

# American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

JANUARY 1977  
75 cent

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the Filming of  
**ON ANY  
SUNDAY**



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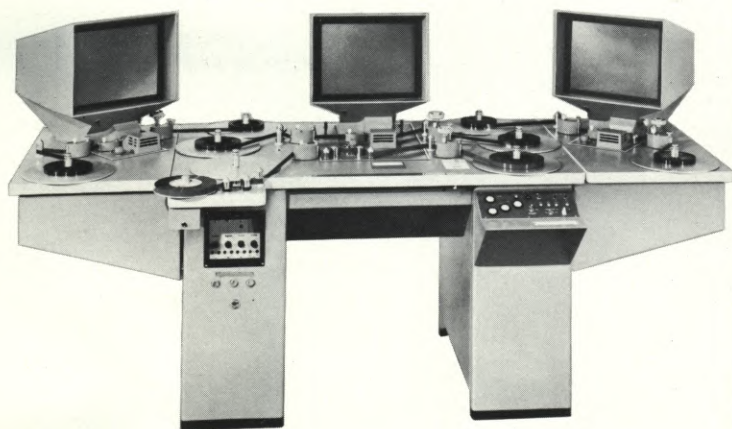
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# American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

JANUARY, 1972

VOL. 53, NO. 1

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• **FEATURE ARTICLES**

- 38 **Timberline Adventure**
- 42 **A New Tool For Composite Cinematography**
- 44 **The Filming of "ON ANY SUNDAY"**
- 52 **"THE LAST PICTURE SHOW"—A Study in Black and White**
- 60 **To Tell You Something**
- 66 **Making 16mm Color Prints from a 35mm Original**
- 68 **Looking Back at FILMEX**
- 72 **Super-16—The Key to Producing Big-Budget Films at Low Cost**
- 75 **1971 Kodak Teenage Movie Awards**

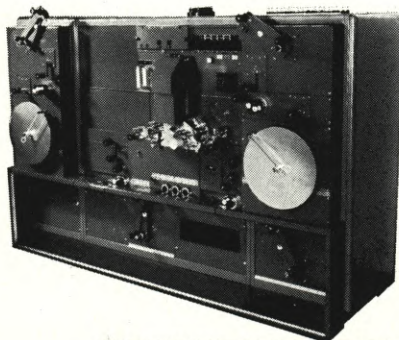
• **DEPARTMENTS**

- 8 **What's New**
- 20 **Cinema Workshop**
- 26 **Industry Activities**
- 92 **The Bookshelf**
- 96 **Questions & Answers**

ON THE COVER: Posterized version of motorcycle racing scene from the Bruce Brown Production, "ON ANY SUNDAY". Cover design by Perri & Smith.

**AMERICAN CINEMATOGRAPHER**, established 1920, in 53rd year of publication, is published monthly in Hollywood by ASC Holding Corp., 1782 North Orange Drive, Hollywood, California 90028, U.S.A. **SUBSCRIPTIONS:** U.S. \$7.00; Canada, foreign, including Pan-American Union, \$8.00 a year (remit International Money Order or other exchange payable in U.S.) **ADVERTISING:** rate card on request to Hollywood or New York office. **CHANGE OF ADDRESS:** notify Hollywood office promptly. Copyright 1972 ASC Holding Corp. Second-class postage paid at Los Angeles, California.

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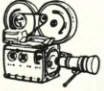
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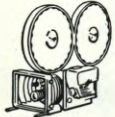
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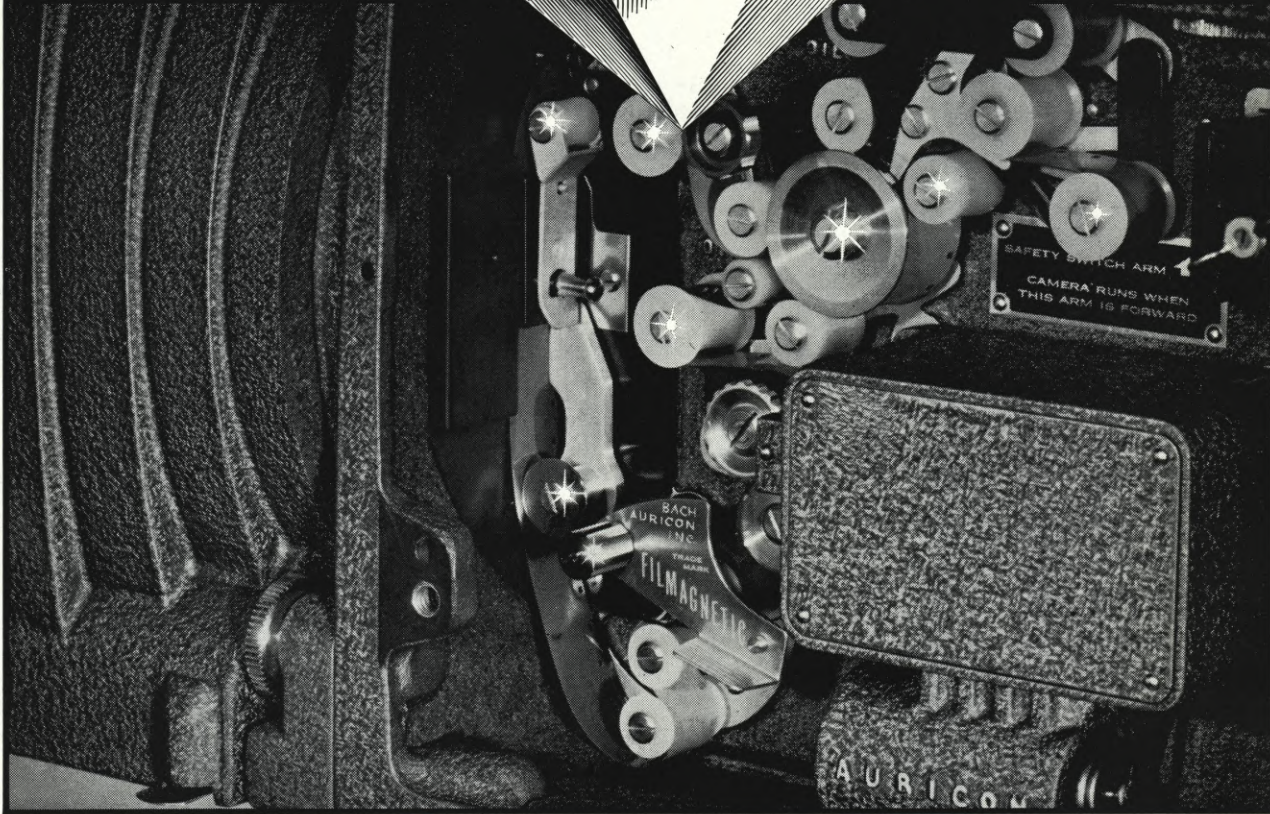
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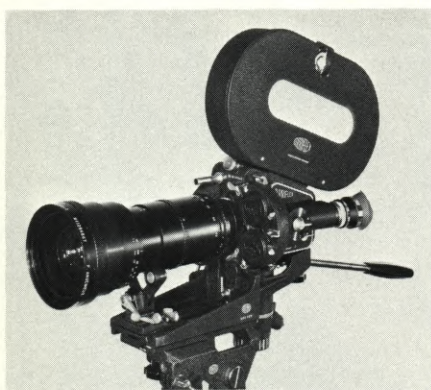
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AURICON...THE PROFESSIONAL CAMERA • STANDARD OF THE 16MM SOUND INDUSTRY SINCE 1931

# WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE



## NEW 20-120MM, F/2.6-T/3.0 ANGENIEUX ZOOM LENS FOR ARRIFLEX 35-2C CAMERAS

The Arriflex Company of America has just announced a new 20-120mm, F/2.6-T/3.0 Angenieux Zoom Lens for Arriflex 35-2C cameras. The lens is said to match the performance of the best fixed focal length lenses now available, at all apertures and focal lengths within the range. The flexibility and lowered production costs made possible with a zoom lens are now combined for the first time with the best optical performance obtainable. At the request of many 35mm film makers the new lens was developed to meet a number of special requirements. At F/2.6-T/3.0, for example, the new lens is about  $\frac{3}{4}$  of a stop faster than the next best zoom lens available for the 35mm format. Consequently, theater quality color films can be shot with light levels proportionately lower than ever before. Extra wide field was another request. The short 20mm focal length covers a field of 68.5 and allows greater freedom of camera movement, and makes it easier to work in the tight spaces so often encountered in location filming. Finally, the lens is designed to focus down as close as 3 feet, measured from the film plane. Therefore, the lens is capable of filming the extreme closeup that are characteristic of modern filming styles.

The lens will most usually be supplied with the improved, heavy duty Arriflex Bayonet Lock Mount, since this construction offers superior accuracy in lens seating. In addition, the Arriflex accessory program includes a specially made, optical bench type, lens cradle for the new zoom lens. The cradle is designed to provide proper support, as

well as centering and alignment for the lens, to assure optimum performance. The Arriflex cradle, in addition, provides the means of mounting the camera and zoom lens combination properly counter balanced on the tripod head.

The 20-120mm F/2.6 Angenieux Zoom Lens is available from all authorized Arriflex Dealers. For further information, contact: Arriflex Company of America, Box 1050, Woodside, New York 11377; Tel: (212) 932-3403.

## FRP PRODUCTIONS—NEW PRODUCERS SERVICE COMPANY

The total production services company recently announced by Arthur Florman and Everett Rosenthal, has now been incorporated under the name of FRP Productions, Inc., located in the F & B/Ceco Studios building at 460 West 54th Street, New York (Tel # (212) 581-5543). Rosenthal is President of FRP Productions, Carl Porcello in California is West Coast Vice President and Mr. Florman will head the Executive Board.

## BELL & HOWELL SYSTEM IMPROVES THEATRE-GOING ABOARD AMERICAN 707s

A new Bell & Howell 16mm projection system that provides theatre-quality motion pictures is now in operation aboard American Airlines 707 luxury jets.

Featuring a 35 percent larger rear-projection screen and a new lens that provides a brighter, sharper picture, the system will be installed on 74 of the airline's jets that are being remodeled with "the new wide-body look."

A major feature in the design of the projection system is the ease of servicing, low operating costs and reliability.

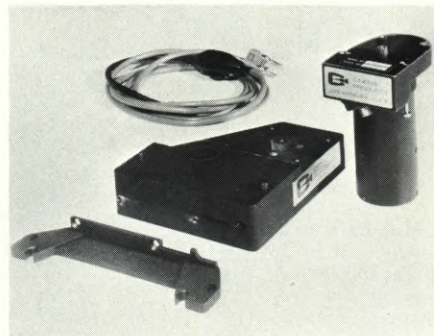
Eugene Moscarel, president of Bell & Howell's Pasadena-based AVICOM division, said that the new units are expected to have higher reliability than the already impressive 97 percent reliability achieved in the original American Airlines 707 projection system.

"Because of our improved picture and larger screens, we have been able to

reduce the number of screens in the cabin from 14 to eight," he said. Like previous Bell & Howell airline entertainment units used by American, the new system will have the "single print concept." "We still need only one print for each 707," Moscarel explained.

As part of the remodeling program, the American luxury jets have sculptured side wall and ceiling panels. Flush-mounted passenger service units and enclosed overhead storage compartments have replaced the familiar suspended service console and hatrack. The new 16mm motion picture system is being installed above the ceiling and will not be visible to passengers except during movie presentations.

Bell & Howell has movie systems flying on five major airlines with a total of 245 aircraft equipped to date.



## COMPACT CRYSTAL-CONTROL MOTOR FOR ARRI 35mm CAMERA

Cinema Products announces the development of an entirely new, extremely compact, crystal controlled motor for the Arri 35mm camera.

It has all electronics, including out-of-sync Sonalert, contained within the motor housing. The entire package is smaller and lighter, by one quarter pound, than the existing Arri constant speed motor.

It is now possible, for the first time, to have crystal controlled hand-held shooting with the Arri 35mm camera.

As with all previous crystal controlled motors manufactured by Cinema Products, it features high sync accuracy,  $\pm 15$  parts per million from 0-140 degrees F., and high efficiency, less than 2 Amps., full load, from a standard 16-Volt battery.

A flat-base, with built-in footage counter, and an adapter bracket, to permit operation in an Arri 120S blimp, are available as accessories.

For further information contact Cinema Products, 2044 Cotner Avenue, Los Angeles, California 90025. Telephone: (213) 478-0711



Preview announcement!  
**New ProCam 16mm**  
**SINGLE-DOUBLE SYSTEM**  
**SOUND CAMERA.**  
 Completely self-contained. For shoulder use.

- Amplifier can be internal or external ▶
- New crystal-controlled motor with internal or external battery ▶
- Semi-permanent 400-ft. magazine for daylight spool plus provision for Mitchell magazine ▶
- Specially-designed Angenieux 1" viewfinder ▶
- 24 frames/sec. for sound or 32 frames/sec. for sports (at the flip of a switch) ▶
- Adjustable handle contains operating switches ▶
- Self-seeking pull-down claw for fast threading of film ▶



No more conversions and jury-rigs! Now in production is a revolutionary new "self-contained" 16mm sound camera balanced for shoulder use! Ruggedly built yet lightweight! The new *Pro Cam* has it *all* together!

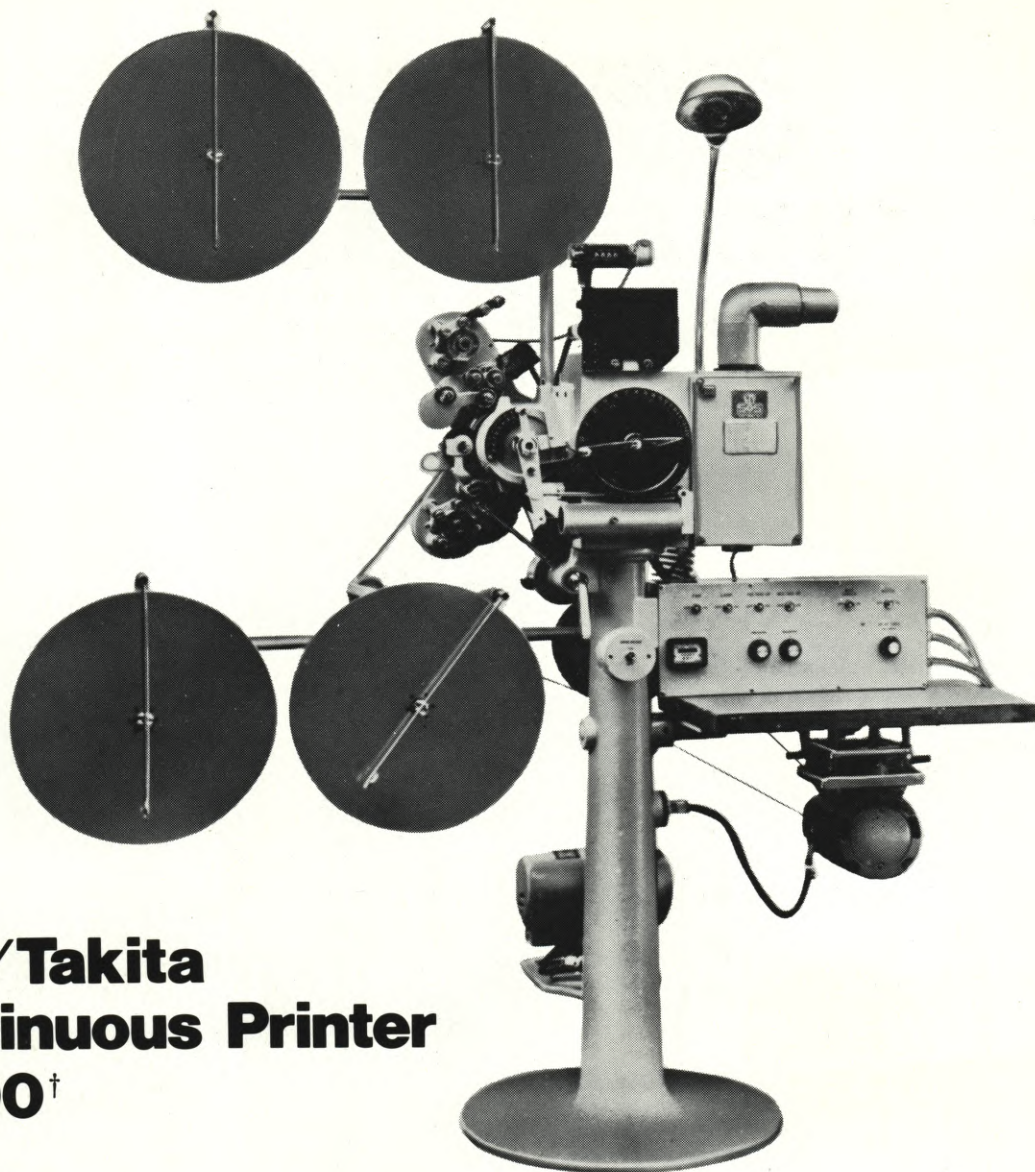
In addition to the almost unbelievable group of features above, the ProCam camera includes: external self-storing filter slot, positive resettable footage counter, earphone in door for cameraman, removable jewel pressure plate, replaceable inexpensive record-head assembly and Angenieux 12-120 or 9.5-95mm lens with automatic diaphragm.

But wait, there's more. For your existing equipment, we design and manufacture ProCam amplifiers, inverters and ProCam record-play head assemblies and distribute Gould-Burgess batteries. Write or call now for details.

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foot feed and take-up flanges, and semi-automatic light change (fully automatic color and density changes optional). Super 8mm, 16mm (handles regular 8mm, too) and 35mm sizes will reproduce academy, silent, sound only, or full width images. All are available in a variety of formats and all are backed by SOS for service and performance.

SOS/Takita Motion Picture Printers can help you do a professional job at a very moderate price. For complete literature on the entire line, including continuous and optical reduction printers, address Dept. AC 1-2

<sup>†</sup>For export, request F.O.B. Japan price list. Prices subject to U.S. Federal regulations and foreign exchange in effect at time of shipment.

\*Based on estimates provided by SOS engineers

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# rosco cineedge

THE RIGHT GEL FOR EVERY LIGHTING SITUATION

new answers  
to the old problem  
of gelling lights and windows

# rosco cinegel

Whether you are gelling a light or a window, Rosco has the color medium that exactly matches your need. The traditional gels used by the movie industry were borrowed from the theatre and never quite fit. For instance, the gels used on Brutes were too wide or too brittle until Rosco developed Roscolar Brute Y1 and Brute YF. Both come in 30" rolls to eliminate waste and are heat stable to stand up in front of arcs.

To solve the problem of correcting daylight for indoor shots, Rosco offers a range of three neutral densities and an 85 filter. In addition Rosco combines 85 with all three neutrals in single filters to save you time and money.

For extra wide windows or when you want speed and ease of application, the right Cinegel is Roscovin which adheres directly to glass without framing or taping and comes in 54" rolls.

Or, if optical clarity is critical, Roscolene is your answer in 41" or 48" rolls, depending on color.

Until very recently, the conversion of 3200K lights to daylight

could be handled only by using dichroics. Now heat resistant Roscolar Tough Blue 50 can be clipped to barn doors or framed to raise color temperature to 5000K with minimal light loss and good skin tones.

For a slight boost in Kelvin, Rosco offers a choice of Booster Blue or half-Booster Blue, according to the extent of the correction wanted. In addition, five different shades of blue, ranging from TD 25 to 1/2 26 Blue in optically clear Roscolene permit the cinematographer to balance his lighting exactly as he wishes.

Diffusion can be handled in several ways, and Rosco offers three different media ranging from the soft base Rolux to the heat resistant Roscolar Tough Frost.

This is Cinegel today. Over the years, as cinematographers talked about a problem, Rosco listened and came up with the answer. This is a continuing process: bring us your problem and we'll work on it. Keep in touch with us, we'll keep you posted on our latest products, and we'll help each other do a better job.



**FREE:** The Cinegel Swatchbook. Samples of every color and information on how and when to use each one. Yours, FREE, for the asking.

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Port Chester, N.Y. 10573

## roscovin

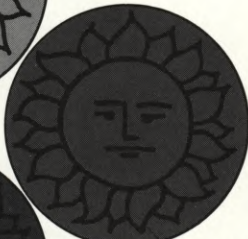
adheres directly to glass without taping or framing. Available as an 85 filter, various degrees of neutral density, and combinations of both.



**85**—Converts daylight to 3200



**N3**—Neutral density grey.  
Reduces light 1 stop.



**N6**—Neutral density grey.  
Reduces light 2 stops.



**N9**—Neutral density grey.  
Reduces light 3 stops.



**85N3**—Combines 85 and N3.  
Converts daylight to 3200K and  
reduces light 1 stop.



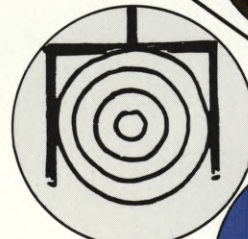
**85N6**  
Combines 85 and N6.  
Converts daylight  
to 3200K and  
reduces light  
2 stops.



**85N9**—Combines 85 and N9.  
Converts daylight to 3200K and  
reduces light 3 1/2 stops.

## roscolar

made of heavy duty heat stable polyester, will withstand the extremes of temperatures of hot quartz lights and Brutes.



**Tough Frost**—Softens and diffuses light without charring or yellowing.



**Tough Blue 50**—Converts 3200K to 5000K.



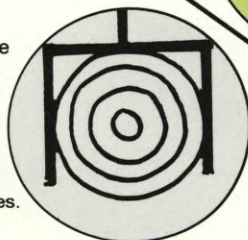
**Brute Y1**  
For Brutes burning  
white flame carbons.  
Corrects to daylight.



