

Congressional Record

Senate

[In the closing days of the last session of Congress, the Senate unanimously passed a resolution endorsing the Fifth International Congress on High-Speed Photography to be held October 17-21, 1960, with headquarters at the Sheraton-Park Hotel, Washington, D.C. Senator Magnuson stressed the wide uses of high-speed photography (his entire speech follows). The Resolution calling for active participation in the Fifth International High-Speed Congress by all interested agencies of the Federal Government was then passed by the Senate.]

Friday, August 28, 1959

HIGH-SPEED PHOTOGRAPHY

Mr. MAGNUSON. Mr. President, the forthcoming Fifth International Congress on High-Speed Photography will be held at Washington, D.C., in October 1960. The congress is sponsored by the Society of Motion Picture and Television Engineers.

This congress has been preceded by similar meetings in Washington in 1952, Paris in 1954, London in 1956, and Cologne in 1958. Previous congresses abroad have been endorsed and assisted by the government of the country in which they were held. Therefore it is fitting that we do all we can to encourage this valuable scientific congress. By means of a joint resolution, we can welcome our international visitors and support our Society of Motion Picture and Television Engineers.

I ask unanimous consent that a joint resolution and statement be printed in the RECORD, to explain the purpose of this congress and the importance of high-speed photography in this age of automation and space travel.

There being no objection, the resolution and statement were ordered to be printed in the RECORD, as follows:

PROPOSED JOINT RESOLUTION TO ENDORSE THE FIFTH INTERNATIONAL CONGRESS ON HIGH-SPEED PHOTOGRAPHY TO BE HELD IN WASHINGTON, D.C., IN OCTOBER 1960, UNDER THE SPONSORSHIP OF THE SOCIETY OF MOTION PICTURE AND TELEVISION ENGINEERS

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,

Importance of High-Speed Photography

SECTION 1. Photographic techniques which can magnify the time scale of scientific phenomena are extremely important to the research and engineering activities of every nation.

History of the International Congress on High-Speed Photography

SEC. 2. The First International Congress on High-Speed Photography was held in Washington, D.C., in 1952. It was organized and conducted under the sponsorship of the Society of Motion Picture and Television Engineers. Subsequent meetings were held at 2-year intervals in Paris, France; London, England; and Cologne, Germany. In each instance these meetings have received the recognition and the support of the governments of the respective host countries. With each meeting, the International Congress on High-Speed Photography has grown in stature and in prestige.

The Society of Motion Picture and Television Engineers is once again sponsoring the International Congress on High-Speed Photography in Washington, D.C. This fifth congress will be held in October 1960. The Society of Motion Picture and Television Engineers is fully appreciative of the importance of assuring that this international scientific meeting is conducted in a manner which will bring credit and enhanced prestige to the United States of America as the host Nation.

Purpose of This Resolution

SEC. 3. The Congress, sincere in the belief that:

(1) The democratic environment of the free world is the best environment for achievement in science;

(2) Scientists and engineers have special advantages and opportunities to assist in achieving international understanding since the laws and concepts of science cross all national and ideological boundaries; and being interested in: (1) promoting international understanding and good will; (2) enhancing the excellence of American science, both basic and applied; (3) furthering international cooperation in science and technology by creating the necessary climate for effective interchange of ideas; does hereby endorse the Fifth International Congress on High-Speed Photography to be held in Washington, D.C., in October 1960 under the sponsorship of the Society of Motion Picture and Television Engineers, and urges that all interested agencies of the Federal Government actively participate to the fullest extent possible.

Peacetime Uses of High-Speed Photography

High-speed photography covers a wide field of methods of either stopping action or

slowing it down to where it may be carefully studied, measured, or chronologically analyzed. Basically, there are five types of high-speed cameras—motion picture, short duration exposure control, smear or streak, image dissection, and framing-sequence cameras. I will not endeavor to describe these, but will say that, with the correct selection of camera type and its precise usage, these high-speed photographic systems will give the scientist and engineer a tool that is extremely valuable in nearly all phases of our present-day living.

The automobile we drive, the telephone we use, the tin can that holds our foodstuffs and even the girdle worn by women, reflect the industrial use of high-speed photography. This use ranges from the very exacting study of the combustion of gasoline in the motor, the perfection of mass production machinery and resulting automation, to the skillful advertising of the three-way stretch. The automatic dial telephone required high-speed photographic instrumentation for that study which resulted in the telephone's present-day accuracy. As is so often the case in satisfying the needs of a specific study, a camera was designed that eventually became of worldwide importance. This is the story behind Bell Labs design of the Fastax camera some 23 years ago. Almost all of the high-velocity mechanical action in precision equipment today has utilized, in some way, high-speed photographic techniques.

