

Gamma Scientific Inc., 3777 Ruffin Rd., San Diego, CA 92123, a manufacturer of light-measuring instruments, has appointed Eastern Instrumentation Corp. as its manufacturers' representative for the states of Maryland, Virginia, West Virginia and Washington, D.C. The firm has also recently appointed distributors in France, Italy, Netherlands, England, Germany, Spain, Switzerland, Canada, Japan, Israel, Brazil, Hong Kong, India and Argentina.

Philips Broadcast Equipment Corp., One Philips Parkway, Montvale, NJ 07645, has announced that VCI, Inc., (Video Cassette International) will market the Norelco VCR (video cassette recorder) in conjunction with VCI's library of program material. The Norelco VCR system is the American NTSC version of the N.V. Philips VCR in Europe. The Norelco VCR records and plays back in either color or monochrome. The unit weighs 31 lb and sound and picture are carried on ½-in magnetic videotape encased in a small cassette.

James R. Spencer, a consulting specialist with a background in videotape and film productions for industry has been accepted for inclusion in the 1973 issue of the *Directory of Consulting Specialists*. The directory presents information on a selected number of independent consultants. It is published by SiSi, box 42576, Los Angeles, CA 90050. Mr. Spencer's office is at 1861 Hillside Dr., Glendale, CA 91208.

Gerald Citron has been appointed Director of Marketing of VCR Products for Phil-

ips Broadcast Equipment Corp., One Philips Parkway, Montvale, NJ 07645, it was announced by John S. Auld, President. He has been with North American Philips Corp. since 1966. In his new post he will be responsible for the direction and supervision for the company's Norelco video cassette recorder marketing activities. The Norelco VCR records and plays videotape cassettes in color through a television receiver.

Andrew Bryan Kalish has been appointed Sales Manager, New England Region, for the Motion Picture Lab and Slide and Filmstrip Lab divisions of Bebell, Inc., and for X-Ray Copies Corp., a wholly-owned subsidiary of Bebell, Inc. Mr. Kalish has had intensive in-plant experience in laboratory operations for all three organizations.

James R. Hartzler has been appointed Vice-President of Marketing and Sales for Reeves Cinetel, Inc., 304 E. 44 St., New York, NY 10017, it was announced by C. Robert Fine, President. Mr. Hartzler was formerly with Teletape Corp. where he was Vice-President/National Director of Marketing. In his new post he will be responsible for the creation and implementation of an overall marketing plan for Cinetel as well as for the development of increased sales and the improvement of existing customer service.

Abbott Sydney has been appointed Field Sales Manager for Cinema Products Corp. it was announced by Ed DiGiulio, President. Mr. Sydney was formerly Vice-President of the Arriflex Corp. of America with

primary responsibilities for West Coast sales of Arriflex products. In his new post he will be responsible for national sales of professional motion-picture equipment. His immediate efforts will be concentrated on the CP-16 TV news and documentary 16mm cameras designed and manufactured by Cinema Products Corp.

Herbert Ashcroft has been appointed Senior Vice-President of Manufacturing Services for Bausch & Lomb, Rochester, NY 14602, it was announced by Jack D. Harby, President. He has been with the firm since 1950. In his new post he will be responsible for providing planning and control services for plant and facilities engineering and procurement for all of the company's operating divisions. In addition he will continue to be responsible for advanced process research and the Glass and Materials, International Glass and Rochester Engineerings and Maintenance Divs.

Bernard Weinblatt, President of Eclair Corp. of America, 73 S. Central Ave., Valley Stream, NY 11580, has been appointed President and Chairman of the Board of Fodel S.A. The firm is the parent corporation of the manufacturing and distributing facilities of Eclair-Debrue products and related items.

Harold Hinkle has been appointed Vice-President in charge of plant operations for Movielab/Hollywood Inc., 6823 Santa Monica Blvd., Hollywood, CA 90038. He has been with Movielab since 1969, first as production manager and later as Vice-President in charge of production.



The Audio Visual Source Directory, Spring-Summer 1972, is available from Motion Picture Enterprises Publications, Inc., Tarrytown, NY 10591. It is priced at \$2.50. The 80-page Directory lists names and addresses of manufacturers and suppliers of audio-visual equipments. Among other listings, it lists alphabetically, state by state, distributors of motion-picture and slidefilm libraries for sale or rental. There is also an alphabetical list of suppliers of motion pictures and slidefilms for free loan. The *Directory* also lists names and addresses of associations in the audio-visual field, including state and educational associations.

Technical Data — Black-and-White Reversal Films, a new data booklet, A/9, December 1971, in the Motion Picture and TV Films series is now available from Agfa-Gevaert, B-2510 Mortsel, Belgium; and 275 North St., Teterboro, NJ 07608. Two camera films are described, as well as a film for making release prints. The camera films are: Gevapan 30 Reversal, Type 8.63 with a daylight ASA rating of 64, tungsten light 40; and Gevapan 36 Rever-

sal, Type 8.80 with ASA ratings of 320 and 200 for daylight and tungsten light. Both these panchromatic films are recommended by the manufacturer for use in television transmission, as well as for normal projection. Both are on a light blue triacetate safety base which is said to enhance image quality in normal projection and to give a maximum transparency to illuminants of about 450 nm as used in television transmission by electronic methods. The print film is called the Duplicating Reversal, Type 8.91 and is intended for printing from reversal originals or for duplicating positive films. Prints on this film are intended for cinema projection but they are also adequate for television transmission. The relative exposure coefficient given is 25, taking the AGFA-Gevaert Positive Fine Grain film, Type 5.61 as 100. This film is also on a light blue triacetate base and the recommended gamma for all three films is 1.1. Lists of normal packings are given, but variations for special requirements are possible.

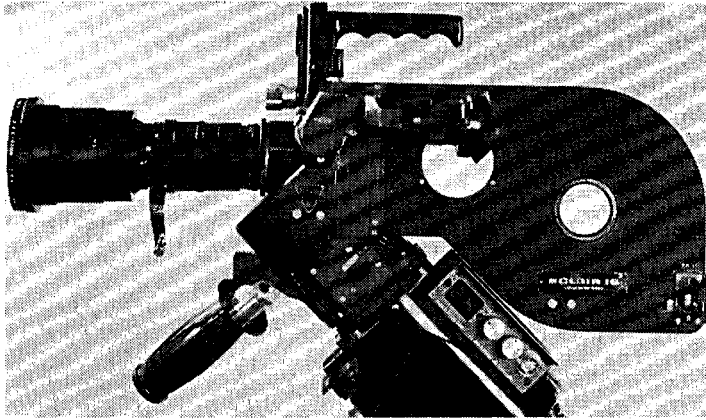
BOD₅: Five-Day Biochemical Oxygen Demand of Kodak Photographic Chemicals (Kodak Publication No. J-41) is a booklet explaining biochemical oxygen demand (BOD) and containing tables that give the 5-day BOD values of chemicals used in processing Kodak films and papers. The booklet is available from Eastman Kodak Co., Dept. 412-L, 343 State St., Rochester, NY 14650. The booklet is

fifth in a series of booklets developed to help photographic processors and other users of photographic materials toward the achievement of a cleaner environment. The booklet explains that BOD is the most common measure of waste load of an effluent. This measure estimates the rate at which material degrades biologically during waste treatment or in a stream. Usually it is expressed as a concentration in units of milligrams or as a total quantity per unit of time (for example, pounds per day). BOD is dependent on time and, generally, is measured over a 5-day period (BOD₅).