**Brute YF**—For Brutes burning  
yellow flame carbons.  
Corrects to 3200K.

## rolux

is used to achieve soft lighting and overall diffusion. It produces a minimum of shadowing and eliminates point light sources.



**Cine Frost**—Softens and diffuses light.

## roscolene

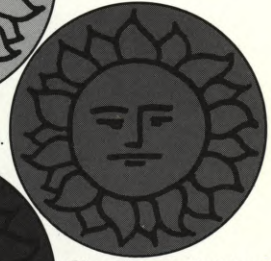
is a high clarity acetate base material for use on windows and colors used on lights to balance them to correct shooting temperature.



**Cine 85**—Converts daylight to 3200K.



**Cine N3**—Neutral density grey.  
Reduces light 1 stop.



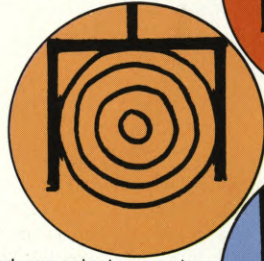
**Cine N6**—Neutral density grey.  
Reduces light 2 stops.



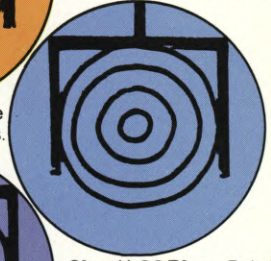
**Cine N9**—Neutral density grey.  
Reduces light 3 stops.



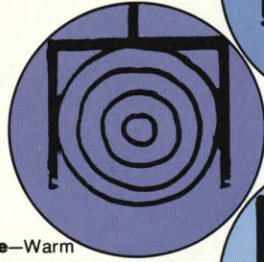
**Cine MT2**—Corrects arcs with  
white flame carbons to 3200K.



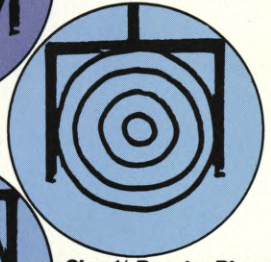
**Cine MT2 1/2**—Reduces color temperature  
of arcs with white flame carbons.



**Cine 1/2 26 Blue**—Pale blue with half  
the color intensity of Cine 26 Blue.



**Cine 26 Blue**—Warm  
blue filter increases color temperature  
while maintaining pleasing skin tones.



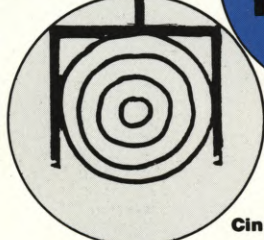
**Cine 1/2 Booster Blue**—Pale blue for  
slight increase of color temperature.



**Cine Booster Blue**—Boosts fading  
blue-faced Fay lamps to daylight



**Cine TD 25**—Converts 3200K to daylight.



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way to gel windows

OPTICLEAR CINEGEL PANELS

roscolex



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Roscolex, in a modular 4 by 8 size, is a lightweight, semi-rigid panel, easily cut to size and positioned with a minimum of fuss and effort. Samples and prices are yours for the asking.

ROSCO

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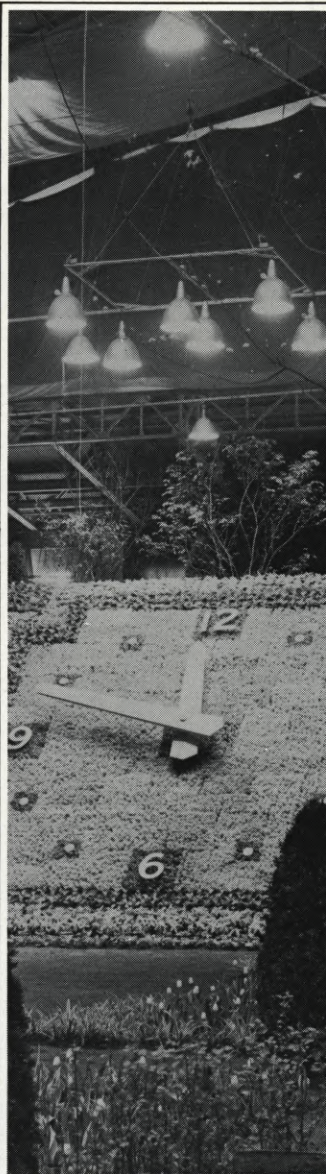
# LIGHTING THE SHOW FOR OVER 30 YEARS!



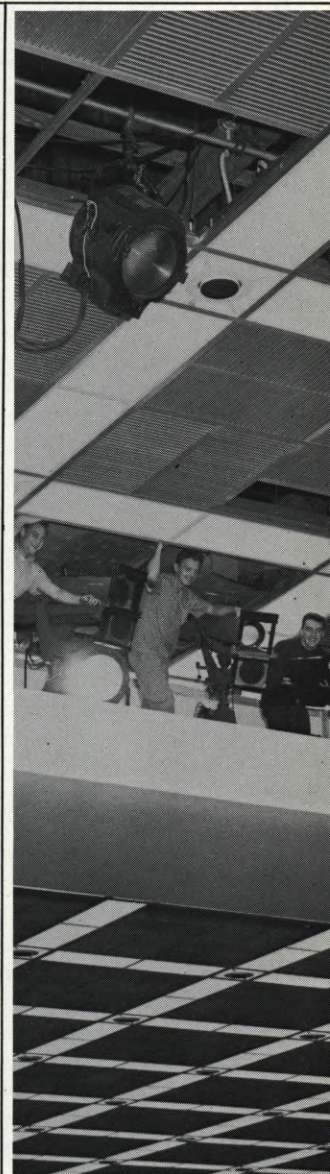
In 1956 thousands witnessed the *This Is Your Life* Network Show honoring Ernest Breech. Lighting was by Jack A. Frost.



Tons of Frost lighting equipment traveled to Havana for this 1958 Steve Allen TV Show. Today Frost experts are still lighting "the show" wherever temporary lighting and power are needed.



Frost has been creating artistic lighting effects for special exhibits, such as this Flower Show, for over a quarter of a century.



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# CINEMA WORKSHOP



By ANTON WILSON

## RECORDER ALIGNMENT

The tape recorder is usually referred to as an electronic piece of equipment. Ironically, however, most of the problems that occur with recorders are mechanical in nature. Poor adjustment of tape guides or heads can cause amplitude drop-outs, loss of high frequencies, oxide build-up on heads, tape contamination, premature head wear, permanent tape damage, etc. A simple program of inspection and adjustment can keep the recorder performing optimally and protect expensive or irreplaceable tapes.

The first prerequisite that must exist on all tape transports is a common tape-path center line. If an imaginary line is drawn from the center of the feed spool to the center of the take-up spool, all components that guide or contact the tape must have their centers exactly on this line. (See FIGURE 1). If one of the reel pedestals or tape guides is not adjusted to this common line, it will produce an excessive side or edge pressure on the tape. This can cause permanent deformation or nicking of the tape edge, resulting in loss of high frequencies and excessive amplitude drop-out. In addition, this condition causes the oxide to flake off the tape base, resulting in oxide build-up on the guides and heads and recontamination of the tape itself. Furthermore, the tape will not be properly positioned over the heads. This will affect cross-talk, signal-to-noise ratio, pilotone level, and azimuth adjustment. It should be clear that improperly aligned guides and rollers can cause a lot of headaches.

I use a very simple method to visually check the center line adjustment of guides and rollers. On a paper cutter or using a straight edge and a

razor, cut a strip of paper just under  $\frac{1}{4}$ " in width. Ideally this strip should be about  $\frac{1}{64}$ " under  $\frac{1}{4}$ ", or  $\frac{15}{64}$ " wide, and about a foot long. Tape each end of the strip to the feed and take-up spools respectively, so that they are centered between the two flanges. Put the reels on the recorder and thread the paper through the machine. With the pinch roller open, twist the reels so that the paper strip is very taut. With the strip in this taut condition, carefully inspect each roller and guide in the transport path. Because the paper strip is slightly under size, it will not fill each guide and there will be a slight space or gap on both sides of the paper strip. If the guide or roller is properly adjusted, the two gaps will be of identical size. If the space on one side is larger than the other, the guide or roller must be realigned.

Once the guides, rollers and reels are adjusted to a common plane, the heads must be aligned. Basically there are five separate adjustments: the three axes and two planes (the third plane is the actual location of the head in the tape path. This is usually not critical). FIGURE 2 best explains these adjustments. The three axial movements are (A) Tilt, (C) Tangency and (E) Azimuth. The two planes of alignment are (B) Height and (D) Contact.

**TILT**—The first head alignment is to establish that the head is truly parallel to the tape transport plane. If the head is tilted (A—FIGURE 2), tape tension will not be even across the length of the gap resulting in possible reduction of both signal-to-noise ratio and high-frequency response. In addition, if this misalignment is excessive, the tape will have a tendency to slide off its proper center line. This adjustment is best made visually with the aid of a square against the transport deck.

**HEIGHT**—Height is very easily checked. (B, FIGURE 2) With the machine threaded, adjust the height of the head so that the tape perfectly covers the gap length, top to bottom. Improper height adjustment will result in uneven head wear, loss in signal-to-noise ratio, loss of pilotone level and (in stereo) cross-talk.

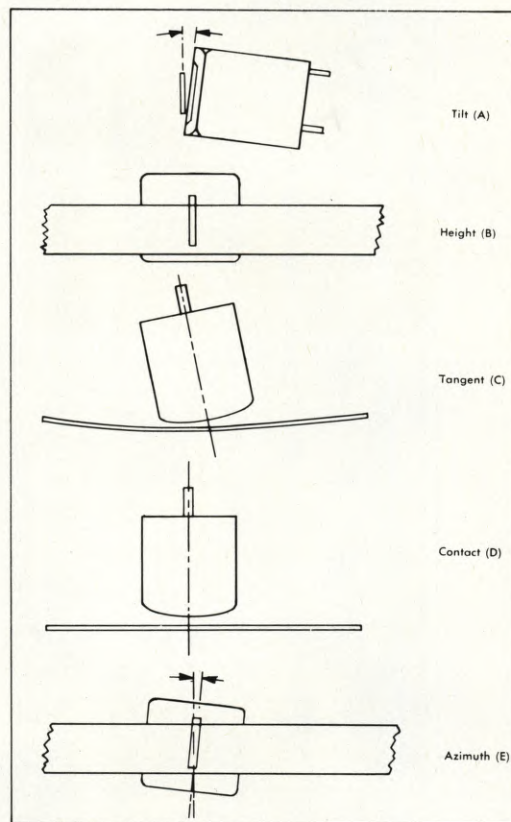


FIGURE 2 — HEAD ALIGNMENT

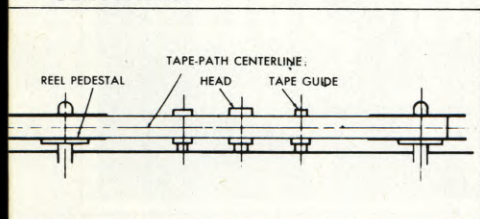
**TANGENCY**—Like the height adjustment, tangency is usually determined visually. It involves squaring the head to the tape (C—FIGURE 2). In other words, in a top view, the axis of the head should be perfectly perpendicular to the tape. The result of improper tangency is both a loss of high frequencies and an increased susceptibility to drop-outs.

**CONTACT**—The contact adjustment (D—FIGURE 2) affects the amount of tape "wrap around" on the head. This adjustment is usually designed into a professional recorder and seldom requires any attention.

**AZIMUTH**—Last, but certainly not least, is the azimuth adjustment. This is by far the most critical of all the alignment procedures. The azimuth adjustment determines that the head gaps are precisely perpendicular to the tape center line (E—FIGURE 2). Because the head gaps are so narrow, it is impossible

Continued on Page 98

FIGURE 1 — SIMPLIFIED TAPE PATH CENTERLINE





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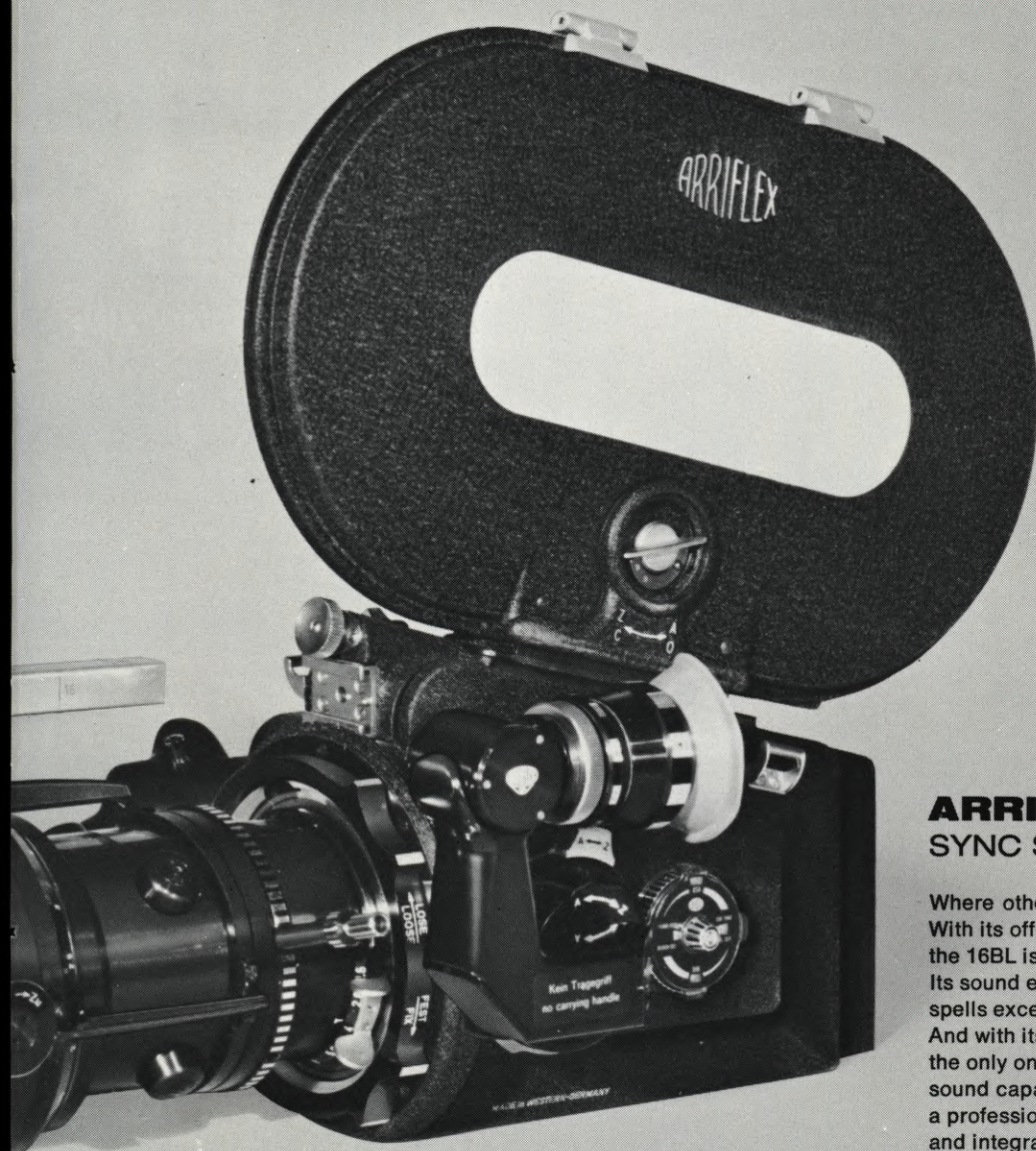
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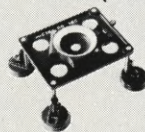
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# INDUSTRY ACTIVITIES

## **SMPTE SCHOLARSHIP PROGRAM**

The Society of Motion Picture and Television Engineers has announced an enlarged program of scholarship aid for graduate and undergraduate study in the academic year 1972-73. The announcement was made by Herbert E. Farmer, Vice-President for Educational Affairs.

The three graduate scholarships, sponsored by the Academy of Motion Picture Arts and Sciences and administered by the SMPTE, will be for study and research in the sciences and technologies related to the production of motion pictures. This will include the sciences and engineering aspects of optics, acoustics, electronics and chemistry. Applicants may apply for any amount up to \$5,000.

Students presently enrolled or admitted to a graduate program at a recognized college or university with the objective of an advanced degree beyond the baccalaureate will be eligible. Undergraduates in their senior year who plan to continue their studies may also apply.

The SMPTE will also award two grants for the academic year 1972-73 to assist undergraduate students majoring in one of the sciences or technologies related to motion picture, television, photo-instrumentation or photographic sciences.

To be eligible for the scholarship, a student must have completed two years of college and be presently enrolled in or admitted to a recognized college or university with the objective of a baccalaureate degree in one of the related fields. The fields of study would include, but not be limited to, the sciences of optics, acoustics, electronics and chemistry. Business, management and standardization, relating to technologies and applications of motion pictures, television, photo-instrumentation and photo-science, could also be included in the applicant's academic program.

Application for both graduate and undergraduate awards must be made on forms available from SMPTE Headquarters, 9 East 41st Street, New York NY 10017, ATT: Scholarship Program. Applications must be submitted before April 1, 1972. Winners of the scholarships will be announced May 1.

The Society of Motion Picture and Television Engineers is a non-profit organization for the purpose of exchanging information and technology among scientists and engineers in the fields of motion pictures, television, high-speed photography and photographic instrumentation.

## **ACADEMY NAMES PHILIP CHAMBERLIN DIRECTOR OF SPECIAL PROJECTS**

Philip Chamberlin, noted film scholar, teacher and administrator, has been appointed to the newly created position of director of special projects for the Academy of Motion Picture Arts and Sciences, it was announced recently by Daniel Taradash, president of the Academy.

Chamberlin, now serving as the head of Art Museum Education and Curator of Motion Pictures of the Los Angeles County Museum of Art, will assume his post with the Academy on January 1, 1972. As director of special projects he will have responsibility for administering the Academy's scholarship programs; devising and presenting its retrospective screening series; handling liaison between the Academy and the American Film Institute, the Los Angeles County Museum of Art, university cinema schools and programs and other film organizations and societies; maintaining close contact with foreign film organizations and conducting the Academy's transactions with, and hospitality for, visiting representatives of films nominated for the Academy's Foreign Language Film Award, and other foreign visitors; working with young film makers; representing the Academy to film exposition sponsors and administrators; editing Academy publications; serving as consultant and advisor in the Academy's public-relations proceedings, and innovating projects and activities consistent with the Academy's aims and purposes.

"Philip Chamberlin's career has made him uniquely fitted for the ambitious task we're giving him," said Taradash in announcing the appointment. "He has been an exceptional planner, innovator and administrator in cinema, the per-

forming arts and in other academic areas. We are enormously pleased to have him with us."

Chamberlin took his B.A. degree in philosophy at Dartmouth College and his doctorate in motion pictures at UCLA. He started his career as a school principal, which he followed with two years as a visiting college lecturer and academic administrator in Elsinore, Denmark. He was founding director of Academy House, a residential adult education establishment, and a teacher of philosophy and ancient history at the University of Washington; teacher, administrator and consultant in cinema at UCLA; consultant to the advisory committee of the John F. Kennedy Center for the Performing Arts in Washington, D.C., and founding editor of the *Film Society Review*, to name but a few of his distinguished services to the world of the arts. He has been at the Los Angeles County Museum of Art since 1968.

## **ACADEMY NAMES SCIENTIFIC OR TECHNICAL AWARDS COMMITTEE**

Members of the Scientific or Technical Awards Committee of the Academy of Motion Picture Arts and Sciences were named recently by Daniel Taradash, president of the Academy.

Gordon E. Sawyer is its chairman. Its other members are:

John O. Aalberg, Joseph Bluth, Frank P. Brackett, Edmund M. DiGiulio, Linwood Dunn, Farciot Edouart, Glenn Farr, Jack P. Foreman, Robert E. Gottschalk, Albert P. Green, Sol Halprin, Winton C. Hoch, Wilton R. Holm, G. Carlton Hunt, Fred Hynes, Joseph Kelly, Don V. Kloepfel, Ken Mason, Hal Mohr, Lindsley Parsons Jr., Arthur R. Piantadosi, James C. Pratt, Edward H. Reichard, Charles Rice, Sidney P. Solow, Richard J. Stumpf, Petro Vlahos, William J. Wade, Waldon O. Watson and William L. Widmayer.

