.

Exhibiting: TSC Transistorized 16mm Newsreel Cameras, sound-on-film, with portable power pack; TSC Kinescope Recording Cameras; TSC Rear Screen Projector; FME 35mm Cameraflex Camera; FME film inspection equipment.

Personnel: Howard Ryder, John Schlageter, James K. Malone.

Traid Corporation Booth 218
17136 Ventura Blvd., Encino, Calif.

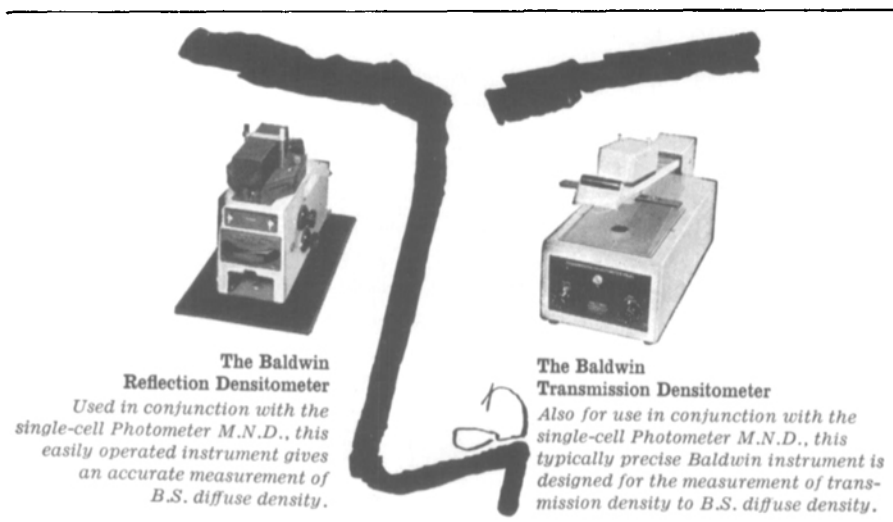
Exhibiting: 16mm Cameras: Traid 15, Traid 560, TKB-3A, TKD-7, TKS-27A, 917F, Photo-Sonics 16mm-1B, Photo-Sonics 16mm-1C; 35mm Cameras: Traid 805, Traid 75, Automax, Photo-Sonics 35mm-4B; 70mm Camera: Photo-Sonics; Miscellaneous: Raporoll (Rapid Film Processing), lenses, splicers, Vanguard Reader, magazines, tracking finders, power supplies, converters, intervalometer, digital recording devices, bore-sights etc.

Personnel: Carlos Elmer, Robert King, Arthur H. Bolt, R. F. Peterson, Dick Freeborg, Fred G. Roberts, Jr.

Westrex Corp. Booths 116, 118
6601 Romaine St., Hollywood 38

Exhibiting: Latest Westrex Multi-Unit Rerecorder and Transistorized Rerecording Mixer; model of new Automatic Announcing System and Message Synthesizing Unit; model of new Electro-Mechanical Reverberation Synthesizer; latest Westrex StereoDisk Recorder equipped with an Automatic Variable Depth Control.

Personnel: Leo A. Call, Ed A. Dickinson, Frank E. Pontius, Bill A. Findlay, Fred Harney, Frank O'Brien, Ralph W. Wight.



**The Baldwin
Reflection Densitometer**
Used in conjunction with the single-cell Photometer M.N.D., this easily operated instrument gives an accurate measurement of B.S. diffuse density.

**The Baldwin
Transmission Densitometer**
Also for use in conjunction with the single-cell Photometer M.N.D., this typically precise Baldwin instrument is designed for the measurement of transmission density to B.S. diffuse density.

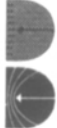
The infallible eyes

As the techniques of photometry and densitometry become more and more complex, the comparison between prints or negatives cannot rest on the judgement of the human eye, however well experienced. Today, the unvarying accuracy of Baldwin instrumentation is needed.

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FOR THE
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OF
TV TAPES
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We think this represents the finest and most complete demonstration of TV Tape Equipment ever presented. You'll see the only "matched" line of program production equipment. You'll see the latest in Advanced Recording, Special Effects, Transistor Switching, and TV Cameras for Tape. You'll see pictures that sell themselves to sponsors because they're above and beyond anything yet offered . . . pictures that make multiple copies because they are so sharp. You'll see the sharpest pictures in town!

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