By using the tables and formulas given in the booklet, a processor can estimate his waste loads by tabulating the amounts of chemicals he uses and multiplying this figure by the BOD₅ values given in the tables. All Kodak processing chemicals and their BOD₅ are listed in the booklet. The booklet also contains sample calculations to help processors determine the estimated BOD₅ load discharged into a sewage system in photographic effluents by an individual processing laboratory. The calculations are based on a test method described in *Standard Methods for the Examination of Water and Waste Water*, a publication of the American Public Health Assn.

Silver Recovery With the Kodak Chemical Recovery Cartridge, Type P and Type 3 is the new title for the extensively revised Kodak Publication No. J-9, avail-

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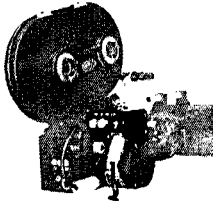


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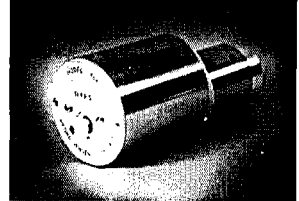
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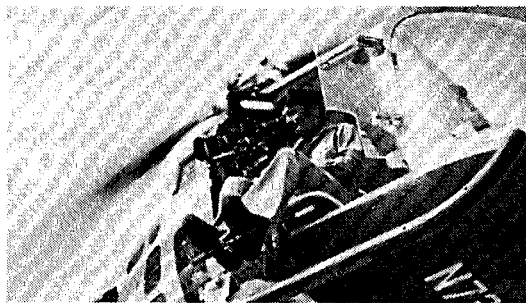
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The Dolby System

An important advance in audio technology permits better motion picture sound tracks to be made.

Optical sound: the strong link in the old chain.

Sound was introduced to motion pictures at a time when techniques for electronic reproduction of sound were relatively inaccurate. Modern electrodynamic loudspeakers had been introduced only a few years before, and their frequency response was severely limited by modern standards. The microphones used were also comparatively crude, in terms of their sensitivity, frequency range, and distortion. The newly developed optical sound track was therefore at least as good as any of the other components with which it was associated in the recording and reproducing chain.

1940: the case against progress.

By 1940, the electronic reproduction of sound had progressed considerably, so that the deficiencies of the optical sound track became clearly audible. Equalization applied to overcome intelligibility problems caused by the limited range of earlier equipment now produced unnatural dialogue quality. Shutter-type ground noise reduction, although effective during silent periods, was decreasingly useful as film wear added the noise of dust and abrasion to grain noise. Distortion introduced by waveform clipping, due to overload, equipment limitations and dialogue equalization could be heard clearly, and unpleasantly, through the newest loudspeaker systems.

The great Academy compromise.

Because compatibility was then, as it is now, justifiably a primary concern of the motion picture industry, the practice commonly used, and finally sanctioned as the 'Academy' standard was to define the performance of new theatre sound systems so as to best suit the presentation of existing product. Since this product, in turn, had been made for use with average theatre sound equipment then in use, the effect of the standard has been to withhold from application to motion picture theatres much of the progress which has been made in the science of sound reproduction. The same decision also meant that studio practice in mixing and dubbing would

continue as before, since little or no change was to be expected in theatre sound system characteristics.

Optical tracks: the sound of the future.

Modern technology, particularly the introduction of magnetic recording, permits the production of optical sound tracks considerably superior to those offered to audiences today. Recording, editing and mixing can readily be carried out in the film studio, as in the music recording studio, to produce magnetic master recordings with extremely low noise and distortion content, and frequency bandwidth which exceeds the hearing ability of most listeners. If care is taken in the transfer of the track from magnetic to optical, and the best available technology applied, optical tracks can be produced which are very similar in sound to magnetic tracks.

Dolby equipment can reduce the noise of production masters.

During film production, Dolby 361 noise reduction units can substantially reduce the build-up of magnetic tape and film noise which ordinarily accompanies successive stages of transfer, pre-mixing and dubbing. During the preparation of the sound track for Stanley Kubrick's 'A Clockwork Orange', the Dolby system contributed importantly to the unusually quiet track on the release prints of this film. As the number of film studios equipped with Dolby units increases, this application is becoming common.

How the Dolby system improves optical sound tracks.

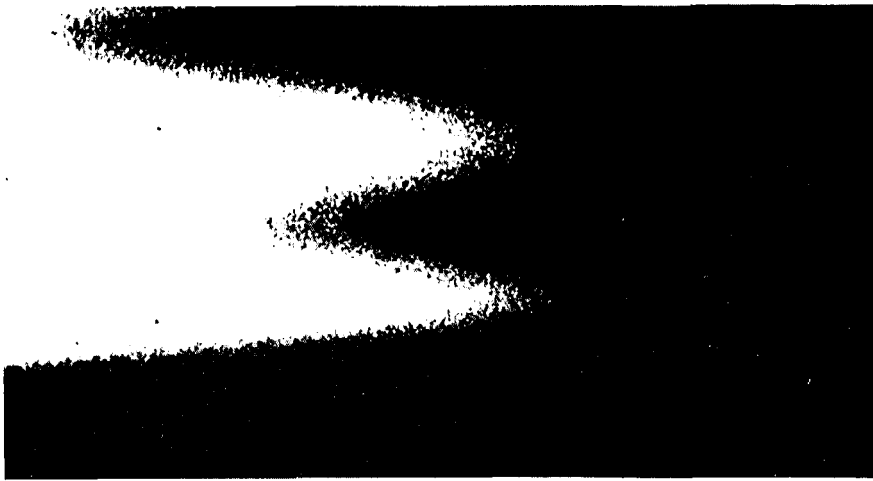
The Dolby system works by increasing the level of low-level signals during recording, before the noise of the tape or film is present, and then reducing the level of these same signals during playback to restore exactly the original sound. When the Dolby system is used to record and play an optical sound track, the result is unusual background silence, even when the Academy characteristic is not used. Moreover, without the Academy characteristic extended high-frequency response and lower

distortion are also obtained, the latter because dialogue equalization and the overload of the optical track which it usually causes can be substantially eliminated. Instead of Academy playback conditions, theatre sound systems with flat frequency response can be used. When a Dolby-encoded sound track is played through a typical Academy sound system in a theatre, the result is quite satisfactory because the increased brightness of sound of the Dolby-encoded signal is subjectively compensated by the high-frequency attenuation of the Academy characteristic.

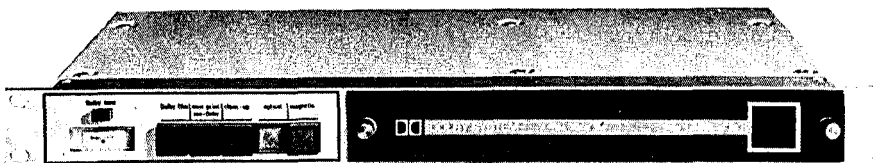
Principles of Dolby noise reduction.