The committee will consider scientific or technical achievements—devices, methods, formulas, discoveries or inventions of special and outstanding value to the arts and sciences of motion pictures which have been used in film production during the Awards year. Its recom-

**Continued on Page 116**

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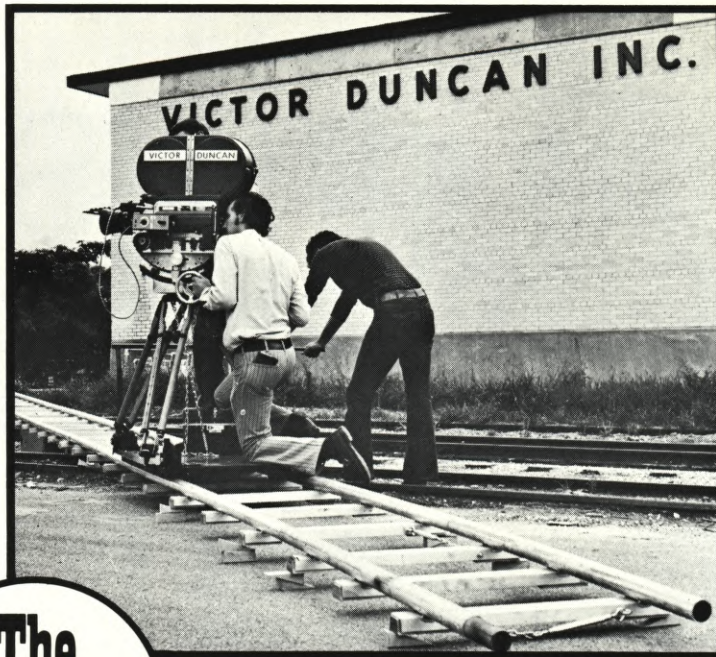
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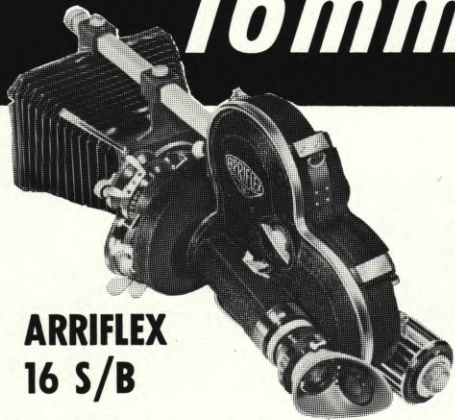


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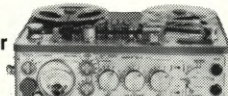
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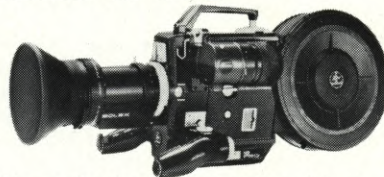
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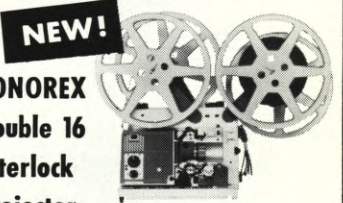


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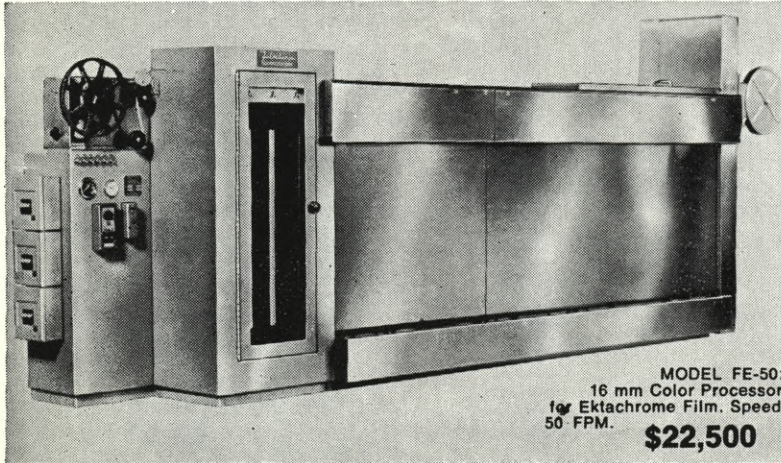
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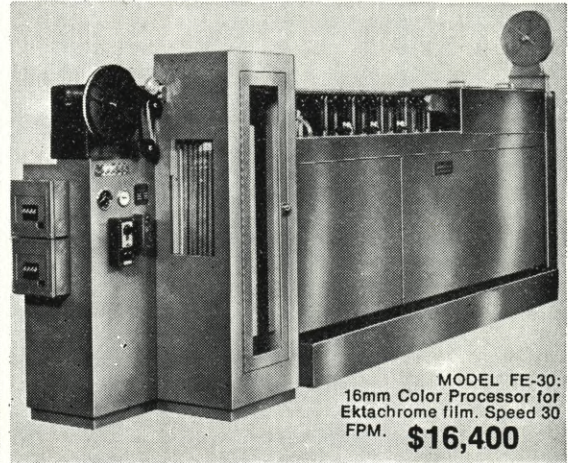
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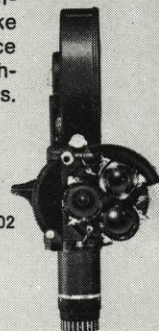
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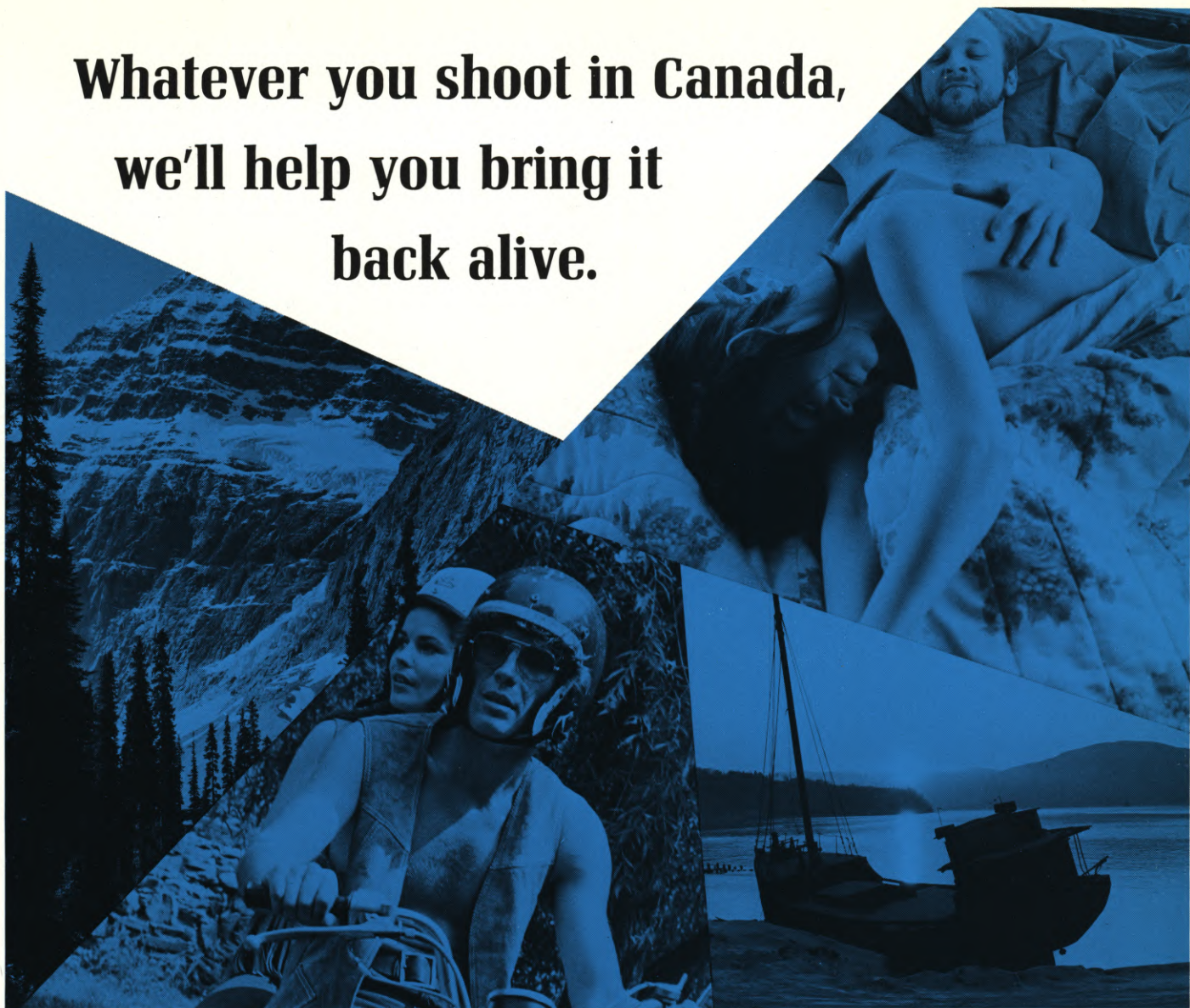
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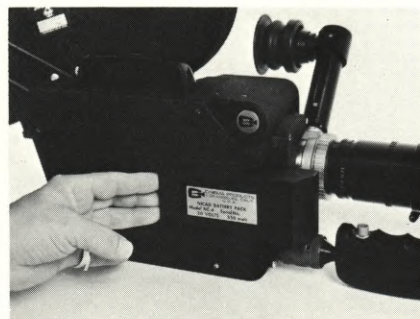


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# A man, his work, and his camera

Bruce J. Russell—Biologist/Cinematographer  
□ Producer of the Thorne Biology Film Loop Library  
□ Winner (1969) American Film Festival/Science  
Film Loop Division □ President, Educational Films Lab  
(Newcastle, California)

"Film loop production is a demanding form of the motion picture arts. Loops are silent—the story must be carried visually without the help of a sound track. Getting meaningful ecological sequences of organisms in their natural environment requires motion picture camera equipment which is both compact and reliable. The Beaulieu R16B has some unique advantages for this kind of work, and I have exposed some eleven miles of 16mm film through mine during the creation of 150 single topic films.

Capturing the life styles of the little known animals of the tide pools, mudflats, streams and ponds, I have tried to give the student a biologist's eye view. Precision reflex viewing and behind the lens metering are prerequisites for this kind of quick, unobtrusive field work. My camera is frequently attached to the end of some device—a periscope, an underwater viewing

tube, the microscope—often improvised equipment which permits the interesting, visually involving shots which characterize our ecology films.

The Beaulieu's mirrored shutter, which sends full light to the large ground glass viewing screen, provides a bright picture of what is going on before the lens. I am able to focus and set the aperture without removing my eye from the view finder, and this is a terrific advantage when filming living organisms in their natural surroundings.

After three years of this challenging work, the Beaulieu 16mm camera has become an automatic recorder of what my eye sees at the levels of observation common to biologists—normal, macro (as with a stereo microscope) and micro. Its unusual flexibility has allowed me to explore, both scientifically and aesthetically, the fascinating world of living organisms."



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# TIMBERLINE ADVENTURE

On the Continental Divide, peripatetic Editor climbs a peak of the Colorado Rockies to observe filming of a documentary on Man in the Alpine Tundra wilderness

By HERB A. LIGHTMAN

**BROWN'S CABIN, COLORADO**—Lacking precise co-ordinates, I'm at a loss to pin-point exactly where I am as I write this, except to say that I'm at the timberline of Mt. Yale (just below its 14,100-foot summit), smack on the Continental Divide in the Colorado Rockies. There's no population center within miles—only spectacular mountain peaks topped with snow, tall pine trees and friendly birds and animals. I guess you could call it "God's Country" (for want of a better *cliché*) and let it go at that. And what am I doing in this breath-taking locale? I'm here with a crew from Alan Landsburg Productions (Hollywood) which has trekked up the mountain to film sequences of Dr. Dwight R. Smith, Professor of Ecology at Colorado State University, who is spending six months up here researching and filming the ecology of the Alpine Tundra, as this timberline area is

(LEFT) Loading one of the two available pack horses with camera and sound equipment in preparation for the long trek up Mt. Yale in Colorado's University Range of mountains. (CENTER) Cinematographer Joe Longo and Assistant Cameraman Paul Desatoff press padded parka into service as an improvised "barney" to protect Arriflex from extreme cold. (RIGHT) In favorite between-camera-setups prone position, Longo contemplates the beauty of the Colorado sky.

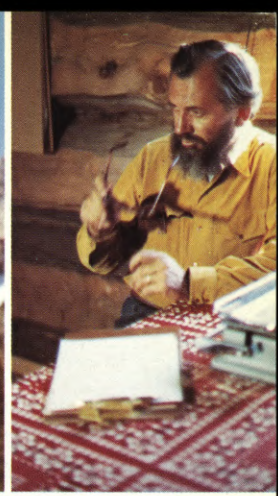


(LEFT) Dr. Dwight R. Smith, Man-in-the-Wilderness "star" of "THE NEW EXPLORERS" TV Special having to do with ecology of the Alpine Tundra, films wildlife of the area with Beaulieu R16B camera. (CENTER) From horizontal vantage point, Longo shoots scene of Dr. Smith against the spectacular Colorado mountainscape. (RIGHT) Named after the man who built it in 1885, Brown's Cabin served as base of operations for Smith during six-month sojourn, as well as habitat for visiting camera crew.



(LEFT) Filming a sequence in which the star of the show erects a light-weight nylon mountain tent on snow-covered slope near the summit of Mt. Yale. (CENTER) Dr. Smith wriggles into mountain tent (which has double walls for protection from wind) and pulls his pack in with him. (RIGHT) Longo climbs right in after his subject with the Beaulieu to get a closeup of him preparing to bed down for the night. Is nothing sacred?





(LEFT) A genuine Man of the Wilderness, born and raised in the Colorado Rockies, 21-year-old Army veteran Dan Herman served as super-efficient packer-wrangler-guide for the filming safari. He still carries a couple of .22 slugs in his anatomy from a shooting accident in which a hunting buddy mistook him for a fox. (RIGHT) Risking rape, Dr. Smith blows whistle that simulates the mating call of the Elk.

(LEFT) Ultra-friendly Canadian jays (more familiarly known as "Camp Robbers" because of their taking ways) flocked about the area, begging for handouts. The author snapped this shot of one of them as he swooped down to snag a bit of cracker placed on top of Arriflex. (RIGHT) Snug inside the cabin, Dr. Smith conducts various experiments having to do with the flora and fauna of the area, and records the test data.

(LEFT) The professor returns to the cabin after several days of back-packing into the more remote areas of the region. His filmed study encompassed all natural elements having a bearing on the local ecology system—including plant and animal life, geology, water and weather. (CENTER) Cameraman takes a light reading on moss-covered stump during snowfall, while Director Don Ringe holds light-weight Sylvania Model SG-77 Sun Gun to cross-light moss. (RIGHT) An Army Air Corps veteran of World War II, Joe Longo is a gung-ho cameraman.



(LEFT) Paul Desatoff and Professor Smith, on temporary K.P., cook breakfast for the crew on old wood-burning stove. Members of the group alternated in preparing food and washing dishes. (RIGHT) Setting up for over-the-shoulder shot of Dr. Smith conducting experiments.

(LEFT) Ringe and Desatoff hold Sun Guns, while Longo shoots scene of Dr. Smith stoking the stove. (RIGHT) At the crack of dawn, Longo takes meter reading to film scene of professor (in his long-johns) breaking through ice topping pail of water left in the kitchen all night.



(LEFT) The Director had prayed for a storm, and got his wish. After a suitably cinematic snowfall, the hardy crew prepares for the long trek down the mountain. (CENTER) Professor Smith comes out to lend a hand with the packing of the horses and to bid farewell to the camera crew and Editor who had invaded his silent domain. (RIGHT) Dan Herman leads the pack horses across frosty mountain meadow, as weary crew members straggle along behind.





Loading the Beaulieu, which was frequently used for hand-held "grab" shots, although the Arriflex was the "official" camera of the professional crew.

called. The resultant film will constitute the third of Landsburg's "THE NEW EXPLORERS" series of TV specials having to do with a lone man in a wilderness locale. Making up the Landsburg crew are: Director Don Ringe, Cinematographer Joe Longo and Assistant Cameraman Paul Desatoff. And then there's me—the Spirit of *American Cinematographer*.

Getting here was a real safari situation. Landing in Colorado Springs on the jet from Los Angeles, we were informed that the hunting season for Elk was about to open and that we'd better make sure we had bright enough clothing to keep the trigger-happy hunters from shooting us out of our boots. (They had blasted two guys right off of their speeding motorcycles the season before, mistaking them for God-knows-what-kind-of-jet-propelled wildlife.) I dived into a sporting goods shop and emerged with a package containing an insulated Day-glo orange jumpsuit that covered me from tip to toe. I was taking no chances on getting shot for an Elk, since I really didn't have the antlers for that scene.

The four of us piled ourselves and a mountain of gear into a rented car and drove about 120 miles to the picturesque hamlet of Buena Vista, Colorado (pronounced "Bew-nie Vista" by the local residents) where, since it was now after dark, arrangements had been made for us to rest up in a motel overnight before tackling the long trek up the mountain.

I couldn't resist trying on my wild new jumpsuit and, when I emerged from my room positively glowing in this fluorescent orange creation with its natty black cuffs, Joe Longo (a jocular joker, if ever there was one) took one look at me and said: "What the hell is this—Trick or Treat? C'mere, little boy—I'll give you some candy."

I knew right then that I was going to like this guy.

The next morning, crack of dawn, we drove twenty-some-odd miles to a remote patch of wilderness where, in a clearing, two men and two horses awaited us. The first of these (the men, not the horses) was Charlie Combs, an amiable cracker-barrel type whose sprightly energy belied his comfortable years. The other man was 21-year-old blond and bearded Dan Herman, an Army veteran who had been born and bred in these mountains and who was to serve as our packer-wrangler-guide. It was evident that he was one of those quiet, larger-than-life characters who can take all kinds of horrendous happenings in stride.

After an exchange of introductions, the two Coloradans gave us the dread news that, because the hunters had booked all the livestock for miles around, we would have no saddle horses. In fact, we were lucky to get even the two tired pack horses, who now stood regarding us with swaybacked nonchalance.

Having been hit with this shattering pronouncement, Longo muttered a few obscenities and promptly lay down on the ground, staring up at the sky from the prone position. Don Ringe had just returned with Longo from a filming stint in the jungles of Costa Rica and the backwaters of the Amazon, and they were still scratching the bites inflicted upon them by 10,000 varieties of insects. Eyeing his horizontal cameraman, Don said: "If you think he's sluggish here, you should see him in the jungle. He's positively *slothful*."

(LEFT) Dr. Smith is filmed placing rocks on tarpaper roofing of storage shed adjoining the main structure of Brown's Cabin—an added precaution against the force of the wind. (RIGHT) Happily shuffling along on his snowshoes, he blazes a trail through the virgin snow on the upper slopes of Mt. Yale. Having been acclimatized to the altitude for several months, he took it in stride—but the unaccustomed exertion at such heights nearly wiped out the camera crew.





(LEFT) Assistant Cameraman Paul Desatoff holds mini-slate, while Joe Longo marks the scene. (RIGHT) Longo sprawls flat on his back in the snow to get a low-angle shot of the professor removing his snowshoes. A considerable part of his prolonged stay in the mountains for "THE NEW EXPLORERS" TV special involved backpacking into remote areas where he would establish a campsite and stay for several days to study various natural phenomena.

Slothful—as it turned out—he ain't. I was later to see him clamber all over the uphill terrain like a mountain goat, with a heavy camera on his back. He's simply smart enough to rest up between strenuous spurts on an assignment.

When the camera and sound equipment, plus our personal gear, had been expertly loaded onto the two reluctant pack horses, Charlie Combs took off, leading them up the trail. The five of us remaining wedged ourselves with almost obscene intimacy into the tiny enclosed Jeep that stood percolating nearby.

"Where's the road?" I asked, with childlike innocence.

"What road?" said Dan, chuckling insanely.

*There wasn't any road!* The cow-trail that led out of the clearing was so narrow that tree trunks scraped against both sides of the Jeep as we battered our way through. Very soon, the trail disappeared completely and it was cross-country all the way. The game little Jeep struggled up rock-studded slopes and plunged into roaring streams, getting bogged down good a couple of times. Along certain stretches the terrain was so rough that Ringe, Longo and I—packed into the tiny rear compartment of the Jeep—got tumbled all over each other, like beans in a set of *maracas*. At other times, all five of us had to lean to one side of the vehicle in order to keep it from sliding down a 45-degree grade into the canyon below. *Bracing!*

After a few miles of this nonsense, we arrived at a dead-end, with the terrain going straight up from there. The Jeep ground to a halt (its transmission sounding sick) and Danny said some-

thing like: "Alright—everybody out. This is as far as the Jeep can climb. From here to the top it's *foot-power*, man."

I felt faint.

"I'm going back for supplies. See you on top Saturday," said our blond Daniel Boone, cheerfully wheeling the Jeep about and rumbling off into the undergrowth.

Then began another one of those Bataan Death March numbers (See "ALASKAN ADVENTURE", *American Cinematographer*, November 1970) but, this time, minus the mud.

It didn't seem half bad at first, climbing straight upward along a narrow trail that wound in dizzy switchbacks along the side of the mountain, but after a couple of miles of this mountain-goat choreography, we were huffing and puffing like senile steam engines and having to stop every few hundred yards for a 10-minute break. Longo and I, a couple of leftover tigers from World War II, were definitely having a rough go of it and I decided that our respective years of dissipation were finally catching up with us, but then I noted that Ringe and Desatoff (both in their early twenties) were wheezing and groaning at least as loudly as we were—so it had to be the altitude.