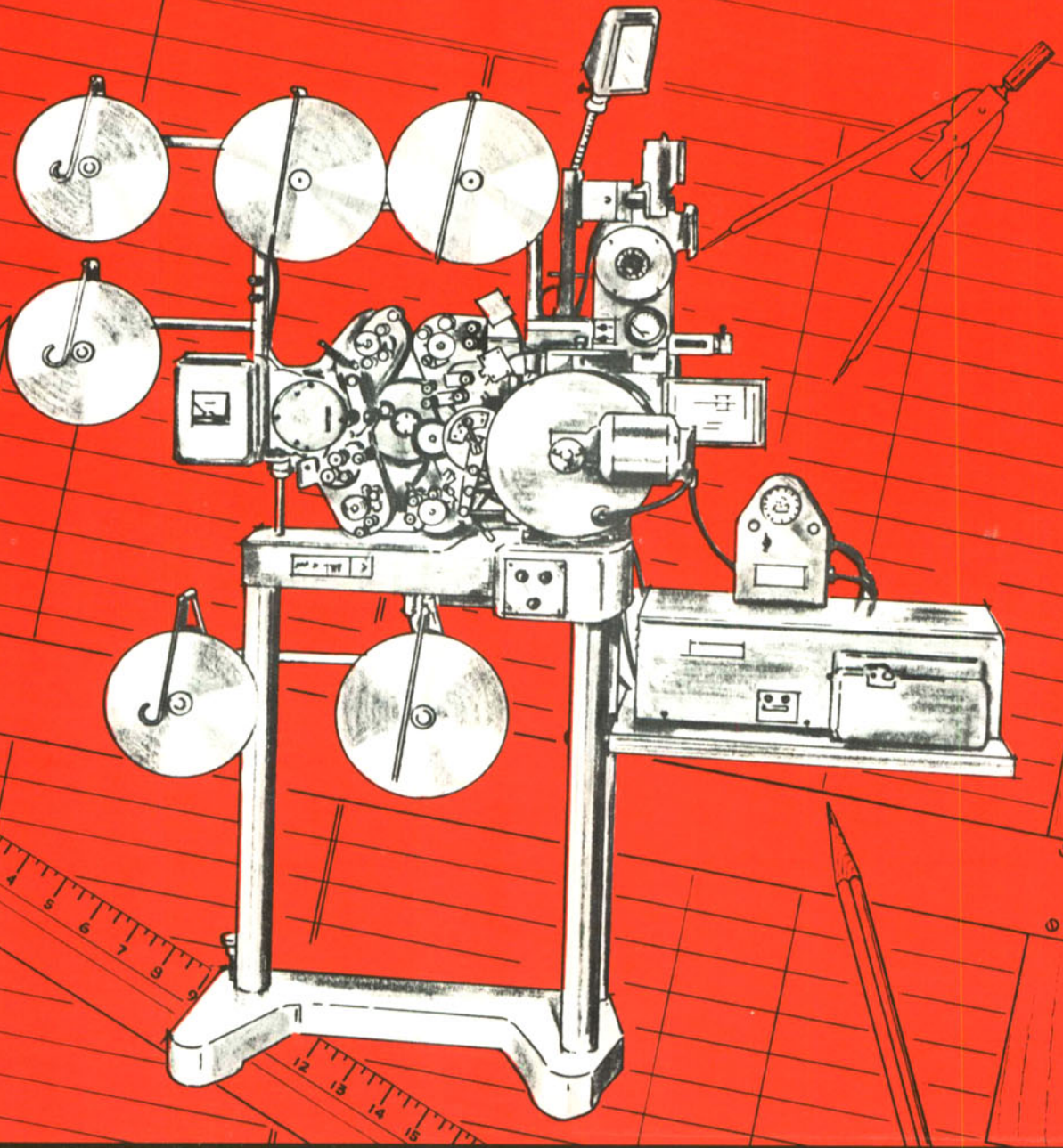
Medical uses are not as prevalent, but scientists use high-speed photography in the study of the heart, larynx, eardrum, muscular reaction, and body functions. High-speed microphotography is used in the National Institutes of Health for cancer studies, and we know of cases wherein ultra-high-speed equipment is required to formulate the techniques essential for the study of human reactions to explosive phenomena.

The field of aviation has grown up with high-speed photographic techniques. Our antiquated propellers were perfected as a result of studies made possible by this research tool. Jet engines have been studied for motor burning characteristics, temperatures, and other parameters. All aircraft designers utilize nearly all of the types of systems in their studies of vibrations, air flow, motors, flight characteristics, and other mechanical, electrical, or aerodynamic features.