Four signal processing techniques used in the Dolby noise reduction system insure effective suppression of noise without signal degradation, so that the system is used in even the most critical recording applications. First, the system is symmetrical, ie, complementary processing is applied during recording and playback, with particular attention to the complete restoration of the original signal. Second, the system operates independently in four spectral bands, eliminating noise modulation and other effects which accompany the action of noise reduction circuits actuated by level variations alone, however sophisticated. Third, the compression and expansion of signals upon which the action of the Dolby system is based is accomplished by simple in-phase or out-of-phase addition of voltages, a technique which cannot, in itself, introduce distortion. Fourth, the system acts only upon signals at levels too low to mask the presence of noise; during high-level passages, when a listener might detect level fluctuation, the system is inoperative.

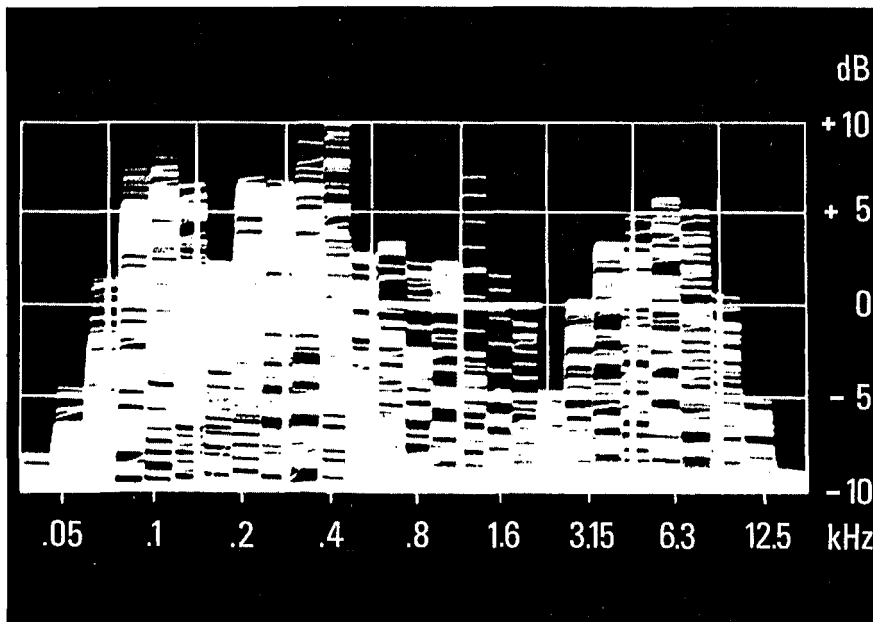
The key to achieving superior optical sound track performance is the Dolby noise reduction system, already an internationally recognized method of maintaining highest professional standards throughout the music recording and communications industry. More than 8000 channels of professional (Type A) Dolby noise reduction are in use.



Photomicrograph of a section of an optical sound track. Simpler to duplicate and lower in cost than magnetic tracks, the optical track has not been used to its full potential during the forty years since its introduction.



Dolby 364 Cinema Noise Reduction Unit, for use in theatres during playback of Dolby-encoded optical and magnetic sound tracks. The 364 unit also provides optimum equalization for sound tracks in current releases, and a newly developed 'clean-up' circuit for use with conventional tracks which are worn or noisy.



Audio spectrum of a five-second sample from a wide-range recording of male speech. The section chosen contains vowels, consonants and sibilants. The level of the high-frequency components indicates a high probability of overmodulation distortion even with only moderate application of typical speech pre-emphasis. When Dolby-encoded and decoded optical sound tracks are used, the pre-emphasis is unnecessary, yet superior intelligibility is obtained. Moreover, Dolby-encoded optical sound tracks provide fully satisfactory sound with conventional 'Academy'-equalized playback systems, retaining compatibility.



'Dolby' and the double-D symbol are trade marks

Dolby Laboratories Inc

1133 Avenue of the Americas New York NY 10036
Telephone (212) 489-6652

346 Clapham Road, London SW9
Telephone 01-720 1111

The model 364 is distributed throughout the world (except USA) by Rank Film Equipment, England.

A special film presentation, 'A Quiet Revolution', has been prepared which explains and demonstrates the application of the Dolby system to film production and exhibition, and includes demonstration sequences from current and forthcoming productions. Either of the Dolby offices listed below can arrange a showing, or supply further information, including technical papers containing relevant data.

Video Cartridge, Cassette and Disc Player Systems

Proceedings of the Symposium

OCTOBER 7 AND 8, 1971, MONTREAL

Stanley F. Quinn, *Chairman*

From the Foreword: It was the purpose in organizing the Symposium to examine the new technology of videoplayer systems and to consider the likely impact on education, industry and the home. It was hoped to attract not only engineers but also educators and other professionals interested in this new medium of communication. There were four sessions: Perspective Session, in which particular emphasis was placed on the social and economic aspect of the new technology; Utilization Session, in which plans and experience of prospective users were outlined; and two Technical Sessions, which provided a review of the technology of storing audio-video information and new information about videoplayer systems. The matter of the multiplicity of systems standards received particular attention in several of the papers on both days.

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Video Cassettes — Boom or Bust? • *Gordon B. Thompson, Bell-Northern Research Labs, Ottawa, Ont.*
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Over 70 illustrations approx. 200 pages 5½ x 8½ in. Softbound
Price: \$6.50 Discounts to SMPTE members, libraries, and booksellers:
1 to 4 copies, 20%; 5 to 49 copies, 25%; 50 or more, 33⅓%.

Society of Motion Picture and Television Engineers
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able from Eastman Kodak Co., Dept. 412-L, 343 State St., Rochester, NY 14650. The new J-9 pamphlet outlines procedures for recovering silver from photographic processing solutions using the Kodak chemical recovery cartridges, Type P. It contains a new section on the new Type 3 cartridge, which was designed especially for users whose volume requires frequent changes of the 5-gal, Type 1-P cartridges. The J-9 pamphlet explains how to install and use the equipment and how to use Kodak silver estimating test books. A table in the previous J-9 publication outlining the type of cartridge recommended for particular types of solutions has been considerably expanded in the revised publication.

The Quick Reference Catalog listing the firm's video products is available from Dynasciences Corp., Video Products, Township Line Rd., Blue Bell, PA 19422. The catalog includes photographs and descriptions of the products.

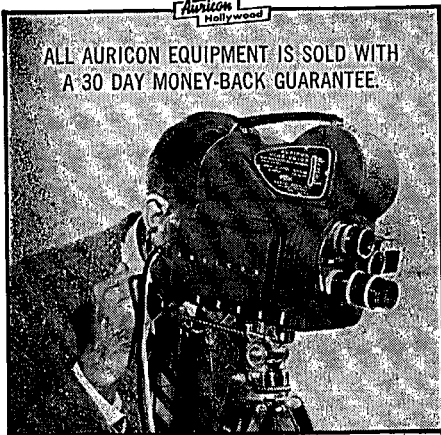
The CATV Pathmakers, a 16-page booklet describing the various phases of CATV operation and illustrated in color, is available from CATV Operations, Electronic Components Group, GTE Sylvania, Inc., Johnston St., Seneca Falls, NY 13148. The booklet is divided into six sections: The Planners; The Installers; The Field Engineers; The Product Designers; The Manufacturers; and The Marketers.