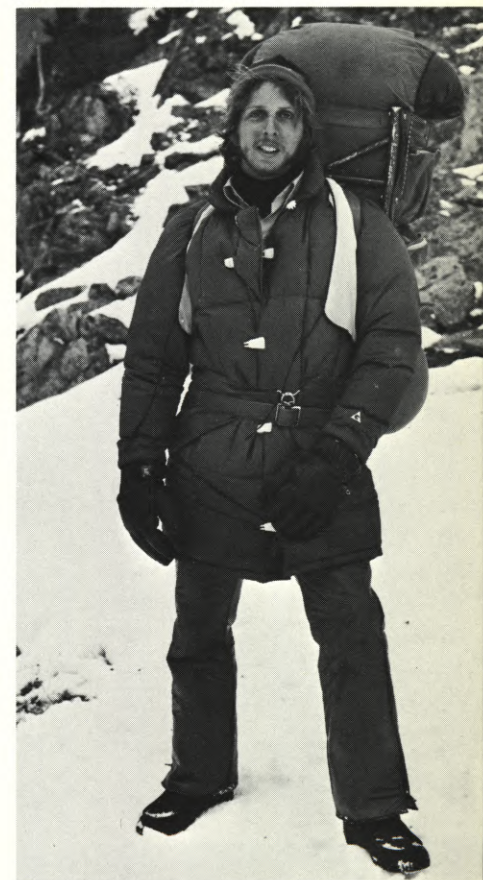
Lurching on for the final half-mile, like survivors of some grueling marathon, we passed a mound of stones marking the Continental Divide and crossed a saddle of land stretching between two peaks named after Ivy-league universities (Mt. Yale and Mt. Harvard). Directly below, nestled in a shallow basin and surrounded by tall pines, lay the structure designated on U.S. Forest

Service maps simply as "Brown's Cabin"—and it is there that I now sit writing this deathless prose.

#### Man In The Wilderness

To recap the basic premise of "THE NEW EXPLORERS" series of television *Continued on Page 94*

Director Don Ringe tries on the professor's heavy pack for size—then decides that he's just a "city kid", after all.



# A NEW TOOL FOR COMPOSITE CINEMATOGRAPHY

How the Lumiscope screen, with no "hot spot" is being used for composite cinematography in making medical training films

By RICHARD B. GLICKMAN, KAREN SIEGERT and SY WEXLER

"The half-life of a medical education is steadily diminishing," states Dr. William F. House, Research Director for the Los Angeles Foundation of Otolaryngology. "The need for continuing education in all phases of medicine is recognized by those within the medical profession. We regard film as one of the key methods for providing this education. In order to keep informed, a doctor needs exposure to the new concepts and techniques which emerge at the numerous international medical conferences and in the plethora of medical journals. The demands of practice limit the time for travel or study. I have long felt that films, reviewing new diagnostic and sur-

gical procedures, are one of the most powerful means for providing this specialized information to the physician for the benefit of his continuing education."

The Los Angeles Foundation of Otolaryngology is the educational arm of the Otolologic Medical Group. The Foundation has an outstanding reputation for the quality of its educational activities. These include courses given in a uniquely equipped instructional facility, publications, and a program of film production which goes back ten years.

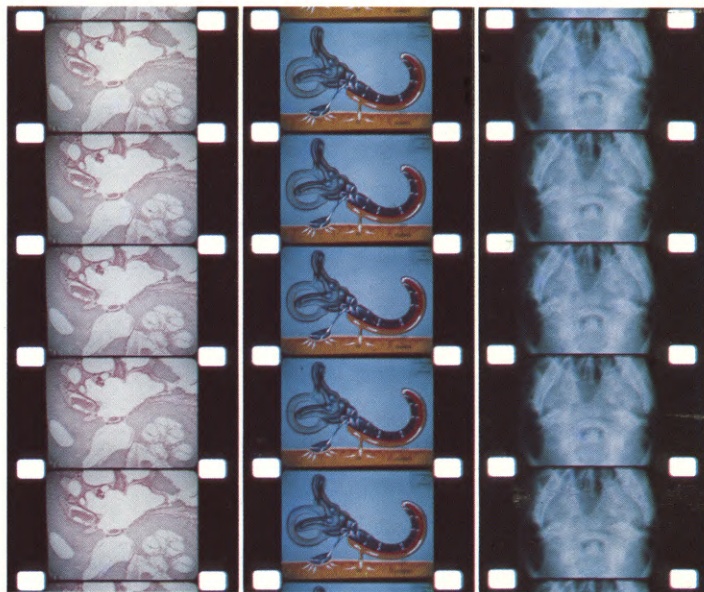
Most of the outside productions of the Foundation have been made by Sy Wexler of Wexler Film Productions in

Hollywood. These have been fully scripted productions, with subject matter ranging from surgical techniques to education for the hearing handicapped. A number of these films have been awarded prizes at International Film Festivals.

While the more conventionally made films were successfully transmitting their messages, Dr. House felt that the program had limitations. First, the costs of conventional production were such that they restricted the number of films that could be produced each year. Second, the normal channels for showing these films resulted in a limited audience for the material.

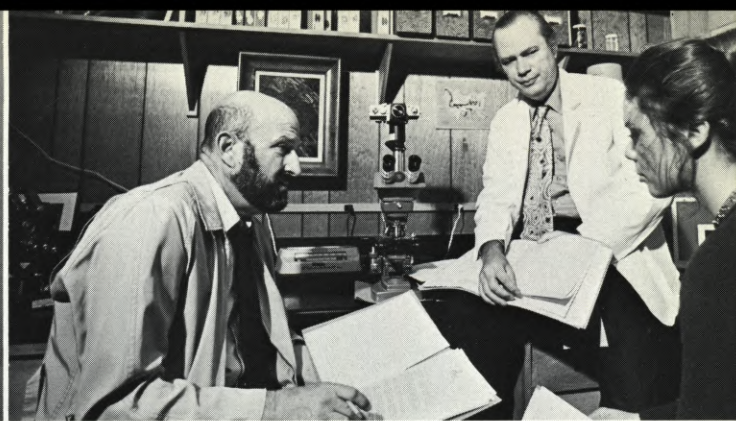
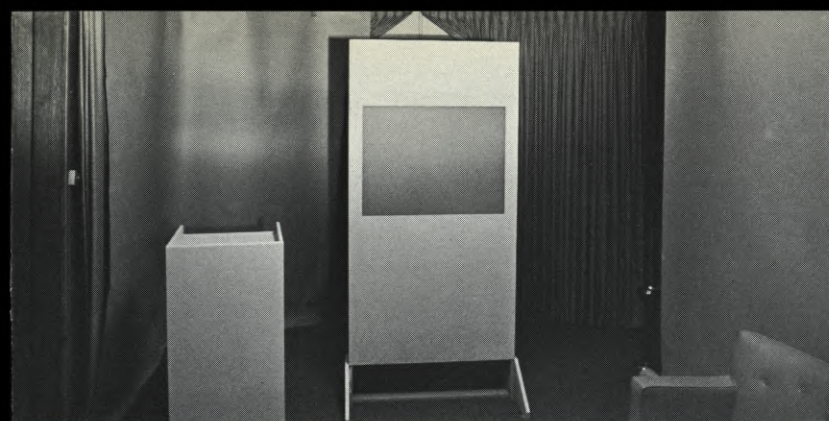
Film clips taken from recent medical subjects photographed with Lumiscope screen. (LEFT) Live subject with rear-projected slide of simple line diagram. (CENTER) Live subject with established set lighting. (RIGHT) Live subject with rear-projected color slide.

Film clips of slide closeups shot directly off of Lumiscope screen. (LEFT) High-magnification microscope slide of cellular structure. (CENTER) Low-magnification microscope slide of portion of ear structure. (RIGHT) Slide of X-ray re-photographed on to film from Lumiscope.



(LEFT) Dr. Gordon Smyth in the midst of a lecture filmed with slide illustrations rear-projected on the Lumiscope screen. (CENTER) Dr. Georg von Békésy, Nobel Laureate in Medicine for 1961, about to be filmed by Karen Siegert, Director of the Los Angeles Foundation of Otolaryngology. Dr. Békésy has, so far, made two films for the foundation. (RIGHT) Shot in studio, showing spacial relationship of camera to podium and Lumiscope screen.





(LEFT) Permanent installation for filming at the Los Angeles Foundation of Otology has established production elements which are permanently set up for filming. (RIGHT) A production conference with Producer Sy Wexler, Dr. William F. House (Research Director of the Los Angeles Foundation of Otology) and Karen Siegert.

To overcome the first problem, Dr. House felt that it would be necessary to develop a production format which would permit the making of films at low cost, without compromising the content or quality. This could best be done, he felt, by filming outstanding experts in the field lecturing on their subject, and using their own slides and films as part of the presentation. This would eliminate the need for detailed scripting, and required that the visiting expert spend only a very short time in the filming process. This was most important, since the time of these doctors is very limited. Often they have been flown to Los Angeles for the sole purpose of appearing in one of the films. The goal of the program was to film a one-hour presentation in one hour.

The format of the speaker and his slides being photographed simultaneously would permit the speaker to point to areas of special interest on the screen while explaining a particular point. This would tend to create a "live" quality—an important asset to a presentation of such a specialized nature. This quality would be lost if the conventional method were used of shooting the slides as inserts and editing them into the finished lecture.

This seemingly simple program carried with it the economic restraints imposed by the desire to do as many of these one-hour films per year as possible. This limitation alone ruled out the use of any of the commercial production facilities. It also eliminated the possibility of using any of the professional composite process equipment for accomplishing the real-time composite of lecturer and slides.

At the start, it was felt that the only major technical problem was to find a simple way of projecting enough light onto a screen for the purpose of simultaneously photographing the lecturer and his projected slides. The image projected would have to be bright enough so as not to be washed out by stray light from the set lighting neces-

sary to photograph the lecturer. The problem was made more difficult by the variable quality of the slides to be projected. It has been a common problem to have to deal with both under- and over-exposed slides in a given presentation.

Tests to accomplish these goals were initiated by Dr. House. The initial approach was to use a high-gain front-projection screen, and film in black and white. This attempt was unsuccessful because: (a) it turned out to be difficult to keep stray light off of the projection screen, and (b) there was a great loss of definition and detail in the photographed image. Also, without color, there was not enough information being transmitted. The highly-detailed medical photographs and drawings, which form an important part of each lecturer's presentation, depend on color and sharp delineation of detail in order to convey information. The results of these early efforts were so without promise that further attempts to accomplish the composite of lecturer and slides were abandoned for some time.

The next attempt made utilized a high-gain Ektalite screen. The film was Kodak EFB. Great pains were taken

with the lighting setup. This attempt was also unsuccessful because the extremely high-gain screen was so directional, that the speaker found it nearly impossible to see on the screen what he was attempting to explain.

At about this time, Sy Wexler was asked to work on the problem. Instead of front-projection, he began experimenting with rear-projection techniques. The problem remained of projecting enough light onto the screen so that the image would photograph with good clarity and resolution. A Carousel projector with a xenon-arc light source provided a high level of projected light on a conventional translucent plastic screen. Unfortunately a severe "hot spot" was present in the center of the screen. Because the lecturer had to be very close to the screen, stray light falling on the screen continued to interfere with the projected image. The speaker was also severely limited in his movements because of the lighting requirements.

As these tests were proceeding, Karen Siegert, head of the Foundation film unit, heard a report about a new method of rear projection being used in

Continued on Page 78

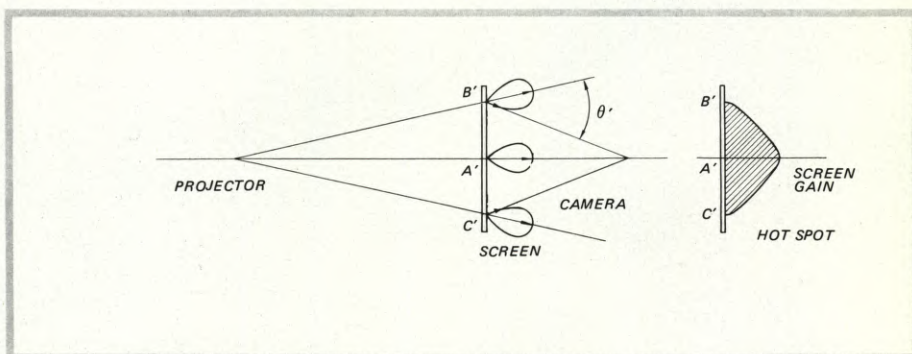


FIGURE 1—Rear projection showing the "hot spot" effect

The central ray bundle from the projector is transmitted almost directly through the translucent screen at A'. The diffusion characteristics of the screen "spread" each incident ray bundle as it is passed through the screen. Note that the only energy from the image at the edges of the screen which is visible at the camera is represented by the small arrows at the B' and C' positions. The small graph shows what the gain looks like from the camera position.



# THE FILMING OF **ON ANY SUNDAY**

Bruce Brown's cinematic  
paean to motorcycles and  
the men who ride them

By BOB BAGLEY

If there is any one trend in film-making for the '70's, it might be expressed in the ungrammatical phrase, "Tell it like it really is." How simple to say, yet how difficult to achieve! Still, this is what Bruce Brown proposed to do for motorcycling, both amateur and professional, in his film, "ON ANY SUNDAY". As his production manager, cameraman, head-holder, friend and associate, I was involved in every phase of planning, filming, post-production and releasing of "ON ANY SUNDAY". I would imagine this qualifies me to tell the story of this particular venture "like it really was".

To begin with, Bruce is not the typical Hollywood producer. Though he is a genuine professional and his picture, "THE ENDLESS SUMMER" is regarded by most critics as the classic film on surfing, his approach is somewhat unorthodox. The commercial aspect is secondary to what moves and excites him personally. It's as if he sat in your living room and said, "Hey, I'm really fascinated by motorcycles and the people who ride them. The guys who race are just amazing. I'd like to tell you some of the stories from my own association with the sport, and maybe you will share my enthusiasm and my respect for these guys."

While no two producers can call upon the same resources of talent, time or money, I feel our experience in filming "ON ANY SUNDAY" will benefit any film-maker who is committed to making his own personal statement in his own



personal way. Not everyone can afford the luxury of over two years of shooting more than 300,000 feet of film as we did, but the problems of getting together an efficient crew, locating necessary equipment, and keeping the momentum going until the project is complete are common to every production.

Bruce has been a cycling enthusiast almost as long as he's been a surfer, so the idea for "ON ANY SUNDAY" has been in his mind for a long time. However, it was by our production of a motorcycle racing segment of ABC's *Wide World of Sports* which really got us going on the picture.

Because Bruce's films appear somewhat unstructured in the conventional sense, it is easy to get the impression that production is easy-going, but this is far from the case. Bruce is very exacting about what he wants, and even if he has to do everything himself, as he often does, he usually gets what he goes after. This production entailed a great deal of careful planning.

We knew, for example, that we would have to shoot reels and reels more film than we would eventually use. We knew that filming conditions would be difficult, even hazardous. We expected to do a great deal of traveling in all kinds of weather, from the 115-degree heat of Bonneville, Utah, to the 20-below-zero of Quebec. Therefore, it would be essential to select equipment that was sturdy, portable, and dependable. It was easy to conclude that we should shoot in 16mm; on the amount of footage we would need to cover motorcycling in depth, the cost of 35mm negative alone would be prohibitive, even if the equipment were not too unwieldy for our type of filming. Too, we knew that, over a long time span, we could rely on the consistency of Eastman processing to maintain the kind of control we wanted.

Always keeping in mind that we would have the film blown up to 35mm for theatrical release, we recognized that the sharpness of the original image would be of paramount importance and that



(LEFT) Bruce Brown adjusts helmet camera on motorcycle racer to get point-of-view shots for "ON ANY SUNDAY". (RIGHT) The author, Bob Bagley focuses telephoto lens for filming of sequence with the Photosonics IP High Speed Camera. Overcranked footage recorded expressions on cyclists' faces and lent a dreamlike quality to the film.



we would require good lenses in a variety of focal lengths. Our years of filming surfing tends to make us lean a good deal toward the telephoto lens, and we intended to use similar equipment and techniques in situations where it is just about as difficult to zero in on a guy on a bike as it is to get a kid on a board. If we were to get more than a vaguely-identifiable blur when machines and their riders zoom off at tremendous speeds, soar over obstacles, or jolt up a mountain, high-speed photography would be a must. We would also need helicopter shots for tracking riders over impossible terrain.

You don't need to be a motorcycle rider yourself, as Bruce and I both are, to know that one of your major problems was going to be dirt. The cycle-churned dust would get in our lenses, mud would splatter camera and cameraman alike, rain and fog would affect our equipment, as might excessively high temperatures. Yet, much of the time we would have to take care of our equipment ourselves on location. So, again, we decided that we should select it on the basis of sturdiness, dependability, and ease of maintenance.

Sound would be a problem, too. We could have super-telephoto camera shots, but how could we match it with telephoto sound? Or slow-motion sound with slow-motion camera work? Would music enhance the mood of a motorcycling picture? If so, what kind of music, and where could we get it?

Also, we would need to evaluate various films and experiment with them. How many additional cameramen would we need for a particular assignment? Who would keep track of the footage once it was in the can?

These are some of the problems we faced at the outset, and obviously there is no one solution for either equipment or personnel when you propose to handle so many varied situations. Though it's an oversimplification to say that for "THE ENDLESS SUMMER", we put our surfboards under one arm, our cameras under the other, and went out and shot a picture, it did give us a lot of experience we could put to good

Having scored with "THE ENDLESS SUMMER", writer-producer-director-cameraman-narrator Bruce Brown repeats success with "ON ANY SUNDAY".





On any Sunday a favored stretch of the Mojave Desert looks like this when as many as 1,000 cyclists line up for a punishing cross-country race.

use on this more complex assignment. We planned the same sort of personal approach, and though Bruce and I are much newer to cycling than to surfing, we had confidence we would learn a great deal as we went along. It might look as though, on any Sunday, we'd just go out and photograph some motor-cycle action, but on any Monday, we'd clean up our equipment. On any Tuesday, Wednesday, Thursday, we'd look at our film to see what we could use and what we could improve upon. On any Friday, we'd get ready to go out again, and on any Saturday, we'd be flying to our next location. After more than a year, we knew every skycap at LAX by his first name.

Though Bruce had a concept of what he wanted to do with the picture from the beginning, there was a lot of trial-and-error in our shooting, probably one of the best reasons why the major studios are content to leave the filming of this sort of documentary to outfits

*(ABOUT THE AUTHOR: The association of Bruce Brown and Bob Bagley began when they went to junior high school together in Long Beach, back in the late '40's. After high school, the two more or less went their separate ways, Bruce into filming, and Bob into the business world, with time out to serve as aerial photographer's mate in the Naval Air Reserve.*

*When at last Bruce asked, "When are you going to quit that cotton-pickin' job and come work for me?", Bob assumed his position as business manager for Bruce Brown Productions, one he held for ten years. In this time, the co-workers were associated on "THE ENDLESS SUMMER" and in producing numerous sports segments for ABC's Wide World of Sports, NBC Sports Specials, CBS Sport Spectaculars, as well as TV commercials and sales films.*

*With the completion of "ON ANY SUNDAY", Bruce Brown Productions was dissolved. A new company, Bob Bagley and Don Shoemaker Films has been formed, with some impressive credits already on record in the specialty of sports action films. In addition to filming the Carlsbad Moto-Cross for Wide World of Sports and portions of the Baja One Thousand race, the new team has done "George Plimpton—Man Behind the Wheel" for Wolper Productions. Currently, "Peggy Fleming in Europe" is in the works as a sequel to Group One Production's Emmy-award-winning special, "Peggy Fleming in Sun Valley", on which Bob Bagley was cameraman.*

*Though the item may be correctly classified neither under sport nor business, Bob is married, and he and his wife, Barbara, are the parents of three young children.)*

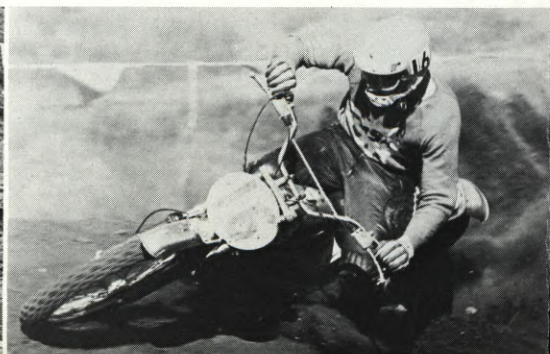
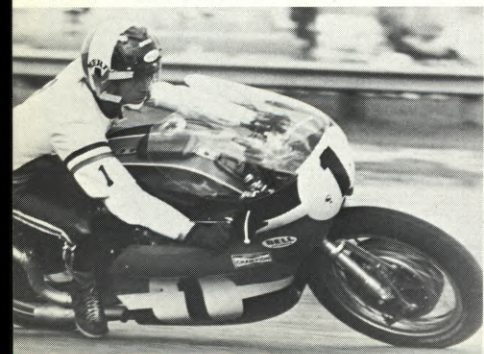
like ours. The first footage we shot, back in October, 1969, was with the two rather elderly Bolex cameras we had used in making "THE ENDLESS SUMMER". Although they have limitations, we have always found them useful for our one-man-crew type of operation. Even for "ON ANY SUNDAY", in photographing the International Six-Day Trials in El Escorial, Spain, Bruce would simply load his Bolex and as many 100-foot loads of film as he could carry onto his own bike and follow the action as best he could. The portability and simplicity of operation of the Bolex was a plus in situations of this sort, resulting in some unique scenes.

For the lion's share of our picture's footage, we went to the Arriflex. We chose the Arriflex-M because it has a gear-driven magazine, not dependent on torque motors. I don't think we used them as the manufacturer intended, with an 8-volt battery, producing up to 50 frames per second. In order to shoot slow-motion, we would set the camera tachometer for 50 frames, using a combination 8-16 volt battery in the 8-volt position. Then we'd flip to 16-volts and presto!—100 frames per second. Exposure was calculated at 24 frames per second and opened up 2 stops, and, luckily, it usually ran within 10 frames. I understand Arriflex has since offered a modification to their cameras with tachometers which make it possible to calibrate camera speed precisely, up to 80 fps, but we figured this out as we went

along. For each camera, we acquired a full complement of lenses, ranging from 500mm down to 5.7mm in focal lengths.