Simple high-speed photography has even entered the field of sports. Our photo-finish cameras study of golf swings to determine that the highest velocity of the club head



Bell & Howell announces
The new "JM"
continuous 16mm Film Printer



advanced planning with modern design

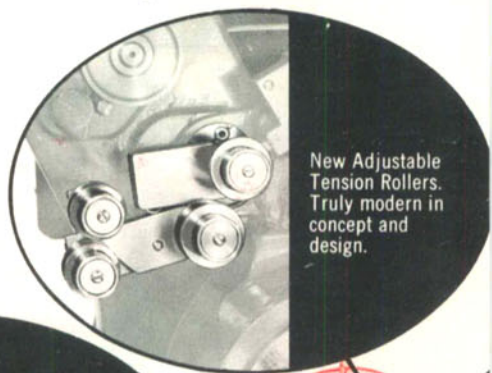
With the new "JM" Printer you'll be "future-proofed" by Bell & Howell's long-range planning for the growing film laboratory. Costly obsolescence need not overtake YOU! New progressive developments have already been provided for in the sweeping new advanced design and engineering of this revolutionary printer.



Bell & Howell *Continuous Film Printer*

The "JM" brings progressive improvements to the film laboratory

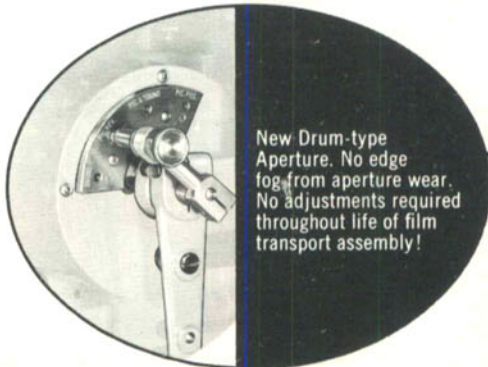
- The 100% ball-bearing film transport system will extend the quality printing life of any film. With the "velvet treatment" of this transport, film literally flows through the entire printer on ball bearings.
- Amazingly improved picture steadiness!
- Much higher image resolution.
- New built-in Edge 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.



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, assures better printing contact for greatly improved image resolution. Another safeguard for original films.



New Drum-type Aperture. No edge fog from aperture wear. No adjustments required throughout life of film transport assembly!



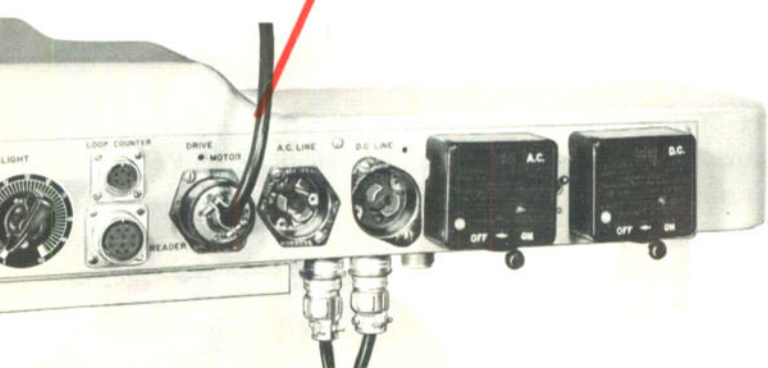
Ball-bearing rotating shoulder supports edge of film opposite drive sprocket to transport film in flat, even plane past the aperture.



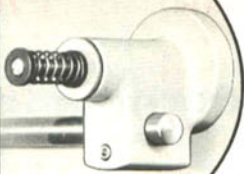
Tight Winds may be substituted for take-up flanges. Quick interchange feature. When positive exceeds 1600 feet, tight winds are recommended.



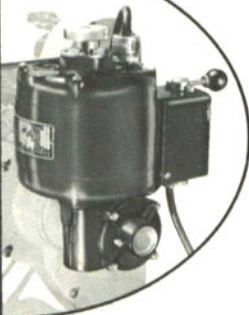
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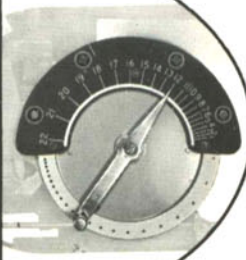
Adjustable hold-back tension is now provided on both negative and positive feed flanges to further improve picture steadiness.