Birns & Sawyer, Inc., has announced a 64-page rental catalog issued for the convenience of producers filming in Israel and nearby countries. The new catalog is the source for a complete line of production equipment ranging from rolls of tape to Mitchell BNC Reflex cameras. In addition to the usual rental equipment, several transport vehicles have been made available, including generator trucks, auxiliary crew vehicles, a grip-electrical truck, Israel's first film location vehicle, a 25-ft Explorer Motor Home, and a complete "Western Town." The catalog is available upon request from Birns & Sawyer, Inc., 1026 N. Highland Ave., Los Angeles, CA 90038, or the Tel Aviv facility, Birns & Sawyer (Israel) Ltd., 14 Hess St., Tel Aviv, Israel 63-324.

ANSI Standard PH2.32-1972, Viewing Conditions for Appraisal of Color Quality and Color Uniformity in the Graphic Arts, is available from American National Standards Institute, 1430 Broadway, New York, NY 10018. The Standard describes recommended viewing conditions that will minimize errors and misunderstandings and maximize the efficiency with which visual comparisons are made during color quality and color uniformity appraisal. Experimental viewing conditions for suggested standard lighting were devised, manufactured and tested during the development of the Standard.

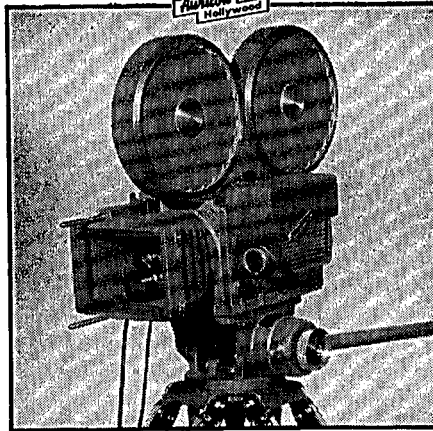
AM, FM Measurements With the Transfer Oscillator, Application Note 141, a 20-page illustrated booklet, is available from Hewlett-Packard Co., 1601 California Ave., Palo Alto, CA 94304. The booklet contains six sections: General Theory and

AURICON 16mm Sound-On-Film for Professional Results!



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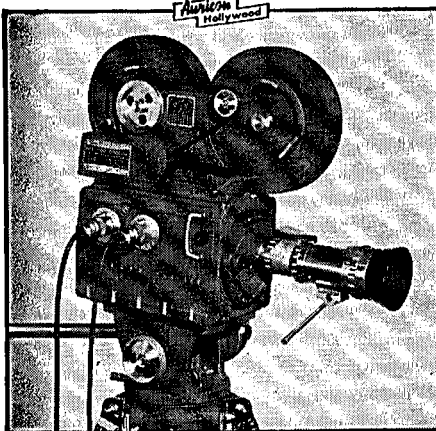
"CINE-VOICE II" 16mm Optical Sound-On-Film Camera.
 * 100 ft. film capacity for 2¾ minutes of recording; 6-Volt DC Converter or 115-Volt AC operation. * \$1180.00 (and up).



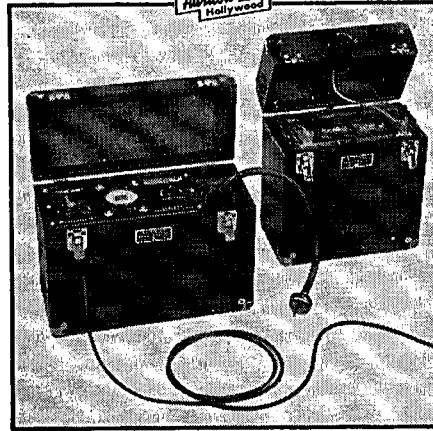
"AURICON PRO-600" 16mm Optical Sound-On-Film Camera.
 * 600 ft. film capacity for 16½ minutes of recording. * \$1820.00 (and up) with 30 day money-back guarantee.



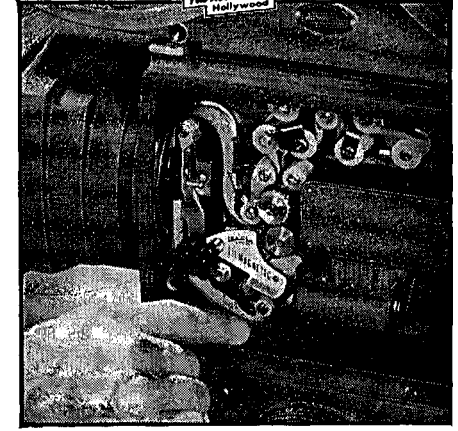
"SUPER 1200" 16mm Optical Sound-On-Film Camera.
 * 1200 ft. film capacity for 33 minutes of recording. * \$6425.00 (and up) complete for "High-Fidelity" Talking Pictures.



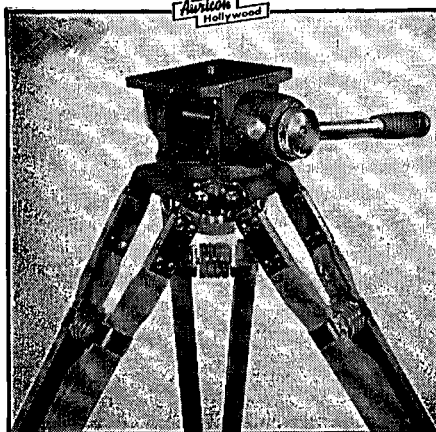
"PRO-600 SPECIAL" 16mm Light-Weight Camera.
 * 400 ft. film capacity for 11 minutes of recording. * \$1620.00 (and up).



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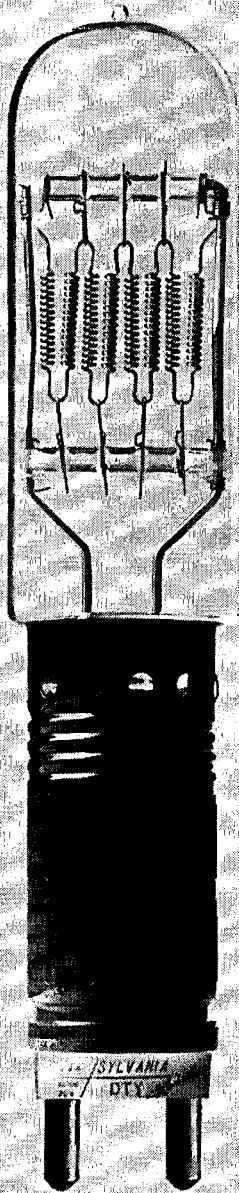