In some sequences, even 100 fps didn't produce the results we wanted to achieve so we also invested in the Photo-Sonics 16mm high-speed camera, Model 1P, which is capable of 400 fps. It was originally designed for instrumentation work, but it makes an excellent sport camera. We used it on numerous occasions as a general-coverage camera at 24 fps. For this camera, we also bought a large supply of high-speed film, MS7256 and EF7241, on 400-foot rolls. As it turned out, we didn't use this equipment at 400 fps as much as we thought we would. We discovered that, while you must slow the action enough for the viewer to see it, the whole feel of racing is destroyed if you slow it too much. Where this camera was particularly useful was in getting facial expressions. Bruce wanted to show the fatigue which comes to racers who participate in a Moto-cross race, which is usually run in three 45-minute legs. These men are athletes competing in one of the most physically demanding sports possible, and if the viewer is to share the intensity of competition, he has to read it in the faces of the participants. We often found we could shoot for a mere half-second, filming at 200 frames. This would be enough to show the jarring which riders experience, for example, or the concentration of a racer so en-

(LEFT) Streamlined at every possible point, this racing cycle streaks down the track. (CENTER) One of many hazards of the grueling Moto-cross race over the roughest kind of terrain is getting stuck in the mud. (RIGHT) Rounding a curve at full tilt, the motorcycle racer banks sharply and stabilizes himself with one steel-shod foot kicking up the dirt.





(LEFT) Using high-speed Photosonics camera, Brown and Bagley film slow-motion champagne sequence of Grand National champion Gene Romero. (CENTER) Bruce and Bob shoot the breeze with Mert Lawwill, Malcolm Smith and Steve McQueen during break time. (RIGHT) The helicopter filming crew included cameraman Nelson Tyler (inventor of the Tyler Vibrationless Helicopter Mount), producer-director Brown and helicopter pilot Dave Jones.

grossed he is unaware of the saliva running down his chin.

Though Photo-Sonics has since introduced a new version of their 16mm high-speed camera with a reflex system built in, the one we were using was without a reflex viewer. We had a side-mounted view-finder built for us by Century Precision Cine-Optics in North Hollywood. Bruce and I had been getting lenses from these people for the past ten years, as we had found it difficult to locate extra-long lenses in "C" mounts. Generally, we found those from Century were light, super-sharp and fairly economical.

Even with high-speed cameras, wide angle and telephoto lenses, we still could have missed a lot of the action. The plus going for us here was that almost everyone involved with the production is a rider. Bruce rides, and so do I. Don Shoemaker, our editor as well as cameraman, rides. Allen Seymour, who handles both sound and photography, rides. Steve McQueen, who helped finance the picture along with appearing in it, is an experienced rider. All this gave us the advantage of being able to anticipate where the action was going to be. The spectacular crashes in our film could not, of course, be rehearsed and staged as in a studio, but by setting up cameras at spots where we could logically expect these to occur, we got them. We used Miller tripods with fluid heads for this kind of camera positioning.

The hazards of this kind of filming became only too apparent when we almost lost a cameraman at Daytona. Dan Wright set up his camera on the outside of a turn, a good 200 feet from the track. Dan is an experienced sports photographer, and he didn't feel he was stationed in a dangerous spot. What he didn't realize was how fast a machine going 120 miles per hour could cover 200 feet. Two cycles missed the curve, and Dan was caught between them as they spilled. He suffered a severe compound fracture of one leg, a compound fracture of his arm, and a dislocated

elbow. He had to be hospitalized, of course, but what could have been a real tragedy fortunately had a happy ending. Dan recovered in time to cover the Trans-Pacific sailboat races, and then went on to Fiji for some more sailboat filming.

Despite its hazards, the pre-positioned camera also had its limitations. Bruce wanted each person in the audience to visualize what his own eyes would see if he were going down the track, passing other riders, bumping into another machine, being passed, glimpsing people in the stands. In other words, he wanted to give the feeling, the flavor, of racing by putting the viewer on a bike in the race. The answer to this was

the helmet camera. These are manufactured for Gordon Enterprises by Bell Helmets, and have an adjustable mount for the camera. We usually used two cameras; sometimes one would face forward, the other back, or sometimes both would face forward. The cameras sit about at ear level on the helmet so we modified ours to put the center of gravity lower. This helped, though it was still asking a lot to put this 15-lb. monster on someone's head, and then ask him to go out and do 160 miles per hour in traffic on the banks at Daytona!

The helmet camera uses a 5.7mm or a 10mm lens, and to get a good image size on the screen, you have to get in so

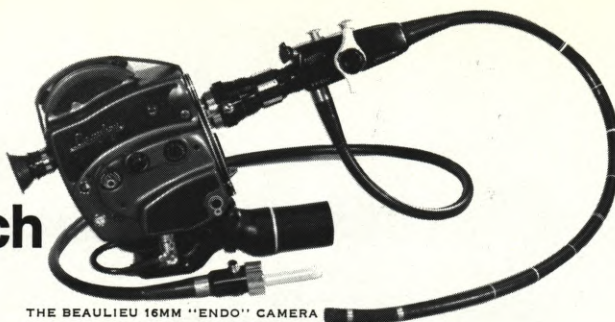
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Brown and Bagley shoot a sequence for "ON ANY SUNDAY". The film took two years to complete and utilized the skills of a score of cameramen. A total of 300,000 feet of 16mm film was shot, with the best of it edited and blown up to 35mm for theatrical distribution.



# New from Beaulieu!

## Introducing the R16BTE "ENDO" Scientific Research 16mm Camera.



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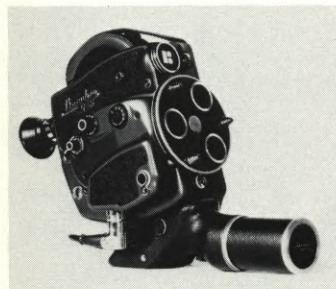
The Beaulieu 16mm "ENDO" camera has been specially designed as a scientific research cine-camera, and is ideally suited for *endoscopic* and other medical-type filming.

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The new Beaulieu "ENDO" camera has also been provided with a clear viewing spot in the center of the ground glass, which allows unimpeded viewing during filming in the low light conditions usually found in endoscopic explorations. Another aid in countering these low light levels is the *mirrored shutter* on the Beaulieu 16mm "ENDO" camera, which permits 100% of the available light to reach the film plane, and—alternately—100% of the available light to reach the viewing screen.

In addition to endoscopic and other research-oriented cinematography, the Beaulieu 16mm "ENDO" 3-lens turret camera is also ideal for all types of *normal* filming, whether for professional purposes or simply for pleasure.



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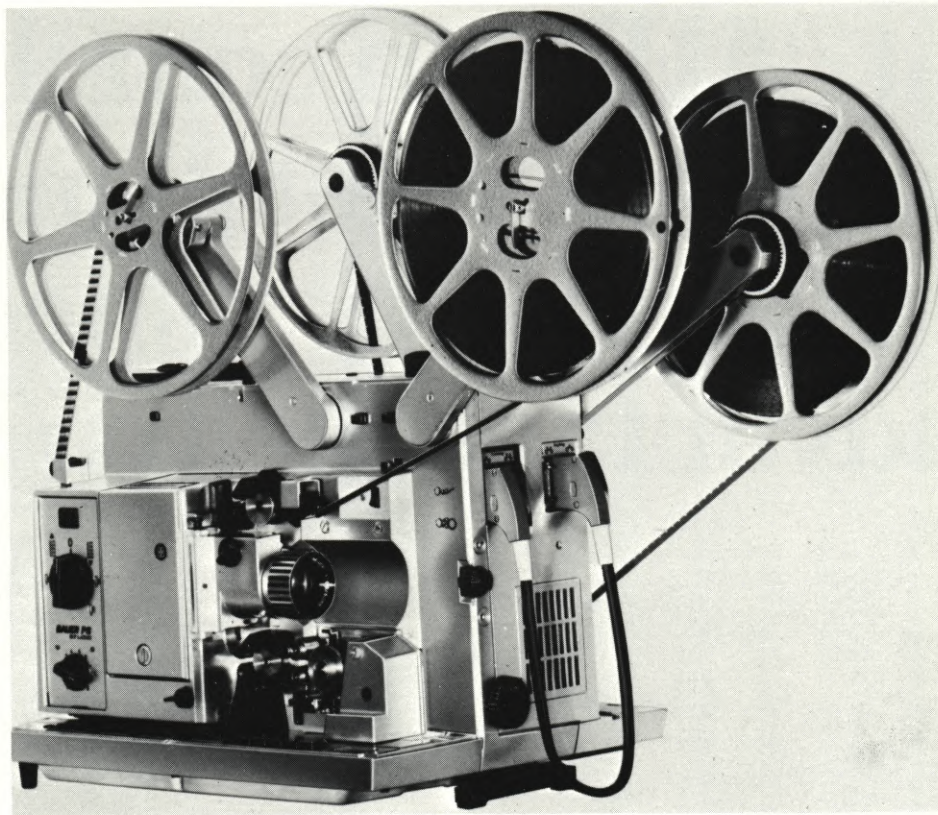
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Reel Capacity	2,000 ft. (600m)	Sound heads on sep. deck	individual magnetic heads for erasing, recording and reproduction
Film Threading	manual; for picture film and perforated 16mm tape.	Sound monitoring while recording	Yes
Projection bulb	24V-250W quartz iodine	Sound monitoring amplifier	plug-in type with outputs of 1.5V and 5-15ohm. With switch for either picture film or tape deck side
Brightness	approximately 600 lumens	Fly wheel on sep. deck	on start of projector, automatically speeded up. On stop of projector, automatically slowed down
Power Requirements	115V-60 cycles A.C./450 Watt	Central feeding sprocket on sep. deck	can be disengaged for easier positioning of tape film to start mark
Drive	Synchronous motor	Amplifier	solid state, with silicone transistors. Built in projector base
Speed	24fps. or 25fps. forward or reverse running	Amplifier output	20W. sinus; 25W music power
Aperature	7. 16mm X 9. 6mm	Built in speaker	3W (can be switched to off-half-power-full power)
Take-up assembly	load controlled, self compensating friction	Exciter lamp	6V/1A DC
Power Rewind	fast rewind for picture film, rewind for magnetic film by driving motor	Silicone photo element	type Siemens BPY 11
Shutter	2 blades	Trick recording control	for superimposing sound on sound for either picture film or magnetic deck tape
Claw	3 tooth, special hardened	Inputs Phono	150mv/500kilo ohm
Film pull down ratio	1:6.9	Microphone	0.5mv/200ohm
Adjustment of frame line	by moving claw assembly	Pre-amp	1.5v/600ohm (6db)
Picture Steadiness	+0.1%	Outputs Speaker	8ohm/15Watt
Tilting	+7	Pre-amp	1.5volt/600ohm +6db 1.5volt/600ohm, adjustable
Cooling system	double fan on motor shaft	Frequency response	optical sound -5 cycles . . . 7,000 cycles ± 3db magnetic sound -50cycles . . . 12,000 cycles ± 3db
Emergency stop	if film tears, complete power cut-off	Signal to noise ratio	45db
Hour counter	built in	Wow and Flutter	picture film — ± 4% (DIN) tape deck — ± 3% (DIN)
Reel Capacity of separate deck	2,000ft. (600m)	Weight	approximately 66pounds
Sound Reproduction of separate deck	from either center track or edge track (chosen by switch)		
Sound recording of separate deck	on either center track or edge track (chosen by switch)		
Sound reproduction picture side	either optical or magnetic sound from picture film edge track		
Sound recording	on picture film edge track		
Magnetic sound track widths (sep. deck)	center track: 2.2mm edge track: 4.8mm		

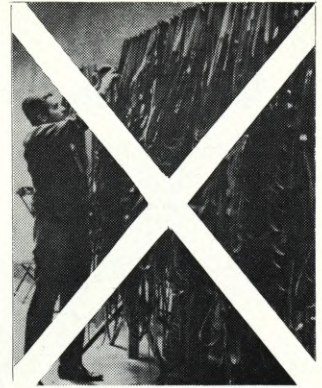
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The new Magna-Tech system electronically synchronizes a reel of picture with a reel of full-coat magnetic sound-recording film. Footage and frame "PRESETS" permit the recordist to select the scene to be "dubbed" and to fully control the advance and return of the film as the actor voices the line to be "dubbed."

The system is so accurate it will even permit the change of a single word without danger of erasing an adjacent word.

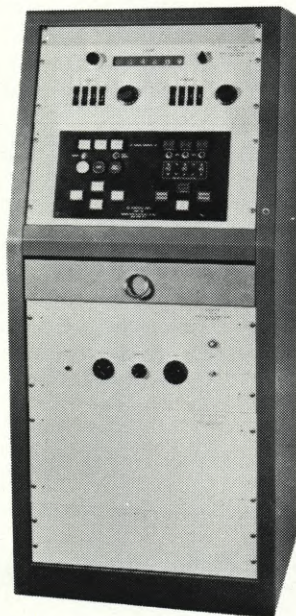
High speed return of the film to "start" saves time and permits new starts without waiting for a "loop" to complete its trip.

Actors, who so often succumb to the rhythm of a loop, are spared this hypnotic interference. Acceptable "takes" can be stored on the 3-track film and replayed for final selection.

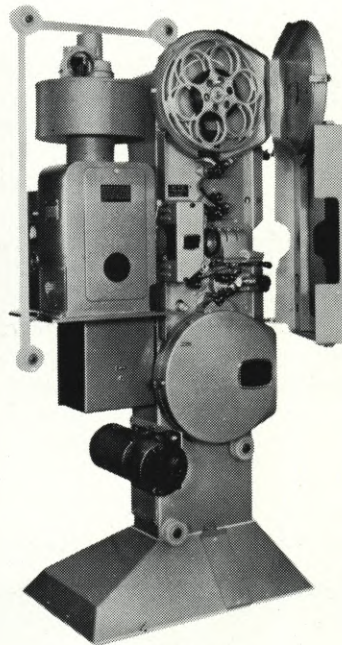
A complete remote control system is provided the director so that, once the recording engineer has preset footages, the director can take over if he wishes and directly control every facet of the recording.

The Electronic Looping System precludes the need for cutting loops and eliminates the need for editing of the track. Complete reels of the motion picture are run in synchronization with the full-coat magnetic film on which the sound track is recorded. Transfer of the best takes is then made to the third track of the same recorder.

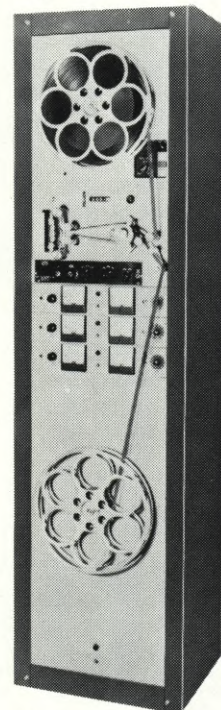
This track now has all of the final takes in sequential position and ultimately permits the screening of the picture and the final edited track in perfect synchronization. From this point the track is ready to go to a mix and no further editing is required.



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# "THE LAST PICTURE SHOW"

## A STUDY IN BLACK AND WHITE

Brilliant new director Peter Bogdanovich and veteran cinematographer Robert Surtees, ASC, combine talents to create an outstanding film

"Small-town life in America is not like 'OUR TOWN,'" says director Peter Bogdanovich. "Especially in Anarene, Texas in 1951."

He is referring to his feature film, "THE LAST PICTURE SHOW", a BBS Production for Columbia Pictures, which has had the nation's top critics reaching for a whole new batch of superlatives.

It is a film story about growing up in a small town that is running down, where being free means getting out—and it is worthy of the critical raves which are being heaped upon it.

Though Bogdanovich is 31 years old and, therefore, could not possibly "remember" accurately what small-town America was like in the nineteen-fifties, he has somehow managed to capture the atmosphere of the time and place with the utmost precision. There is nothing startling or "far-out" about the film's style. Rather, it may be said to pay homage to the straightforward, superbly crafted, unobtrusive finish characteristic of the "traditional" American films that were a mainstay of entertainment in this country during the period between 1930 and 1950.

For BBS Productions, which has produced a series of poignant contemporary probes—"EASY RIDER", "FIVE EASY PIECES" and "DRIVE, HE SAID"—"THE LAST PICTURE SHOW"

represents a departure. But "THE LAST PICTURE SHOW" is a look back which is less nostalgia than a slice of the way it really was. And filming the way it was meant capturing the way it looked and the way it felt to be young and vulnerable in a northern Texas town in 1951 and 1952.

To obtain an authentic look, Bogdanovich decided to go to a place that had the atmosphere and feel of the town novelist-screenwriter Larry McMurtry called "Thalia" in his original novel.

Although there was a good deal of initial apprehension from the Anarene "locals" when the film crew arrived, once shooting actually began, the residents assumed a variety of speaking and non-speaking parts and "the people proved more patient than they had any right to be. We tied the place up for two months!" says Bogdanovich.

So that the non-Texans in the cast would get to know the terrain and speaking patterns, they spent a week on the location before a foot of film was shot, just soaking up the flatlands atmosphere.

But, like the sets, most of the actors were indigenous: Texans predominate in the supporting parts. Actors from several Texas cities were hired to portray the high-schoolers, cowpokes and grease monkeys of Anarene. Many who came to watch quickly found themselves in

front of the cameras, with a spontaneity Bogdanovich insisted on around the set. That kind of flexibility brought some amazing results. Example: Sam Bottoms was selected for the key role of Billy when he arrived to watch his older brother Timothy on the first day of shooting. Example: for the "skinnydipping" party, Bogdanovich picked some local high-schoolers, but feared they might be a little wary about making their film debuts in the altogether. "As it turned out, we had a great deal of trouble getting them to put their clothes on," says the director.

The way it felt: "When I read McMurtry's book, it touched a very responsive chord. I got very excited by the notion of doing an early fifties period piece and exploring the change that came with the demise of the small-town movie house and the introduction of television. A whole kind of dream world ended and a lot of other illusions began breaking up," observes Peter Bogdanovich.

Bogdanovich's aim of capturing the end of an era of dreams and possibilities echoes through all the episodes of the film. "THE LAST PICTURE SHOW" conveys the onset of age and responsibilities for a generation of kids born during the Depression and raised during World War II. Shot in black and white (Bogdanovich: "I thought everything

(LEFT) In the final sequence of "THE LAST PICTURE SHOW", a BBS Production for Columbia Pictures, the doleful young hero (Timothy Bottoms) learns about life from his former mistress (Cloris Leachman). (RIGHT) All of the interior sequences were shot inside actual buildings on the location in Archer City, Texas, where the entire film was made. Skillful lighting by Director of Photography Robert Surtees, ASC, captures the realistic atmosphere of a dying small town in the fifties.







(LEFT) Jeff Bridges and Timothy Bottoms arrive at a confrontation on the main street of the town. (RIGHT) The photography of "THE LAST PICTURE SHOW" is clean and sharp, reflecting a high degree of professional finish, but with absolutely no compromise toward glamorizing the town or its inhabitants.

would look too pretty in color") to enhance the gritty, shabby feel of Anarene, "THE LAST PICTURE SHOW" will be familiar to anyone whose past includes a small town. A cast of talented youngsters—Timothy Bottoms and Jeff Bridges in only their second screen appearance, Cybill Shepherd and a host of supporting players making their debuts—only heightens the freshness of the production and gives off an unmistakable feeling of authenticity.

When Sonny and Duane go to the movies the night the picture show closes, the night before Duane goes off to Korea, they see Howard Hawks' "RED RIVER". "I wanted a classic western to close the theatre," says the director, "a picture about Texas when it meant something in an epic sense." "THE LAST PICTURE SHOW" is an epic about the end of epics.

For the director, the picture is a personal triumph—and deservedly so, for it reflects the talent and skill of a technician who has learned his craft well.

Peter Bogdanovich made his startling directorial debut in 1968 with "TARGETS", the gripping and widely acclaimed study of a sniper. The first American critic turned director, Bogdanovich has authored studies of Alfred Hitchcock, Howard Hawks, John Ford, Fritz Lang, Allan Dwan and Orson Welles and has completed a feature documentary on Ford, "DIRECTED BY JOHN FORD" (see *American Cinematographer*, November, 1971), which the American Film Institute will release this year. He also worked on a BBC-TV study of Howard Hawks in 1967, and has written countless articles for *Esquire*, *Saturday Evening Post* and numerous other periodicals. But the 31-year-old native of New York City says,

"I always considered myself a director who was making a living writing about motion pictures, not the other way around." Bogdanovich served as Assistant to the Director on Roger Corman's "THE WILD ANGELS" (1966), also doing a considerable amount of re-writing on the script. He has directed and produced a number of theatrical productions off-Broadway and in summer stock. A genuine scholar of film, Bogdanovich feels his greatest affinity for the work of Ford and Hawks. He is currently directing and producing a comedy for Warner Bros. called "WHAT'S UP, DOC?" with Barbra Streisand and Ryan O'Neal.

"THE LAST PICTURE SHOW" owes much of its visual and dramatic impact to the rich, gutsy black and white photography of Robert Surtees, ASC, three-time Academy Award-winner, whose previous assignment ("SUMMER OF '42") also dealt with nostalgic Americana, but was completely different in style. The photography of "PICTURE SHOW" is sharp and crisp, leaning heavily on extreme depth of field, and it has a dark, brooding intensity that delineates with graphic precision the hopelessness of a dying small town.

"Bob Surtees is the first cinematographer whose name I remembered as a kid going to the movies," says director

Director Peter Bogdanovich (right) demonstrates a bit of action for Bridges and Bottoms. A well-known film critic and historian, Bogdanovich has special admiration for the work of directors John Ford and Orson Welles.