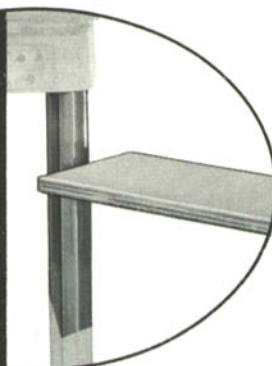
New quiet, precision-speed Direct Drive. Awkward belts and pulleys are gone. Remarkably improved picture steadiness! Instant selection of 60 or 120 feet per minute.



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



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



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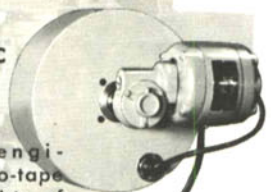


6190 SOUNDHEAD ASSEMBLY

Provides for printing composite picture and sound positive from separate picture and sound negatives in one pass. Available as factory installed accessory on new 16mm Printers or in kit form for field installation on existing printers. No special tools required.
Price \$2,875.00

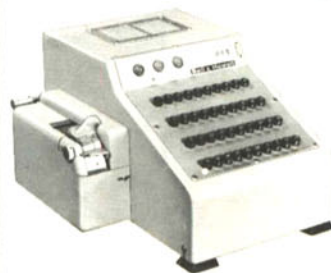
6220A AUTOMATIC SHUTTER CONTROL

Precision engineered electro-tape control. Consists of electro-selector and tape reader. Selector replaces manual shutter index dial and pointer. Reader sets on work table. Completely automatic printing electronic accuracy increases productivity in your laboratory. Easy to install.
Price \$3,500.00



6170 PROGRAM PERFORATOR

Streamlined companion for the Automatic Shutter Control. Operates like an adding machine. Programs shutter changes faster than you can write. "Memorizes" entire program in advance of production, minimizes possibility of operator error, and substantially increases film printing output.
Price \$2,200.00



Other Accessories

A Fader attachment and a Loop-tree Control Kit for continuous loop printing are also available.

Information and prices on request.

All prices shown are F.O.B. Chicago, Illinois and are subject to applicable local taxes.

Bell & Howell planned selective modernization

For those laboratories interested in delivering higher quality prints through a planned program of modernization, the following choices are available.

	GROUP A includes	GROUP B includes	GROUP C includes	GROUP D includes	GROUP E includes	GROUP F includes
Improved film transport having rotating shoulder support, new jaw, weights, rollers, edge light printing, direct drive motor.	X	X	X	X		
Film transport as above except for motor. Uses present belt drive.					X	
Triplex base with built-in push buttons and electrical distribution panel.	X					
2000 ft. torque take-up flanges or optional tight-wind.	X	X	X			X
2000 ft. supply flanges.	X	X				X

Retain only lamphouse, shutter assembly, pedestal base, and present supply flanges.

Replace only film transport (butterfly) on JC Models having torque take-ups.

Retain only lamphouse, shutter assembly and pedestal base.

Replace only film transport (butterfly) on older printers having friction (belt driven) take-ups.

Retain only present lamphouse and shutter assembly.

Replace only present supply and take-up flanges with new 2000' capacity torque take-ups.

All units can be integrated in the new Bell & Howell Related Printer Accessory Program. Whether you choose maximum modernization (Group A) or merely wish to increase film capacity (Group F) we stand ready to offer you the benefit of 50 years of leadership in the production of motion picture equipment.

Bell & Howell Professional Equipment

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has been reached at the time of impact, the curving of a baseball, and human or animal running styles have all been studied through this technique.

High-speed photography has not only been a tool for fault finding in mechanical motion, but has been a most valuable tool in the field of research in explosive phenomena, dynamic characteristics of machine and nature, the chemistry of condensation and vaporization in volatile liquids, and the study of outer space. It seems, since we are continuously finding new fields in which proven techniques have become applicable, that every field of science and engineering now has something to gain through the correct usage of high-speed photography.

Tuesday, September 1, 1959

PARTICIPATION BY FEDERAL AGENCIES IN FIFTH INTERNATIONAL CONGRESS ON HIGH-SPEED PHOTOGRAPHY

Mr. MAGNUSON submitted the following concurrent resolution (S. Con. Res. 75); which was referred to the Committee on Interstate and Foreign Commerce:

Whereas photographic techniques which can magnify the time scale of scientific phenomena are extremely important to the research and engineering activities of every nation; and

Whereas the First International Congress on High-Speed Photography was held in Washington, District of Columbia, in 1952, having been organized and conducted under the sponsorship of the Society of

Motion Picture and Television Engineers; and

Whereas subsequent meetings were held at two-year intervals in Paris, France; London, England; and Cologne, Germany; and in each instance these meetings have received the recognition and the support of the governments of the respective host countries; and