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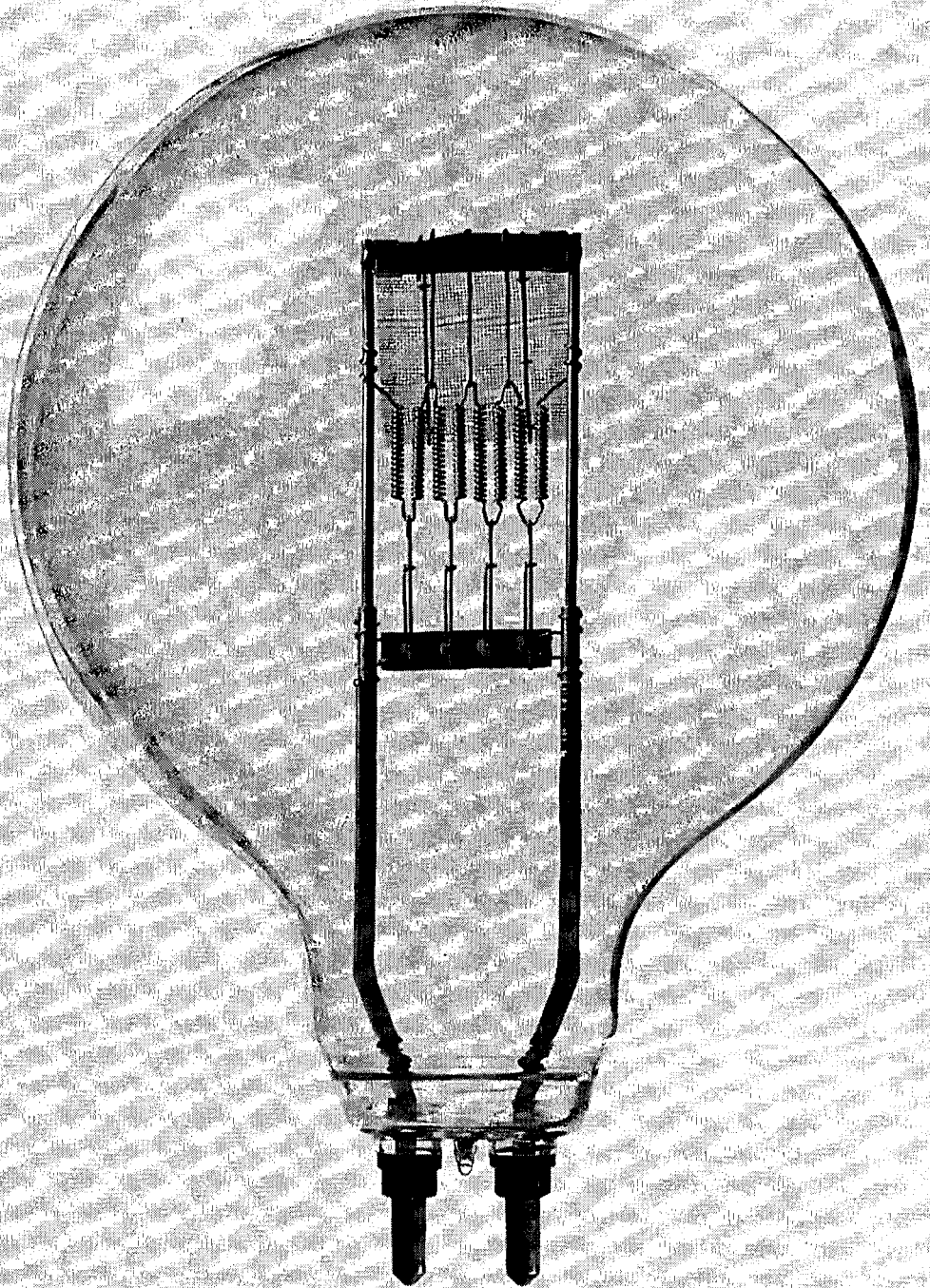


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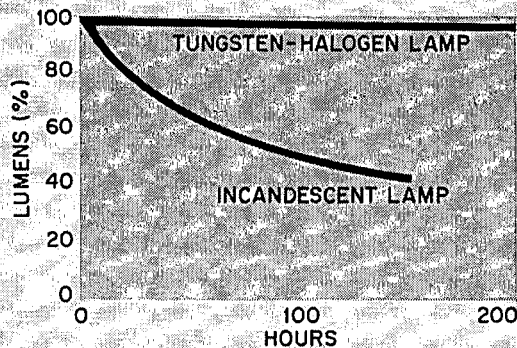
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10 KW INCANDESCENT LAMP.



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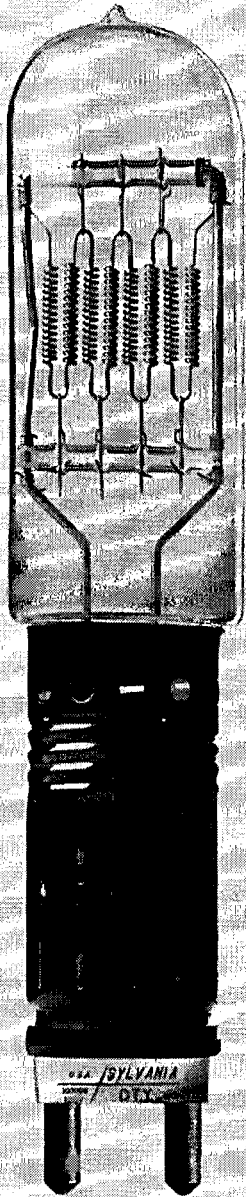
If you've ever watched those big, fat incandescents deteriorate, you know what a big, fat pain-in-the-neck that is. Their lumen output sinks and their color temperature drops, as the graph shows.

Now Sylvania tungsten-halogen lamps have come to the rescue.