Bogdanovich, who played out an old fantasy when he picked Surtees to film "THE LAST PICTURE SHOW". At age eleven, Bogdanovich went to see "KING SOLOMON'S MINES" with his father, a painter, and remembers his father marveling at the photography of Surtees, who won his first Academy Award (Best Color Photography) for the film in 1950. Looking for a cameraman familiar with black and white, Bogdanovich chose Surtees after hearing a glowing recommendation from Mike Nichols, for whom Surtees shot "THE GRADUATE".

Born in Covington, Kentucky in 1906, Robert Surtees' distinguished career includes "THE BAD AND THE BEAUTIFUL" (Academy Award for Photography in 1952), "BEN HUR" (Academy Award for Color Photography in 1959), "INTRUDER IN THE DUST", "MOGAMBO", "OKLAHOMA" and "DOCTOR DOLITTLE", among many others.

In the following candid interview,

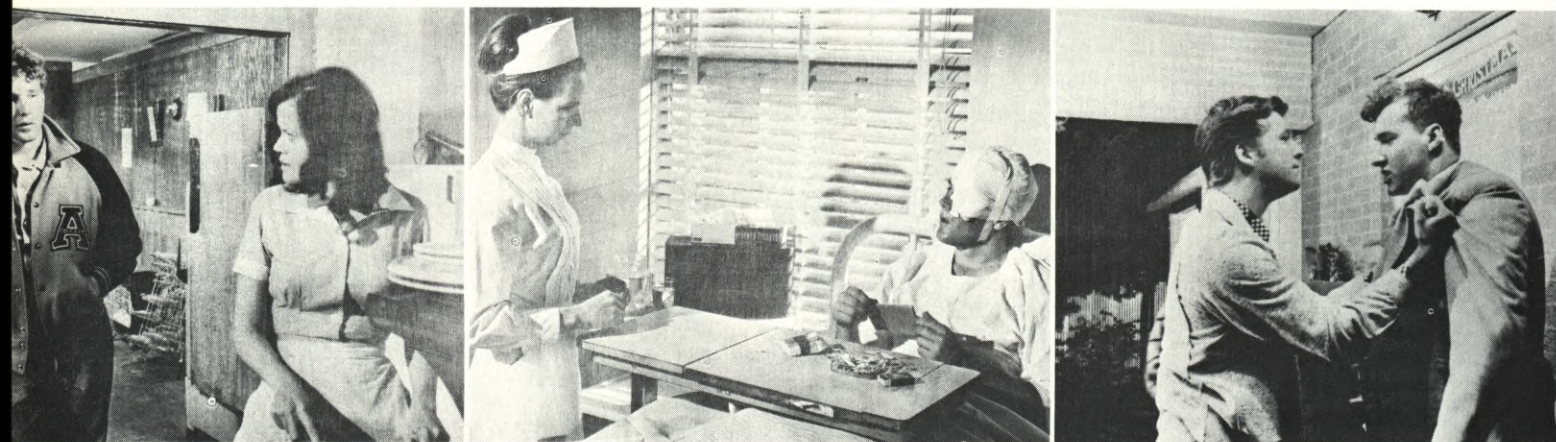
*ers, seeing a relatively new picture on the tube, in black and white, will think something's gone wrong with their receivers. The idea of shooting in black and white came from the director, Peter Bogdanovich. He had become well-known as a film critic (the only American critic who liked American pictures) and also as a film historian, and had studied the styles of all of the outstanding films of the past. He is a great admirer of John Ford and Orson Welles, technically speaking, and has written books about both of them. He especially liked "CITIZEN KANE" and in our preliminary meetings, before I was definitely assigned to the picture, he asked what I thought about shooting his picture in black and white. Naturally, I said it would be great. It would be a change. Gosh, I don't know how many years it's been since I've done a black and white picture.*

**QUESTION:** How did you arrive at the distinctive photographic style used in the film?

*things like lighting a wall so that streaks of shadow fall onto it. Instead, I decided to light the walls with soft, flat light. As it was, we had to put most of our lighting units on the floor and hide them everywhere in the actual interiors.*

**QUESTION:** What kind of shooting schedule did you have?

*SURTEES: Eight weeks—which is like working at the speed of a quickie compared to the expensive features that are made, but we had to work that fast because of the amount of money available. Then, too, it was really Peter's first feature (although he had made one previous low-budget feature on his own, which wasn't a success) and he had to figure things out—which takes a bit more time than usual, also. I will say that he's one of the brightest guys I've ever known. I worked with Mike Nichols on "THE GRADUATE" and I'd rate this fellow right up there with him. Mike is an effervescent sort of man,*



(LEFT) Lighting problems were intensified by the extreme depth of field style of the picture, plus the fact that the director often called for scenes in which the actors moved 360 degrees in the set, followed by the camera. (CENTER) An arc light, placed outside a window, was sometimes used to bolster effect of exterior sunlight when nature failed. (RIGHT) Two arc lights were pressed into service to light backgrounds for night-for-night location shooting.

Surtees, a veteran cinematographer with a degree of verve, enthusiasm and imagination surpassing that of most of the younger technicians in the industry, discusses the unique challenges and satisfactions of photographing "THE LAST PICTURE SHOW":

**QUESTION:** I'd like to ask first, how it came about that "THE LAST PICTURE SHOW" was photographed in black and white instead of in color.

*SURTEES: That's the question I'm asked most often. It's generally understood in the industry that it's harder to sell a black and white picture to TV later on, because all features are shot in color now. They're afraid that TV view-*

*SURTEES: Basically, what we did was go back and use some of the techniques of Orson Welles—but not as extreme, because we were shooting in all real interiors and on a very small budget. It takes a huge amount of foot-candles to get extreme depth of field shots indoors and we had neither the room in our "sets" nor the budget to accommodate a lot of big lighting units. As for style, Bogdanovich and I arrived at the idea that the photography should look as if it had been done by an experienced amateur who had a camera he could hold awfully steady and who liked to drop in on people and photograph them. This meant getting away from certain things we've done photographically in every picture over the years—*

*while Peter is much more serious. He's colder, too. He realized this and he fought it.*

**QUESTION:** In what ways does Bogdanovich's methods differ from that of other directors you've worked with?

*SURTEES: Well, for one thing, he doesn't shoot master scenes. He does each bit of the action separately and picks the next cut up from there. For example, there is one sequence in which two boys go all the way around a car pushing and arguing and it ends up with one boy getting hit with a beer bottle. It's a short sequence—it couldn't have run much more than 200 feet in the final editing—but it was made up of 34*

separate cuts. At the time, I wasn't quite sure how well it would go together, but he put it together and it works beautifully. I wouldn't recommend that every director try that, however. Of course, Bogdanovich does all of his own editing—even the routine things that an assistant editor would ordinarily do. He works without an editor in the belief that, if you have another man involved (and even if you are working right over his shoulder), it will affect the final result. He has a point there. In the sequence I just mentioned, for example, unless you were Peter Bogdanovich, you wouldn't know how to put it together.

**QUESTION:** It appears that you enjoy working with new young directors.

**SURTEES:** Those fellows amaze me—the ones that are good, that is. Mike Nichols, when I worked with him, was 32 and Peter was 29 when we started his picture. But neither one of them were young guys who were just starting out. Mike had proved himself to be probably the best director in New York on five plays before making his first film, so he wasn't some kid walking the sidewalks who suddenly jumped into being a director. The same is true of Bogdanovich. He'd had so much contact with films, motion picture history and the work of various directors, that it gave him considerable background. I was afraid, at first, that he might become too mechanical—like doing a John Ford thing today and an Orson Welles thing tomorrow—but that wasn't true, actually. He changed things considerably and came up with his own style.

**QUESTION:** From the cinematographer's standpoint, which do you think is more difficult to shoot—black and white or color?

**SURTEES:** From the technical standpoint, I still insist that black and white is much more difficult than color.

**QUESTION:** Why?

**SURTEES:** For example, in an actual interior, if you pan from a well-lighted figure to an area that is dark but too cramped to place lights where you really want them, you can just flatten that area out and get by. But in black and white, if you want a shadow, you've got to put it there, man. You can't depend upon fill light to take care of it. You really have to model the subject with light instead of counting on the colors for separation. Of course, the right makeup, wardrobe and sets become more important in color. You can some-

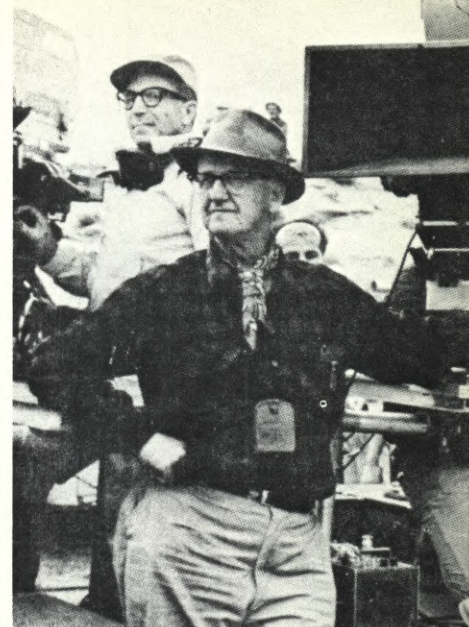
times get by with the wrong makeup in black and white and you can help a bad set. You can use smaller lamps and get in behind chairs and break up walls by putting shadows on them. But, on the other hand, in shooting black and white, you have to do it. You can't count on the process you're using to do it for you.

**QUESTION:** What reactions have you received regarding the use of black and white for this picture?

**SURTEES:** I've heard a few comments. Either people like the photography very much or they don't like it at all. One reviewer said that it didn't have anything like "HUD" in it. Jimmy Wong Howe photographed "HUD" and it was beautiful. But "THE LAST PICTURE SHOW" couldn't be beautiful. That kind of photography would have been all wrong for this picture.

**QUESTION:** Could you comment a bit more on your use of extreme depth-of-field in this picture?

**SURTEES:** When Gregg Toland photographed "CITIZEN KANE", the style called for a really exaggerated depth-of-field, which meant stopping the lens down as far as possible and using a tremendous amount of light. In order to stop down that far, he resorted to something that had been done in the old days of photography. He had the irises removed from his lenses and replaced



Three-time Academy Award-winning Director of Photography Robert Surtees, ASC, likes working with new directors—those who have talent, that is.

with slides that had very small holes drilled in them—something like the mattes used in the Spectra exposure meter to adjust for ASA ratings. Well, we didn't go that far. But I shot almost all of the picture, including the interiors, at F/8, occasionally stopping down to F/10. That still required a heck of a lot of light by today's standards—600 foot-candles at F/10.

**QUESTION:** What film stock were you using?

Continued on Page 100

Bogdanovich gives direction to Bottoms for sequence in which two boys move all the way around a car arguing and eventually fighting. Surtees says it took 34 separate cuts to assemble this relatively short sequence. Bogdanovich shoots no master scenes.



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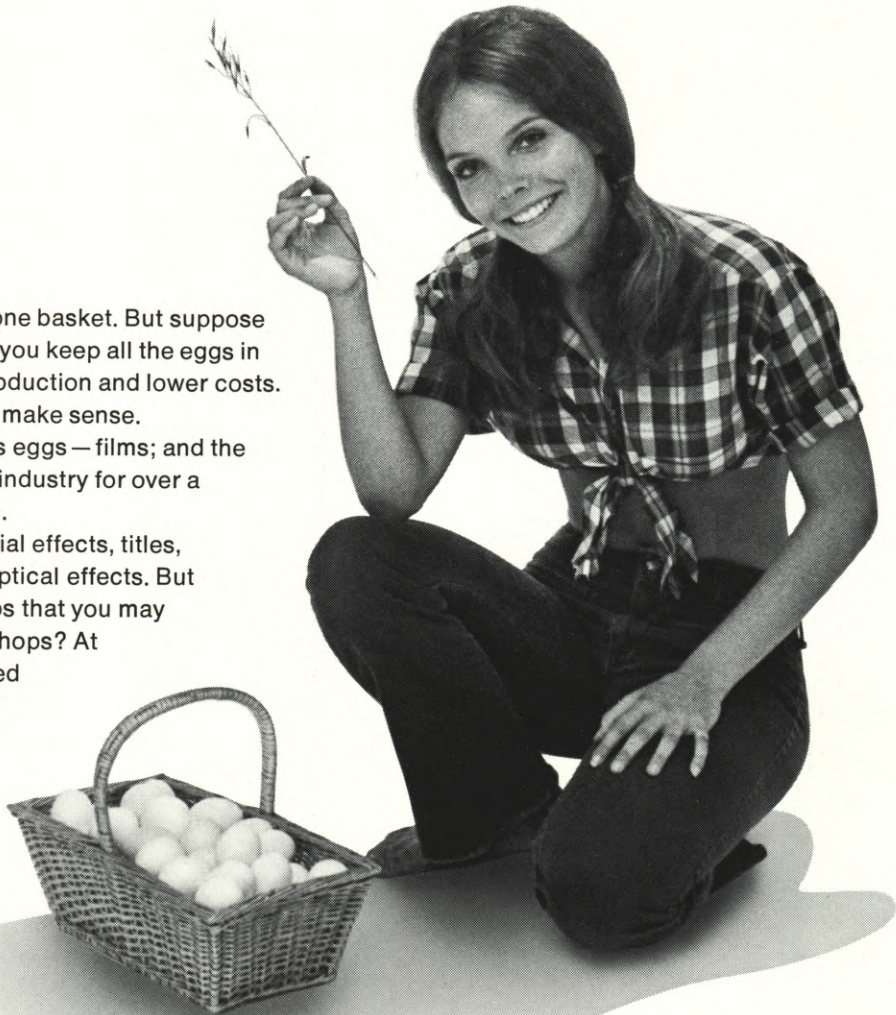
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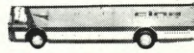
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# 23

# CINE mobiles

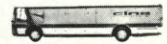
OCTOBER/NOVEMBER

# FILMING



SALT LAKE CITY

**TRUMAN CAPOTE'S "THE GLASS HOUSE"**  
TOMORROW ENTERTAINMENT/CBS  
ROGER GIMBEL - EXEC. PRODUCER



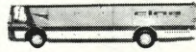
WYOMING

**HOMECOMING**  
CBS STUDIO CENTER  
BOB JACKS - PRODUCER



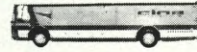
MEXICO

**THE WRATH OF GOD**  
MGM STUDIOS  
RALPH NELSON - PRODUCER



CANADA

**KANSAS CITY PRIME**  
JOE WIZAN - PRODUCER  
CINEMA CENTER FILMS



LOUISIANA

**SOUNDER**  
MARTIN RITT - DIRECTOR  
RADNITZ-MATTEL PRODUCTION



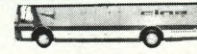
LOS ANGELES

**HICKEY AND BOGGS**  
UNITED ARTISTS PRODUCTION  
F SAID - PRODUCER CULP & COSBY - STARS



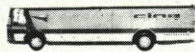
FLORIDA

**THE FROGS**  
AMERICAN INTERNATIONAL PICTURES  
NORM HERMAN - EXEC. PRODUCER



LOS ANGELES

**TO SAVE HIS LIFE**  
CBS/TWENTIETH CENTURY FOX PRODUCTION  
WALTER GRAUMAN - EXECUTIVE PRODUCER



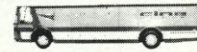
SAN FRANCISCO

**PLAY IT AGAIN SAM**  
PARAMOUNT PICTURES  
ARTHUR P. JACOB - PRODUCER



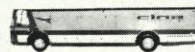
LOS ANGELES

**BEARCATS**  
FILMWAYS/CBS  
MORT FINE/DAVID FRIEDKIN - PRODUCERS



GEORGIA

**LIKE A CROW ON A JUNE BUG**  
PRODUCERS FUNDING CORPORATION  
HARVEY BERNHARD - PRODUCER



LOS ANGELES

**CADES COUNTY**  
20TH CENTURY FOX  
CHARLES LARSON - PRODUCER



FIRE ISLAND, N. Y.

**A CHANGE IN THE WIND**  
GSF PRODUCTIONS  
DAVID GILL - PRODUCER



N. Y. & MIAMI

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ABC CIRCLE ENTERTAINMENT  
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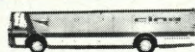
PHILADELPHIA

**RED HOT LOVERS**  
PARAMOUNT STUDIOS  
HOWARD KOCH - PRODUCER



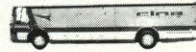
MEXICO

**FORD COMMERCIALS**  
J. WALTER THOMPSON - PRODUCER



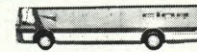
MONTEREY

**HOT SUMMER WEEK**  
THOMAS SCHMIDT - PRODUCER - DIRECTOR  
FANFARE FILMS PRODUCTIONS



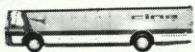
MEXICO

**HARDCASE**  
ABC/HANNA-BARBERA PRODUCTIONS  
JOE BARBERA - EXEC. PRODUCER



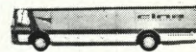
CALIF./HAWAII

**DIE THE YOUNG**  
CROSSBOW FILMS INTERNATIONAL, INC.  
BOB DAVIS - PRODUCER



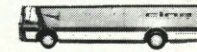
LOS ANGELES

**GETTING AWAY FROM IT ALL**  
ABC MOVIE OF THE WEEK  
PALOMAR PRODUCTIONS



ALABAMA

**PAYDAY**  
PAYDAY PRODUCTIONS  
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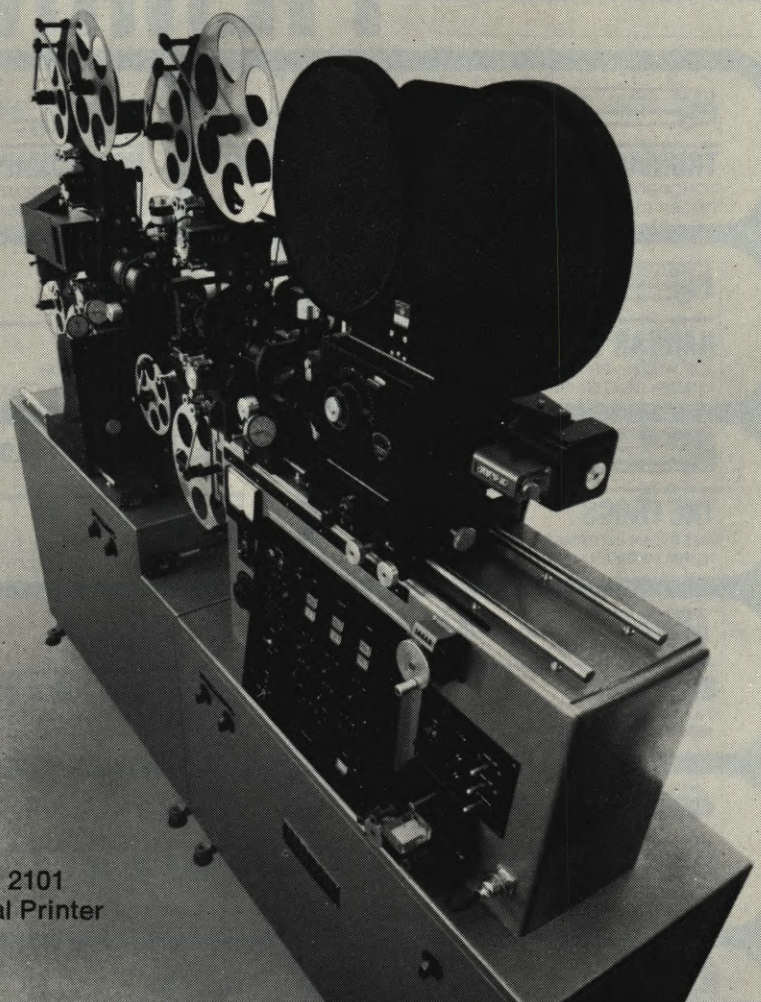
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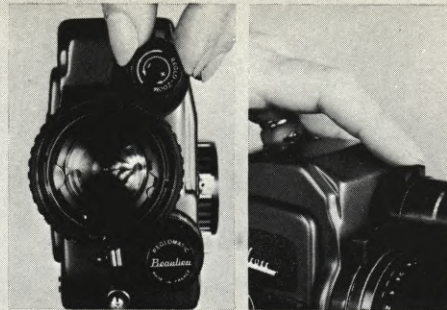