Whereas, with each meeting, the International Congress on High-Speed Photography has grown in stature and in prestige; and

Whereas the Society of Motion Picture and Television Engineers is once again sponsoring the International Congress on High-Speed Photography in Washington, District of Columbia (this fifth congress will be held in October 1960); and

Whereas the Congress is fully appreciative of the importance of assuring that this international scientific meeting is conducted in a manner which will bring credit and enhanced prestige to the United States of America as the host nation; and

Whereas it is the belief of the Congress that—

(1) the democratic environment of the free world is the best environment for achievement in science; and

(2) scientists and engineers have special advantages and opportunities to assist in achieving international understanding since the laws and concepts of science cross all national and ideological boundaries; and

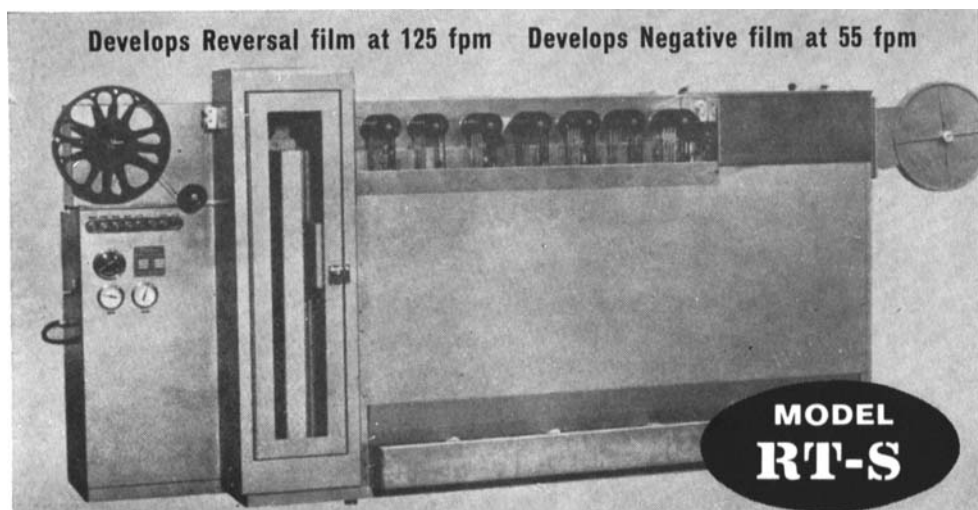
Whereas the Congress is interested in (1) promoting international understanding and good will; (2) enhancing the excellency of

American science, both basic and applied; and (3) furthering international cooperation in science and technology by creating the necessary climate for effective interchange of ideas; Now, therefore, be it

Resolved by the Senate (the House of Representatives concurring), That it is the sense of the Congress that all interested agencies of the Federal Government should participate actively to the greatest practicable extent in the Fifth International Congress on High-Speed Photography to be held in Washington, District of Columbia, in October 1960 under the sponsorship of the Society of Motion Picture and Television Engineers.

[Chairman of the Fifth International Congress is Max Beard, U.S. Naval Ordnance Laboratory, Silver Spring, Md. Names of other officials of the Congress and of delegates from eleven foreign countries appeared in the September Journal, p. 638. For those who plan to present papers, Author Forms are available from headquarters and from officials of the Congress. Participation by instrumentation and high-speed photography specialists from all parts of the world and a comprehensive display of instrumentation equipment will make this Congress a worthy successor of those previously held in France, England and Germany. Commenting on the Senate Resolution, President Norwood L. Simmons has said: "The SMPTE expects, with the full cooperation of government and industry, to organize and conduct this Congress in a manner which will bring credit and enhanced prestige to the United States."]

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Develops Reversal film at 125 fpm Develops Negative film at 55 fpm

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- New impingement-type film Dryer
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- New low-pressure type air squeegee
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Wherever quality results are demanded in the fastest processing time . . . or wherever illumination is inadequate for quality image density . . . this newest, fastest combination 16MM Reversal and Negative/Positive film processor . . . the Filmline Model RT-S will consistently provide the solutions to these processing problems.

For in-plant, high-speed photography . . . for television stations, racetracks, and motion-

picture film labs . . . the Filmline Model RT-S is the ideal machine . . . providing quality results at speeds to 125 ft./minute . . . and permitting increases of the ASA index 1000% on DuPont or Eastman Reversal Emulsions.

Fully equipped, ready for immediate operation the Model RT-S offers you high cost film processing features for the low price of only \$8,450.00.

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