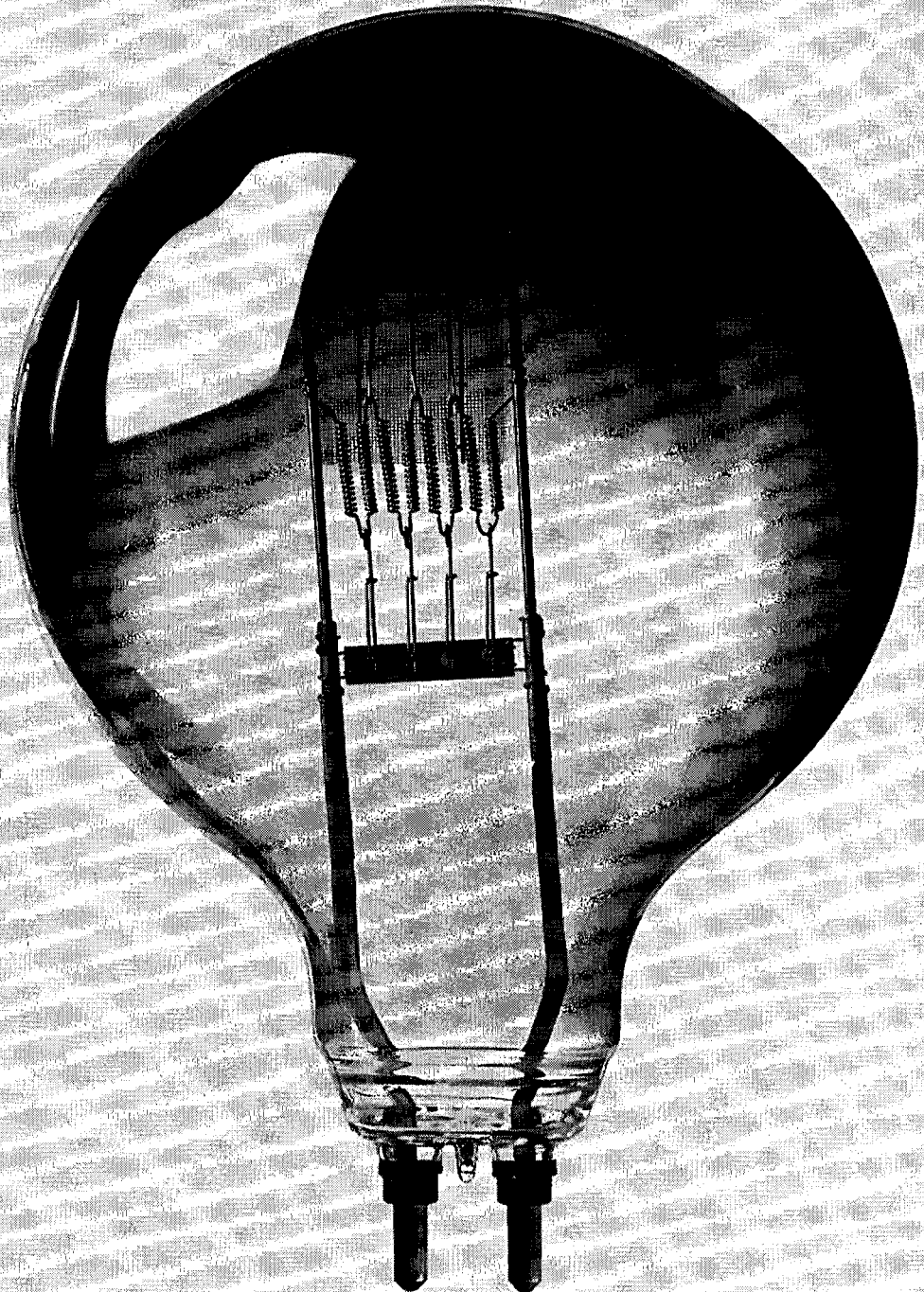
They don't blacken with age, so light output and color temperature don't go into a slump.

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10 KW TUNGSTEN-HALOGEN LAMP.



10 KW INCANDESCENT LAMP.

fiddling with the studio lights or camera settings. You get constant color rendition on color film and save money on print correction.

Tungsten-halogen lamps outlast the incandescents 2-to-1. (Or even 3-to-1, since you may have to throw away the blackened lamps before they conk out.)

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We've developed two complete lines of Sylvania tungsten-halogen lamps.

The first is a line of direct replacements. These lamps fit into the big, old sockets vacated by the big, fat incandescents.

The second is a line of even smaller tungsten-halogen lamps that you can use to replace our replacements once

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Operating Procedures; Pulsed RF; AM Measurements; FM Deviation and Incidental FM; RF Comb Generator; and E80-5245L Measurement System (18-40 GHz).

Two engineering data sheets on the control and shaping of sound are available from Fairchild Sound Equipment Corp., subsidiary of Robins Industries Corp., 15-58 127th St., College Point, NY 11356. One data sheet describes the Reverbertron, Model 659A, an artificial reverberation system for broadcasting and recording studios (*Journal*, p. 266, Mar. 1972). The second data sheet describes The Auto-Ten, an instrument designed to achieve automatic attenuation of signals or unwanted noise in broadcasting, sound recording and public address systems.

The ACR-25 automatic broadcast videocassette recorder/reproducer is described in an 8-page illustrated brochure (V407) available from Ampex Corp., Audio-Video Systems Div., 401 Broadway, Redwood City, CA 94063. The machine automatically plays short-duration programming (news, commercials, etc.) ranging in length from 10 s to 6 min.

The Camera Mart 1972 Rental Catalog is available from Camera Mart Inc., 456 W. 55 St., New York, NY 10019. The 56-page catalog lists new cameras and accessories. It also has a new videotape section. All types of equipments are listed including 35mm and 16mm cameras and accessories,

high-speed cameras, super-16 cameras, lenses and optics, tape recorders, projectors and projection equipment, film editing equipment, lighting equipment and grip equipment. The catalog also contains a list of unions, guilds and societies which includes addresses and telephone numbers.

Atlas Halogen-Plus tungsten-halogen lamps are described and illustrated in a folder in four languages (English, French, German, Italian). The lamps, intended for TV and motion-picture studio applications, range from 650 W to 5 kW. All the lamps have a color temperature of 3200 K. The leaflet is available upon request from Thorn Lighting Ltd., Thorn House, Upper St. Martin's Lane, London WC2H 9ED, England.

A new Bebell Service and Price Book is available from Bebell, Inc., 416 W. 45 St., New York, NY 10036. The book is bound in two sections. The first section is intended to provide quick and easy reference to Bebell's full range of color and black-and-white professional motion-picture laboratory services. The second covers professional slide and filmstrip laboratory services. Details of 16mm and super-8 filmstrip laboratory services are included.

Noris Record super-8 and dual-8 projectors and accessories are described and illustrated in color in a 4-page folder available from Karl Heitz, Inc., 979 Third Ave., New York, NY 10022. Noris Record projec-

tors are manufactured in Germany. Four models are described in the folder plus such accessories as combination film reels and splicers.

The Xenographic 500 High Intensity Slide Projector is described and illustrated in color in a 4-page brochure available from Optical Radiation Corp., 6352 N. Irwindale Ave., Azusa, CA 91702. The brochure provides a detailed description and specifications for the system.

The Media Mix Programmer, Tri-Cut Control and the Selectroslide 900 are described in illustrated data sheets available from Spindler & Sauppé, 13034 Saticoy St., North Hollywood, CA 91605. The Media Mix Programmer is a 27-channel audio-visual control device for automation of multi-screen dissolve and mixed-media shows. The Tri-Cut Control creates "cut" dissolves on each of three pairs of Kodak projectors for multi-screen presentations. The Selectroslide 900, a 500-slide capacity slide projector designed for professional use, incorporates innovations in optics, slide advance, feed registration, cooling and control.

Bolex super-8 cameras and projectors are described and illustrated in color in a 16-page booklet available from Paillard Inc., 1900 Lower Rd., Linden, NJ 07036. The cameras are intended for professional or advanced amateur use. The booklet presents technical data with explanations and illustrations of what the cameras can do.