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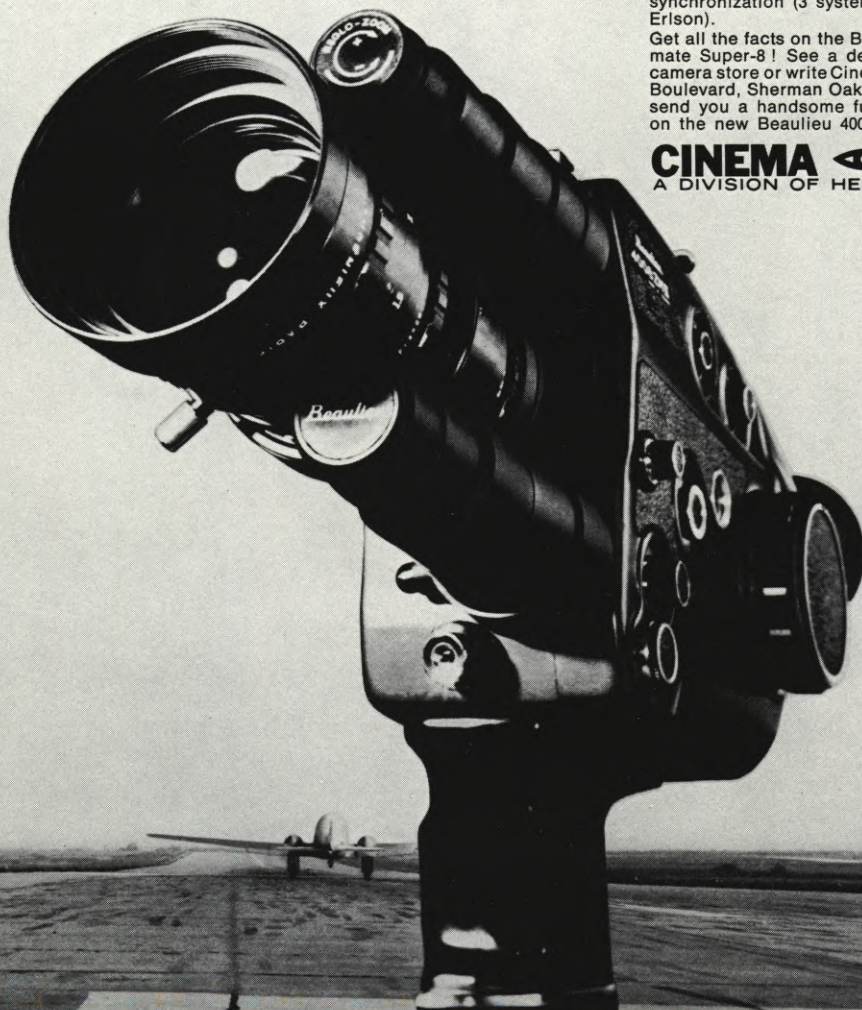
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# TO TELL YOU SOMETHING

By **WALLY GENTLEMAN**

*President, SPEAC Ltd., Montreal*

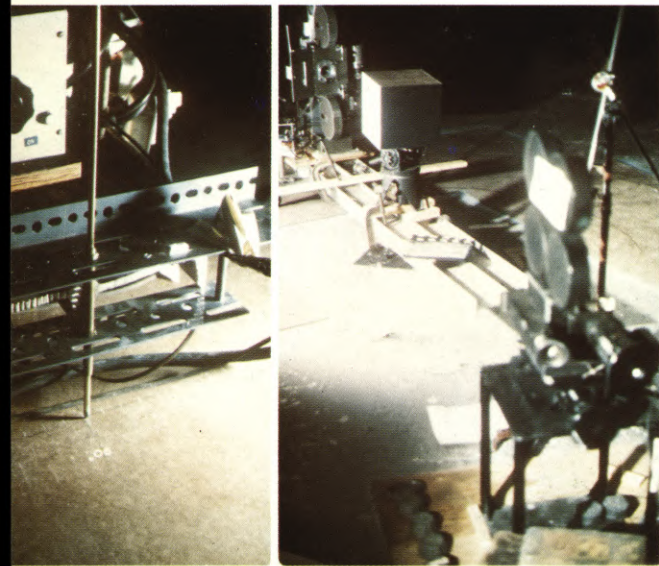
The three-screen version of "HELLO... I NEED TO TELL YOU SOMETHING" continues to be received with high enthusiasm by audiences attending the Chicago Museum of Science & Industry, sponsored by Illinois Bell. This film, the brain child of a very talented and sincere human being, Lew Sayre Schwartz, President of Ciné/Graphique Inc., New York, follows a deceptively simple structure illustrating how communication becomes meaningful in our lives. The film puts forth the neglected premise that increased sensitivity between people when they are trying to reach one another might be one key to successful communication. The further

intention is not to teach, but to provoke greater awareness of the need for and problems of inter-personal communications.

The Staff of SPEAC Ltd., Montreal, Wally Gentleman presiding, enthusiastically co-operated in this multiple graphic venture in many different ways, translating the creator's intent with specialised techniques. In this they were aided greatly by the pre-recorded tracks of artists and the unique music of two young New York composer/singers, Barbara and Ernie Calabria. The duration of one musical composition dictated the speed of revolution of a cube revolving in limbo bearing upon all its faces a

selected parade of typical United States citizens.

To relay these images in the correct perspective as they turned relative to the camera position, a rear-projected stop-frame projector was installed upon two strapped I-beams pivoting about a centre to which was aligned a bi-pack, stop-frame Bell & Howell camera. The projector, supported by a triangular wheeled carriage running over a quarter-inch panel of hardboard on which was scribed degrees of movement per frame, was aligned to project a picture that would match the forward face of a cube revolving at the dead centre of the pivot point. The camera lens was also horizon-



(LEFT) Closeup of floor increments and spring-actuated indicator for stop-frame filming. (RIGHT) Fundamental set-up of rear-projector and camera, showing black and white cube from which mattes were generated.

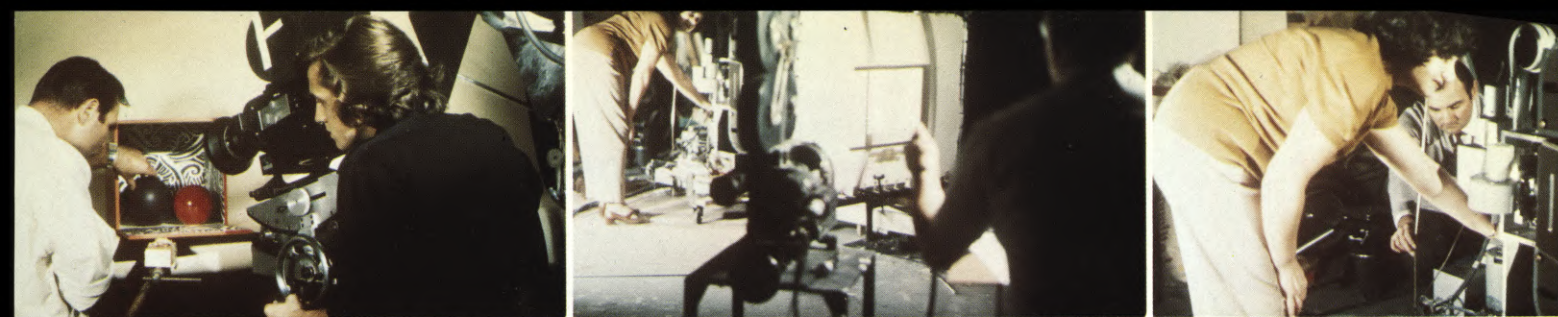


(LEFT) Worrall geared-head on tripod, pressed into service to function as rotational base to spinning box dressed with graphics. (RIGHT) Animator positions clothes peg mannikins for stop-frame cinematography.

(LEFT) Back of box with rear-lit transparency revealed by withdrawal of box lid by nylon cords to ceiling fixture. (CENTER) Revolving ball actuated by Bodine motor-driven pulley wheel to rear of sphere, half of which protrudes through seamless backing photographed with zoom effect of Angenieux lens. (RIGHT) Box lid raised by nylon cords to ceiling pulley arrangement black metal ball secured by magnet.







(LEFT) Cameraman Richard Ciupka positions ball position in relation to printed background in box, as animator positions ball on Velcro-gripped base. (CENTER) Bi-pack Bell & Howell stop-frame camera with rear-projection screen in position for oblique image projection. (RIGHT) Animators Margaret Kelf and Stan Heskins position stop-frame rear-screen projector during process photography of revolving box.



(LEFT) Mitchell R35 camera in fixed position to grease-pencil markings on glass which indicate the future tracks of lead-weighted mannikins. (CENTER) Animator Stan Heskins working to floor increment markings for rotation of rear-projection screen at other end of I-beam radius. (RIGHT) Cameraman Richard Ciupka positions supplementary air-blower to projection gate to avoid image heat deformation of projected film.

tally aligned with the projection lens. It will thus be seen that when the I-beam was exactly at  $90^\circ$  to the left of the camera position with relation to the optical axis, the rear-projected picture to high-diffusion screen would not be observed from the camera position. As the projector was rotated through  $180^\circ$  around the pivot point the camera would observe the picture on the screen, first as a narrow band of light becoming trapezoidal, then square when immediately opposite the camera—the projector screen and camera being in complete horizontal alignment. Then progression through the trapezoidal opposing perspective to become a sliver of light at the opposite side of the camera frame relative to commencement position. This effectively presented the perspective of a cube face turning through  $90^\circ$ .

In order to generate the masks necessary for setting a cube with motion picture faces in limbo, a one-foot-square black wooden cube with one white face was pre-shot on the identical apparatus before the actual rear projection of motion picture images. The white face of the black cube was lit against a black velvet background and rotated through  $180^\circ$  using the same stop-frame floor markings that were to be used at the time of bi-pack assembly of images. This was exposed under high contrast film stock through a complete rotational cycle.

The resulting developed negative was printed and extended optically on the optical printer for an eleven-second length of film equivalent and, on a reverse optical run, flipped left-to-right to render an exact duplicate of the movement. This resulted in prints of a series of rotating left-hand images and a separate length of right-hand images. These two films became the high-contrast masks that would, when run in bi-pack with Eastman colour stock in the camera, allow the photography of the images on the rear-projection screen while effectively masking all background exposure. The two high-contrast prints were optically combined to form a third high-contrast matte which, when in bi-pack with the previously exposed Eastman colour in a camera registering gate, would effectively prevent re-exposure of the rear-projected image previously copied, permitting any sort of background to be photographed, which, in this case, was designed to be a plain yellow limbo ground.

Three image dissolves per face during the turn were required and these dissolves were made at the time the timed, colour-balanced print was made at the laboratory.

In order to prevent overheating of the projected film, a heat glass and air-blower was installed at the projector gate to avoid image deformation during the quarter-of-a-second exposure per

frame. Camera and projector were synchronised and two painstaking camera assistants animated the turns of the pivotal apparatus on a stop-frame basis throughout the series of 288 frame runs. After the first run, the first high-contrast mask was removed and the second bi-pack mask synchronised for the second re-exposure and the final exposure necessitated a further bi-pack mask change when photographed on a plain yellow background.

This primitive apparatus, at cost of infinite labour, produced the final effect that claims so much attention of audiences viewing the Bell exhibit.

Among the many problems production of this film entailed was the stop-frame animation of little peg men, the delightful creations of Miss Jill Schwartz, that stood 4" high. A meeting of thirteen professors was required to be animated and this was effected by mounting each individual model on a central darning needle, one end piercing the wood of the model, the other end being glued into a lead solder base. The base weighted the slight little figures upright and the centre needle allowed a rotary motion to simulate a walk. The forward progression of the walk was engineered by pre-selecting the course each individual member would take to arrive at the discussion table and cutting a corresponding slot in a black velvet plywood supported overlay through

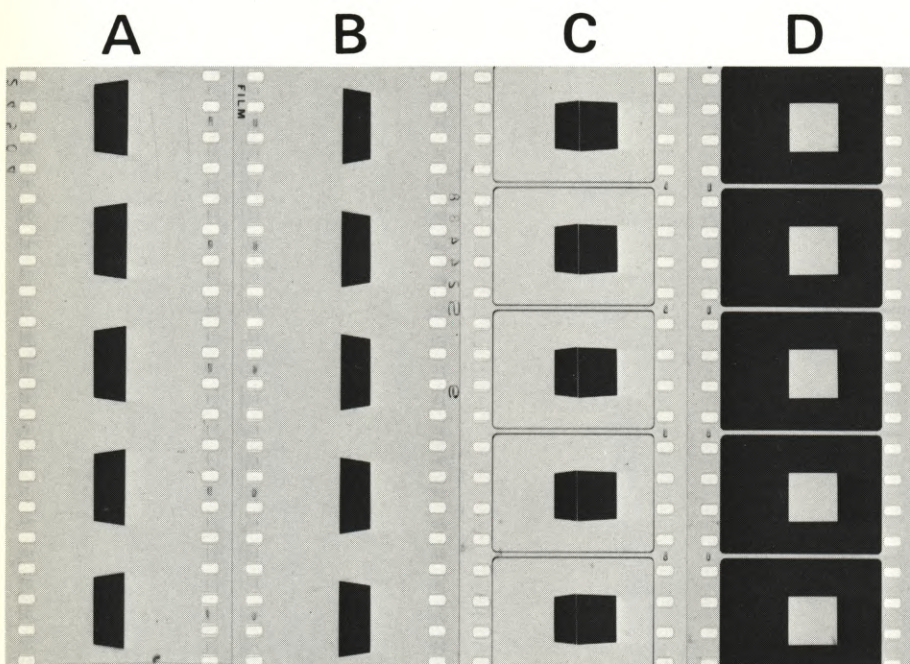
which the support needles ran to the lead bases below, resting on window glass covered with fine machine oil. Maximum effect was achieved by using a 25mm Super Baltar lens on the stop-frame motored Mitchell R35 camera, the lens being switched to a Schneider 105mm closeup lens to photograph the tiny faces drawn on half-inch-diameter heads. The heads were pivoted on copper wire necks threaded through a supporting bead and the balsa-wood arms were animated via soft wire armatures. The long shot animation of these people required memorising and actuating fifty-two moves per frame. The depth of field at such close quarters was maintained by working at F/22, with an exposure of a half-second per frame.

and the artists returned to their stage positions in alignment with the grease-pencilled image before commencing the next exchange of words. When these sections at the selected points were assembled with soft cuts the visual changes with synchronous dialogue demonstrated a startling progression of the change process in both protagonists.

Ciné/Graphique Inc. designed a black ball in an orange-coloured box to be symbolic of an imprisoned object breaking free. The box was built in high-grade plywood with a removable back to mount one-foot-square transparencies required. Since the box required a limbo ground, the foreground sloping run of no-seam paper lit with 4K soft lights had a separation between the

confrontation with the worst aspects of life. The initial movements of the ball were stop-frame animated by application of an electro-magnet on the underside of a sloping table. Halfway down the table a partly patterned ball was substituted and the rolling continued to a third substitution point where the complex design filled the frame of an Angenieux 25mm-to-250mm zoom lens. At this point, a frame registration was taken and the camera re-aligned to an identical ball whose leading hemisphere was presented through a hole in a seamless backing and rotated from the rear by a pulley used as a drive wheel.

The production of the film is a lively melange of incident involving memorable music with perceptive lyrics, dance, mime, graphics, cell animation, optical printing, location and studio cinematography of compelling order. The interaction between and the re-inforcing power of a three-screen presentation presents a delightful and informative spectacle to the many thousands of people who continue to view this sincere and sweeping creation of its Producer, Mr. Lew Sayre Schwartz, who united a dedicated group of film-makers and artistes to the common aim of a meaningful contribution to man's state of awareness. ■



Progression of mattes generated from rotating white faces of box (A) Right face. (B) Left face. (C) Optical assembly of rotating faces. (D) Camera matte used when shooting rear-projection.

Perhaps one of the most effective presentations of the film is a cross dialogue between a contemporary father and son demonstrating the perils of poor communication. During this short sequence, a forty-year-old father is aged to ninety and an Ivy League youngster is transmuted to a full-blooded hippie during synchronous hostile crosstalk then back again to visual normality.

The erection of a 10 x 8 view camera at the side of the motion picture camera serves to indicate the actual positions on ground glass during the interruptions of the dialogue presentation for make-up changes to the actors. At the end of each selected dialogue delivery the body positions were marked in grease pencil on the ground glass of the view camera

table end and the wall face bearing a vertical continuance of the no-seam paper to allow for underlighting a 45° reflection face to illuminate the transparency. The animation of the box lid opening was engineered by attaching a nylon thread to each upper corner of the detachable front lid which was coupled to a variable-speed geared motor output shaft concealed in the ceiling recess. The transparent nylon remained invisible to the camera lens as it opened the box at the various speeds required to reveal the black ball.

The black ball was conceived as running into daylight and becoming suffused with colour and design to represent the joy of living and then to revert to the box in black despair on

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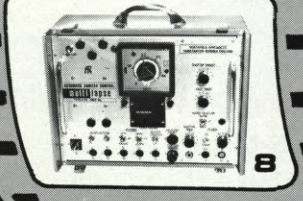
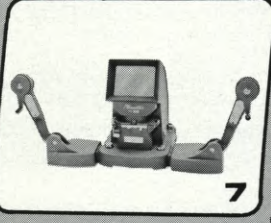
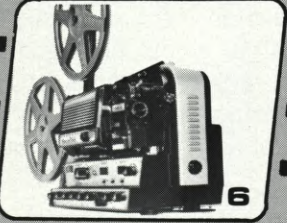
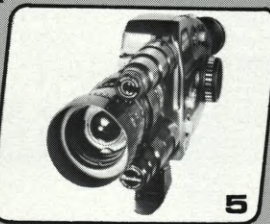
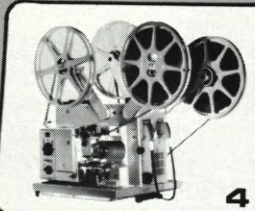
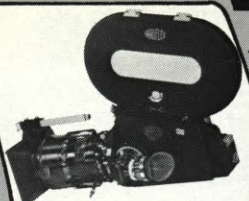
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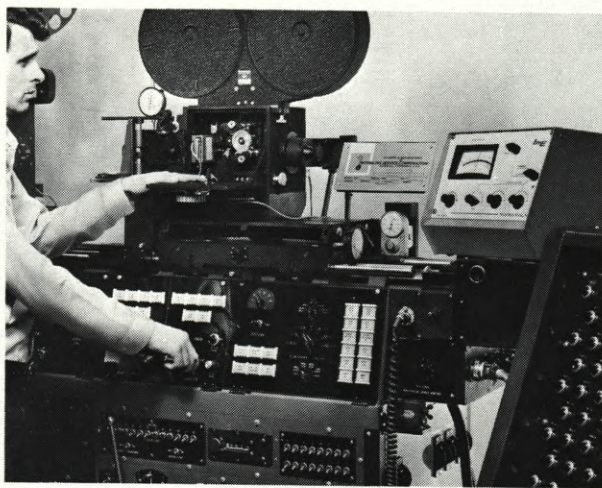
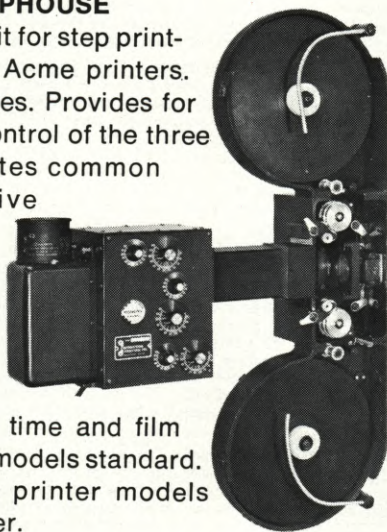


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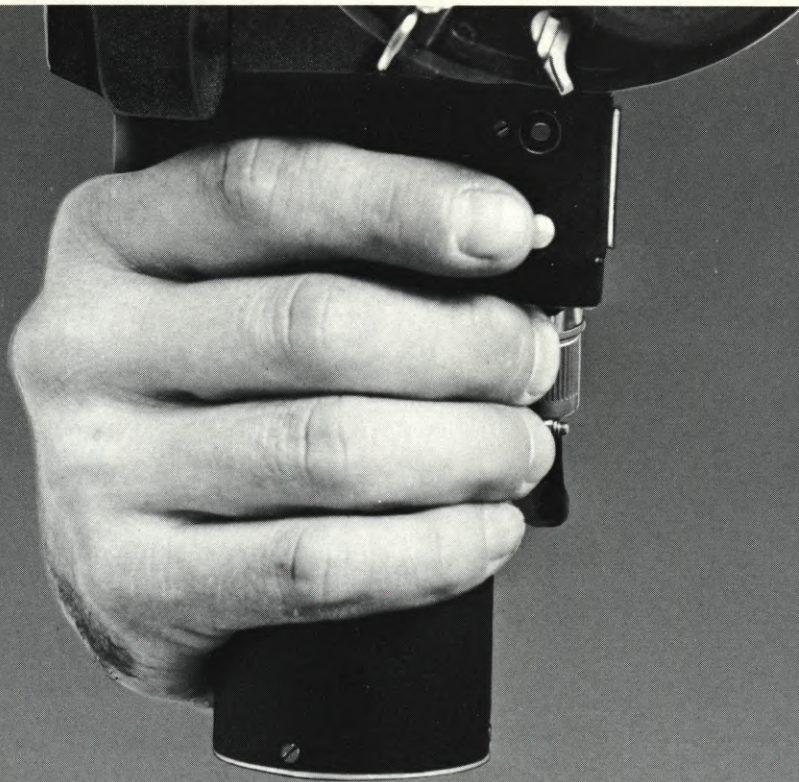
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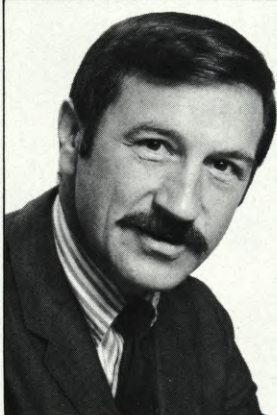


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# MAKING 16mm COLOR PRINTS FROM A 35mm ORIGINAL

By **SIDNEY P. SOLOW**

*President, Consolidated Film Industries*

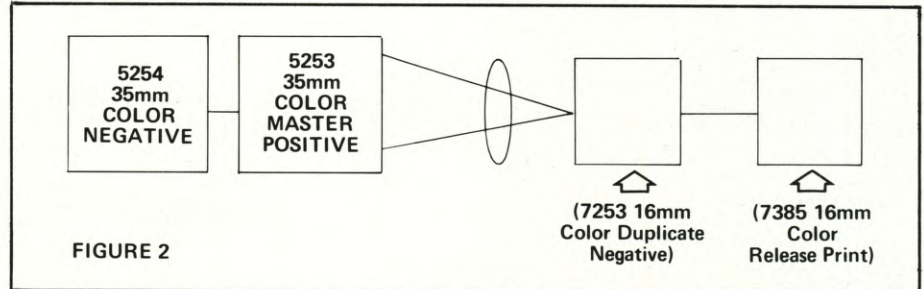
Over the years, four different methods have been developed for making 16mm color prints from a 35mm original. The first of these is to make a reduction print directly from the original 35mm negative by means of an optical printer. (FIGURE 1) The primary advantage of this method is that it yields excellent photographic quality in the print, but there are certain disadvantages to it which render it impractical in most cases. If the 35mm negative has been handled very much at all, it will inevitably have surface abrasions and pits which will show up in the print unless a liquid gate printer is used in making each print. It is possible to make 16mm reduction prints by means of a liquid gate optical printer, but this is such a slow and expensive method that it is not recommended unless only a few prints are required. It also involves the risk of possible damage to the original negative as it is being run through the printer.