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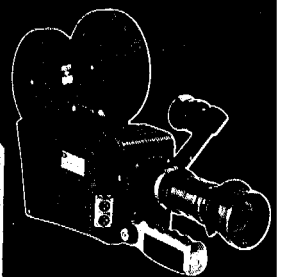
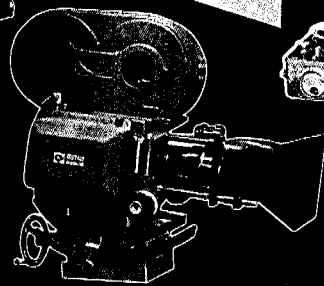
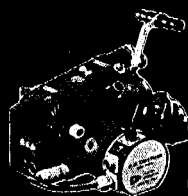
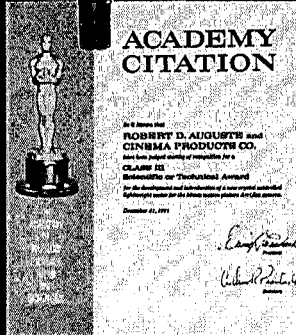
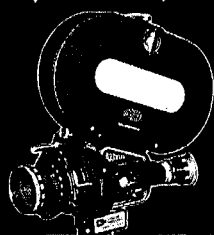
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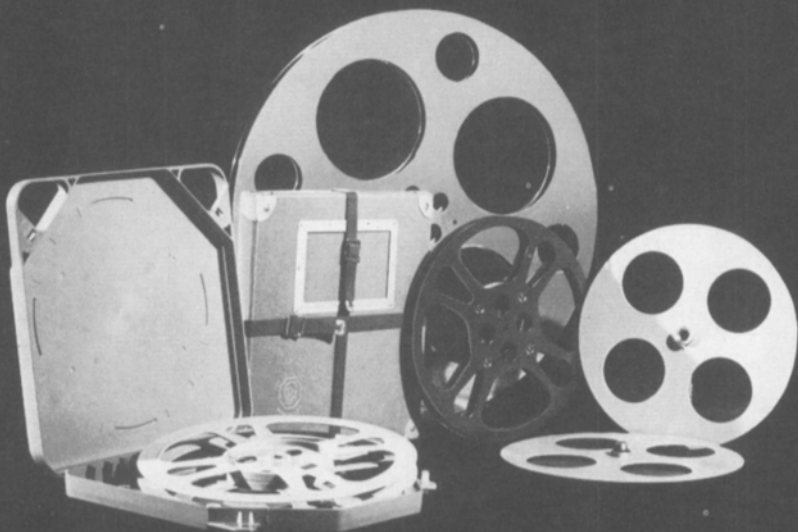
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The CVI 1972 Short Form Catalog listing 27 instruments in the video data processing field is available from Colorado Video, Inc., P.O. Box 928, Boulder, CO 80302. The devices described and illustrated in the catalog include data display devices, video analyzers, video disc recorders, special effects, image enhancers, test and sync generators and TV-to-Computer interface equipment.

Phase and Amplitude Response of a Variable Electronic Filter, a 16-page Application Note (IAN-101) is available from Ithacon Inc., 735 W. Clinton St., Ithaca, NY 14850. The booklet provides a simple, general method for determination of phase and amplitude response of high-pass, low-pass and bandpass filters for four-pole Butterworth and Bessel filters. Tables and normalized plots of phase and amplitude response of high-pass, low-pass and commonly used bandpass settings are provided. Data, including cutoff frequencies, center frequency, bandwidth, noise bandwidth and filter gain, are tabulated for bandpass settings.

The Ultrabright System for TV background projection is described and illustrated in a 4-page brochure available from Spindler & Sauppe, 13034 Saticoy St., North Hollywood, Calif., 91205. Photographs of a TV studio installation are provided together with an explanation of the Ultrabright method of creating background images with 35mm slides.

Switchcraft audio accessories are described and illustrated in a 28-page catalog (A-404a) available from Switchcraft, Inc., Sales Dept., 5555 N. Elston Ave., Chicago, IL 60630. Equipments listed include phone jacks and plugs, switches, connectors, adapters and molded cable assemblies.

Marconi instrumentation and test equipments are described and illustrated in a leaflet available from Marconi Instruments, Div. of English Electric Corp., 111 Cedar Lane, Englewood, NJ 07631. A number of types of instruments are described including FM/AM signal generators, digital communications and P.C.M. test gear, TV transmission test equipment and a number of others.

Cameras, projectors, lenses and accessories are described in a 104-page catalog available from Interstate Photo Supply Corp., 168 Glen Cove Rd., Carle Pl., NY 11514. The catalog lists a number of new products including Bauer cameras and projectors, Soliger lenses and accessories and automated Ultrablitz electronic flash units.

NTIS Publications

The publications listed below are presently available from National Technical Information Service (NTIS), Springfield, VA 22151. Unless otherwise noted each report is \$3.00 (microfiche 95 cents). For the convenience of the reader, titles and brief descriptions of the publications have been grouped under five categories.

Acoustics

AD-694 035, *Acoustic Imaging by Holo-*

graphy, R. B. MacAnally and C. Yeh, 249 pp. Describes a scanning technique for generating acoustic holograms of underwater objects.

Communications

AD-738 600, *Color Television*, 71 pp. Bibliography pertaining to color display systems and their technical advancements. Included are references to current and experimental display systems being developed as well as to characteristics of various state-of-the-art color tubes. Methods of wavefront reconstruction and a new approach to instruction using color television are discussed.

AD-738 039, *Television Station Performance and Revenues*, R. E. Park, 16 pp. Discusses relationship between broadcasting of public interest programs and revenues.

Information Technology

AD-701 600, *Microfiche Viewing Equipment*, R. F. Gordon, 55 pp. Descriptive directory of microfiche readers and reader/printers manufactured in the United States. Photographs and detailed listings of features and specifications are given for each of the 47 models surveyed.

PB-192 294, *Innovations in Communications Conference, April 9 and 10, 1970, American Society for Information Science and Clearinghouse for Federal Scientific and Technical Information, July 1970*, 204 pp. Proceedings of conference held at the National Bureau of Standards in Gaithersburg, Maryland. Topic areas cover a broad range of innovations, from an overview of information systems and long-range communications plans of government and professional societies to specific innovations in such diverse areas as group communications and satellite communications.

PB-192 494, *Some Probable Technological Trends and Their Impact on an Information Network System*, J. L. Ebersole, 16 pp. Discusses some sample improvements and their impact, remote entry to multi-access computers with immediate response, storage costs, micropublishing, vertical integration of channels, the distributed computer concept, and data bank and software transferability.

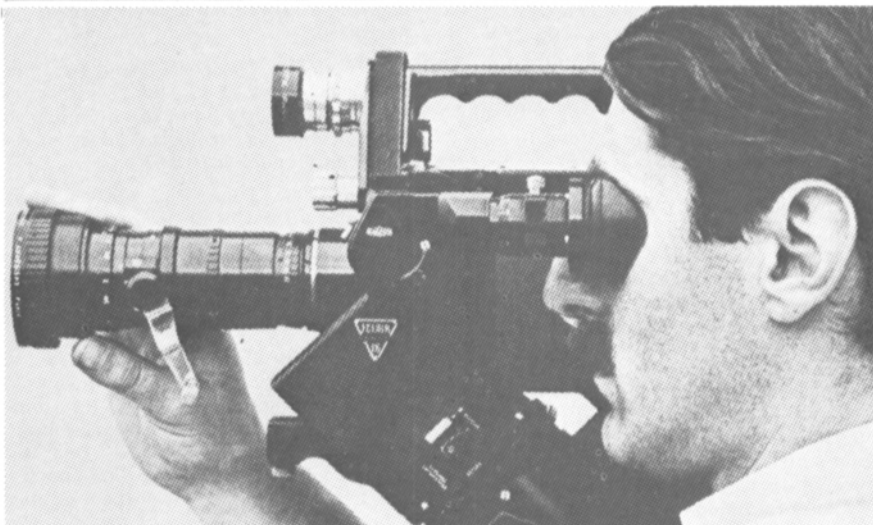
PB-191 198, *Conceptual Design of a Regional Information System*, R. D. Worrall et al., 192 pp. Discusses system objectives, available data sources, system content, software and system maintenance requirements, administration and staffing, funding sources, and future expansion.

CH-SAM-844, *Progress in Scientific and Technical Communications: 1969 Annual Report, Committee on Scientific and Technical Information (COSATI), Federal Council for Science and Technology*, 166 pp. Reflects the continued expansion of scientific and technical information activities within the United States Government, and describes advances made in the communication of such information. Significant achievements of the Federal agencies as well as of the panels and task groups of COSATI are discussed.

CH-SAM-843, *Compilation of Terms in Information Sciences Technology*, F. Casey (ed.), 47 pp. Contains terms from the

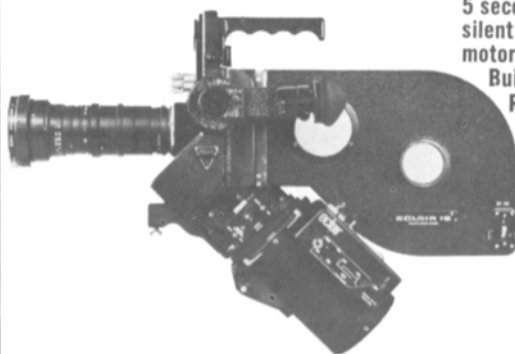
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fields of communications, computer technology, library science, information science, and photography. Report brings together variant definitions of terms shared by these fields and provides definitions of words unique to each.

PB-193 255, *SPIN/O: A Magnetic Tape Service of the American Institute of Physics*, 15 pp.

Optics

AD-708 911, *Holography in a Spatially Inhomogeneous Medium*, H. T. Yura, 21 pp. Uses a Huygens-Fresnel principle, extended to a medium which exhibits a spatial variation in the index of refraction, to calculate the resulting fringe patterns in the Fresnel-Fraunhofer and point reference Fourier-Transform method of holography.

AD-707 317, *Detection Considerations for Laser Systems in the Near Infrared: Prognosis for an Improved Technology*, A. F. Milton and A. D. Schnitzler, 58 pp. Summarizes influence of detection considerations on standard military optically pumped laser systems. Problems and uncertainties associated with development of new photocathodes for the near infrared are discussed.

AD-707 050, *Infrared to Visible Image Conversion Techniques*, S. A. Pollack, 78 pp. Studies feasibility of constructing a solid state device capable of converting an infrared image produced by 10.6 micron CO₂ laser radiation into a visible image.

AD-709 238, *Magnetic Field and Pressure Effects in a Saturated Gas Laser Am-*

plifier, R. T. Menzies, 201 pp. Studies a gas laser amplifier, assuming the amplifier is operating with saturating optical frequency signals. Report primarily concerns effects of gas pressure and presence of an axial magnetic field on characteristics of the amplifying medium.

AD-709 202, *Continuous Wave Chemical Laser Cavity Studies*, D. J. Spencer et al., 14 pp. Discusses the following techniques relating to continuous wave chemical laser cavity design, analysis, and development: (1) a laser cavity mirror absorptivity measurement, (2) a gain distribution measurement, and (3) a tunable cavity mirror configuration.

AD-709 592, *The HCD Argon Ion Laser*, W. C. Jennings et al., 49 pp. Describes operating characteristics of two argon ion laser systems. Technological advantages of the HCD laser are discussed.

AD-711 067, *Power and Efficiency of a Continuous HF Chemical Laser*, H. Miresl and D. J. Spencer, 41 pp.

AD-709 970, *Semiconductor Materials for Electroluminescence Diodes and Lasers*, R. K. Willardson et al., 94 pp.

AD-706 404, *Gas Laser Research in the Infrared and Visible Range*, A. Javan, 235 pp. Covers laser and quantum electronics research in the areas of precision length and frequency measurements using laser harmonic frequency mixing, laser-induced line narrowing effects and their applications, self-induced transparency and related phenomena, and molecular relaxation measurements.

AD-706 403, *Resolution Limits of Fraunhofer Holography*, R. A. Belz, 71 pp. Evaluates resolution of an in-line hologram recorded with plane waves in the Fraunhofer region of a circular, opaque, particle.

N70-17289, *Fourier Transform Representation of an Ideal Lens in Coherent Optical Systems*, G. J. Grebowksy, 66 pp. Presents a mathematical analysis of approximations required to obtain the Fourier transform representation of an ideal lens. Approximations involved are considered in terms of the output signals in optical spectrum analyzer, optical imaging, and optical correlator systems.

N70-17359, *Holographic Optical Data Processing*, R. W. Jenkins, 36 pp. Describes the holographic technique and its application to optical subtraction and pattern recognition (matched filtering).

AD-704 588, *An Introduction to Fourier Spectroscopy*, R. T. Hall, 63 pp.

AD-697 169, *Limitations in Optical Imaging Devices at Low Light-Levels*, E. A. Richards, 25 pp. Examines influence of objective lens parameters on resolution capabilities of low light-level imaging devices. Restrictions imposed by larger lenses on the depth-of-field of acceptable focus are investigated, and comparisons made with the thresholds set by quantum noise and optical resolution limitations. Report discusses degradations in performance of image-intensifiers due to different levels of image-tube dark-noise.

AD-702 725, *Xenon Lamps, Defense Documentation Center*, 102 pp. DDC bibliography (with abstracts) dealing with illuminants equipped with xenon lamps, development of infrared sources, ocular effects of thermal radiation, spectral flash lamps, and optical pumps for lasers.

AD-704 118, *Preliminary Performance of a CW Chemical Laser*, D. J. Spencer et al., 14 pp.

AD-737 535, *Bibliography of Soviet Laser Developments, No. 5, July-Sept. 1971*, S. G. Hibben (comp.), 95 pp. Covers the following topics: (1) laser research—solid state, liquid, gas and chemical lasers; ultraviolet components; nonlinear optics; spectroscopy of laser materials; short pulse generation; crystal growing; and general theory. (2) laser applications—biological effects; communications; computer technology; holography; instrumentation; materials processing; and plasma generation.

Printing, Graphic Arts, Photography

AD-704 900, *Color Photography, Defense Documentation Center*, 117 pp. DDC bibliography (with abstracts) containing references ranging from techniques for producing color pictures from black-and-white negatives to using aerial photography in different spectrum intervals to study vegetation and soils. References include methods for compiling large-scale soils maps using aerial photographs; pseudocolor enhancement of biomedical images; and photoelectronic color separation by servomechanisms in cartography. Specialized photosensitive materials for laser research are discussed.

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