There is an additional complication with direct reduction printing in that the timing of the 35mm negative for contact printing will not be correct for reduction printing if there are any 5253 dupe negatives included in the edited 35mm negative. This is because the Callier coefficient for type 5253 Color Intermediate film is different from that for type 5254 Color Negative film.\*

A 35mm negative containing both 5253 and 5254 must be re-timed if it is to be printed with an optical printer. Fortunately, the Callier coefficient for type 5249 Color Reversal Intermediate is the same as that for type 5254 Color Negative, so that if the dupe negatives in the printing material have been made on 5249 there is no need to re-time the picture for reduction printing.

The second method for making

A rundown on various blow-up methods, plus precautionary tips for obtaining the most consistently excellent results



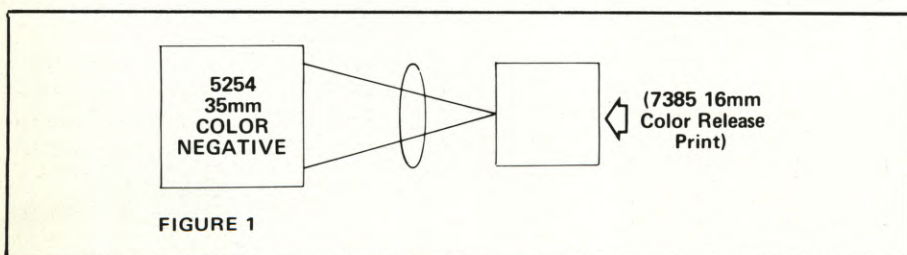
16mm prints from a 35mm color negative is to make a 35mm color master positive on type 5253 Color Intermediate film and from this master positive make a 16mm 7253 color duplicate negative by means of a reduction printer. (FIGURE 2) This color dupe can then be used to make any number of 16mm release prints using a contact printer. The advantages of this method are that the original 35mm negative is not put through an optical printer and the release prints are contact printed from a balanced or equalized negative. In most cases this represents the most economical method for making 16mm release prints of a 35mm picture since the 35mm color master positive will have already been made for protection purposes. If ten or more 16mm prints are required, the additional cost of making the reduction duplicate negative will be offset by the savings resulting from the fact that the release prints are

contact printed. This method is still a very common procedure, but it does not represent the state of the art so far as the quality obtainable is concerned.

The third method is to make a 7253 reduction negative from 35mm separation positives which have been made from the original 35mm negative. (FIGURE 3) Making a reduction negative from 35mm separation positives is more expensive than making a reduction nega-

The author, Sidney P. Solow, President of Consolidated Film Industries, has done much to further the technology of 16mm-to-35mm blow-up methods.

\*The Callier coefficient is an expression for the difference in the way a film transmits specular as opposed to diffuse light. Ideally the "specular density" and the "diffuse density" should be the same, but in reality they are not; and the degree of difference depends on the particular film stock. Since an optical printer makes use of specular light while a contact printer uses diffuse light, the difference between the diffuse density and the specular density must be compensated for when printing a negative with an optical printer. If all of the negative consists of one type of film, one correction factor will apply for all of the timing. If the negative is a combination of 5254 and 5253, however, the correction factor will vary according to the film stock used in a given scene.



tive from a 35mm color master positive, but the quality obtainable is superior because of the fact that contrast build-up can be prevented in the making of the separation positives. The color rendition is also better in the final prints because color control is better from separation positives than from a color master positive. Although the quality is better than that obtained when using a 35mm color master positive, it is still not quite equal to the best possible quality, and this method is generally only employed when a producer has separation positives on hand. The process is complicated, also, by the fact that

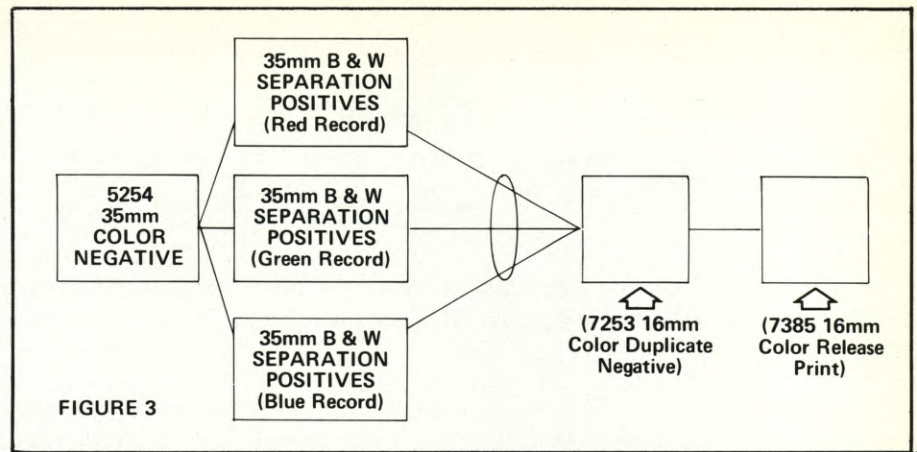


FIGURE 3

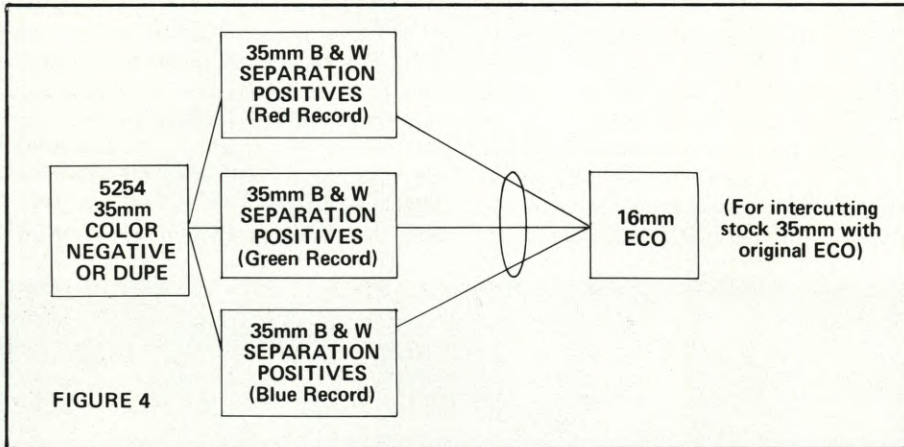


FIGURE 4

tion negative from 35mm separation positives it is possible to get into the reversal system by making a reduction print from 35mm separation positives to 16mm ECO (7252) which can then be intercut with other 16mm original material. This is the method of choice when 35mm material is to be incorporated into a picture shot in ECO. (FIGURE 4)

The fifth method and that which represents the "state of the art" in quality is to make an equalized 16mm reduction negative directly from the 35mm original negative using type 7249 Color Reversal Intermediate. (FIGURE 5) It is necessary to make this CRI by

it is not possible to time a dupe negative when it is being made from separation positives. Unless the separation positives are themselves equalized, the reduction dupe negative made from them will have to be timed for printing. Making release prints from a negative which must be timed is obviously more expensive than printing from a negative which is balanced so that it can be printed on one light.

In addition to making a 7253 reduc-

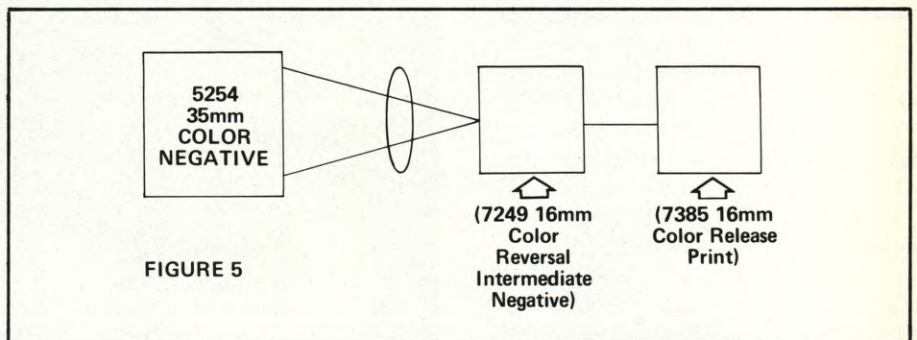


FIGURE 5

(ABOUT THE AUTHOR: Sidney P. Solow was born in Jersey City, New Jersey on September 15, 1910, and was graduated from New York University in 1930 with a Bachelor of Science Degree in Chemistry.

Mr. Solow was employed after graduation by Consolidated Film Industries, a subsidiary of Republic Pictures Corporation, as an Assistant Chemist at CFI's Fort Lee, New Jersey laboratory. He shortly became Chief Chemist and in 1936 was transferred to CFI Hollywood, where he was promoted to Plant Superintendent and later General Manager. In 1954, he was made a Vice President of Republic Pictures Corporation and was appointed to the Board of Directors in 1960. In 1964, his title was changed to that of President, Consolidated Film Industries Division of the Republic Corporation.

Mr. Solow is active in many industry and charitable organizations. He is a member of the Academy of Motion Picture Arts and Sciences, Academy of Television Arts and Sciences, a Fellow of the Society of Motion Picture and Television Engineers, and for many years has been Secretary and Allied Industries Chairman of the Motion Picture Permanent Charities Committee. Also, he has been active in the United Jewish Welfare Fund for many years, serving as Chairman of the Campaign for the Motion Picture Industry in 1966. He is an Associate Member of the American Society of Cinematographers and an Honorary Member of the American Cinema Editors. He served as President of the Association of Cinema Laboratories in 1966. Mr. Solow has also been a regular member of the faculty in the Department of Cinema at the University of Southern California since 1947, and was designated a full Professor in the spring of 1966.)

means of a liquid gate printer, and it is also necessary to use a printer which is especially adapted to maintain the proper emulsion orientation; but once this 16mm CRI negative has been made, any number of 16mm release prints can be contact-printed from it which will be as good, if not better, than 16mm reduction prints made directly from the 35mm negative. The color reversal intermediate stock is an extremely fine grain, sharp film with excellent color rendition. Since it is designed to prevent contrast build-up, a print from a reduction CRI negative may even have less contrast than a direct reduction print from the 35mm original negative. The

Continued on Page 86

# LOOKING BACK AT



The First Los Angeles International Film Exposition scores a smashing success and earns itself an encore for next year

Now that the dust has settled and the final figures of the accountants are in, it can honestly be stated that the recent First Los Angeles International Film Exposition (more briefly known as FILMEX) was a rousing success.

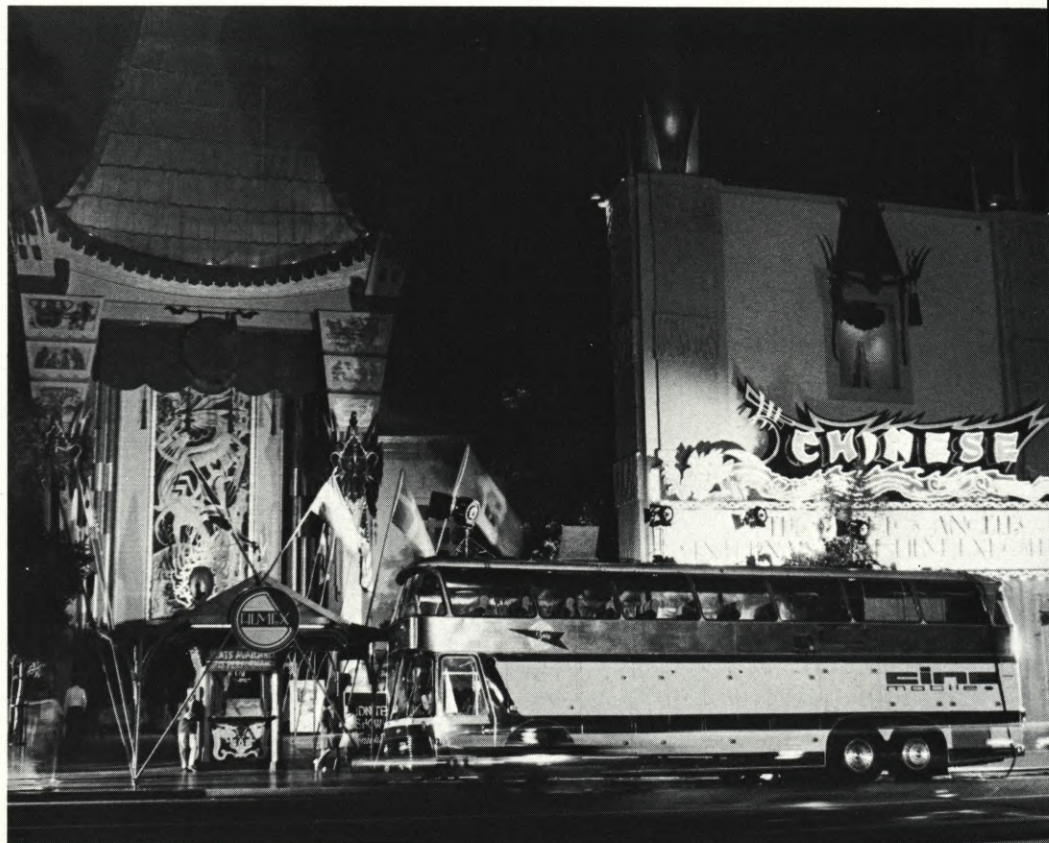
In spite of the fact that, for unavoidable reasons, publicity and promotion for the Exposition (rather than *Festival*) was very late in being launched, members of the substantial audiences attending the screenings expressed their enthusiastic approval for the high quality of the programming, and this first major film festival (call it what you will) to be held in the center of American film production emerged with an impressive number of achievements.

The non-competitive, 11-day event, staged at Grauman's Chinese Theatre and the Los Angeles County Museum of Art, November 4 through 14, was attended by 30,198 people. Thirteen nations were represented by a total of 53 feature films and 54 short subjects. Nine American premieres included ANNA, directed by Jorn Donner of Finland, THE ARP STATUE from Great Britain, directed by Alan Sekers, BLUSHING CHARLIE from Sweden, directed by Vilgot Sjoman of "I Am Curious Yellow" fame, BRAZIL: A REPORT ON TORTURE from the USA, directed by Haskell Wexler and Saul Landau, THE BYELORUSSIAN STATION, a film from the USSR directed by Andrei Smirnov, THE COW, a film from Iran directed by Daryush Mehrjui, MEMORIES OF HELEN, directed by David Neves from Brazil, RIP-OFF, a Canadian film directed by UCLA graduate Donald Shebib, and Andy Warhol's latest feature film, SEX.

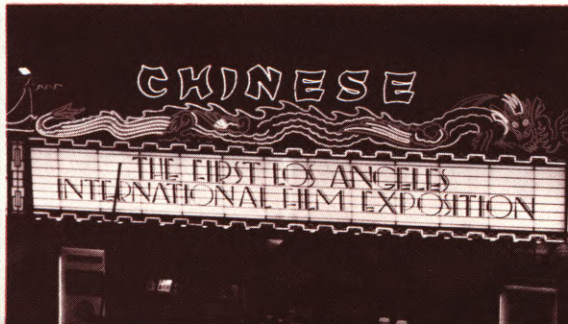
Nine of the 43 programs presented were sold out: THE ART OF ANIMATION, FILM NOIR, ALFRED HITCHCOCK MARATHON, THE LAST PICTURE SHOW, MEMORIES OF HELEN, Charlie Chaplin's MODERN TIMES, Cecil B. De Mille's THE TEN COMMANDMENTS (1923), SEX, and FILMS FROM THE UNDERGROUND.

Among the unique aspects at FILMEX was the presentation of two silent films with live orchestral accompaniment. Cecil B. DeMille's 1923 version of

THE TEN COMMANDMENTS was screened with a 25-piece orchestra playing the original score under the direction of Louis Fratturo. Joseph von Sternberg's THE DOCKS OF NEW YORK was accompanied by an improvisational jazz quintet under the supervision of John Green and Al Woodbury. Another innovation which proved successful was the scheduling of two short film programs (THE ART OF ANIMATION and FILMS FROM THE UNDERGROUND) during evening hours, a time



(ABOVE RIGHT) Double-deck Mark V Cinemobile moves into position in front of Grauman's Chinese Theatre in Hollywood in preparation for evening FILMEX performance. Cinemobile held "open house" each night for first week, complete with lights, camera and plenty of action. (BELOW LEFT) Famed science-fiction author and insatiable movie buff, Ray Bradbury, chats at Premiere Night performance of "THE LAST PICTURE SHOW" with film's director, Peter Bogdanovich. (CENTER) The Chinese Theatre, an historic landmark of Hollywood, was the perfect setting for FILMEX screenings. (RIGHT) Andy Warhol with Candy Darling, "superstar" of his film, "SEX", screened at the Exposition.







(LEFT) Leatrice Joy, spry and sprightly star of DeMille's original "THE TEN COMMANDMENTS" (1923) says a few words before screening of that film with 25-piece orchestral accompaniment. She received a standing, cheering ovation from the young audience. (CENTER) Heated opinions were aired during panel discussion on "Artistic Freedom—Restraints and Responsibilities". (RIGHT) Ryan O'Neal, with wry friend, attended the Premiere Night festivities.

spot usually reserved for feature programs. A 10-hour Marathon screening of 6 Alfred Hitchcock films provided not only another first, but also the most popular program of the Exposition.

The Tribute to the American Cinema, in a series of morning screenings (which were free) and selected special evenings, offered rarely-seen works by major filmmakers. An added dimension to this tribute included the first investigation of the genre of films made in Hollywood in the forties to mid-fifties known as FILM NOIR. Seven of these films dealing with the darker side of urban life were screened in two days, with their directors concluding the screenings in a panel discussion.

Space does not permit commentary on more than a very few of the 43 programs presented during the course of the Exposition, but the following are among those which this reviewer feels were especially well-selected for screening:

**THE LAST PICTURE SHOW**—The choice of this fine film by Peter Bogdanovich as the Premiere Presentation of FILMEX was inspired and it launched the Festival in high style.

**THE DECAMERON**—This filmization of eleven of Boccaccio's bawdy tales by Pier Paolo Pasolini proved to be a sheer delight. Played with endearing innocence by a cast of effervescent Neapolitans, both amateur and professional, it drew a tremendous response from the audience.

**MURMUR OF THE HEART (LE SOUFFLE AU COEUR)**—This film proves how a director with the genius of Louis Malle can take a potentially explosive theme and handle it with great skill, taste and sensitivity.

**RIP-OFF**—This skillfully made feature by ex-UCLA Cinema student Donald Shebib presents a hilariously funny, tenderly wistful view of a little-recognized facet of the current youth scene, done with a high degree of professional finish.

In this writer's opinion, the one real bummer of the entire FILMEX program was Werner Herzog's incredibly boring and impossibly amateurish FATA MOR-

GANA, a pompous, pretentious, pseudo-arty melange of bad photography and obscure symbolism rivaling for sheer tedium the worst ever perpetrated by Godard or Antonioni. While a handful of "Emperor's New Clothes" phonies cheered it, most of the audience walked out. Whoever put this dog on the program ought to hide, lest the disgruntled paying customers seize him and force him to sit through it eight or ten times—a hideous revenge.

An item which went completely unnoticed by the audience, but is of special significance to film-makers, had to do with the screening of the Swedish feature, **BLUSHING CHARLIE**.

Writing about this picture in a critique tabloid distributed to the audience during the course of FILMEX, an anonymous reviewer wrote: "*Photographer Rune Ericson has used a 16mm camera in rather a special way so that the blown-up color images look a lot better than the traditional method.*"

The writer of that comment obviously didn't know *why* it "looked a lot better" and the film itself didn't offer much clue to the general public. A sub-title in English simply said: "16mm—Filmed in Runescape".

Readers of this journal (See *American Cinematographer*, June 1970) may

recall that "Runescape" is the name used in Sweden for the Super-16 format developed by famed Swedish cinematographer Rune Ericson. The fact that this Super-16 production was able to fill the large screen at Grauman's Chinese with a sharp, clear image says a lot for the system as a viable feature production format.

The Exposition was budgeted at \$150,000. Expenses amounted to \$106,000, far under budget, due to the extraordinary support of Hollywood organizations including the major studios which provided over \$25,000 worth of services and supplies. Income from private sources and ticket sales amounted to \$85,000, leaving an operating deficit of \$21,000. Methods for reducing the deficit are now being sought. The first in this series was a benefit premiere showing of Stanley Kubrick's **A CLOCKWORK ORANGE** on December 18, through the courtesy of Warner Bros.

The FILMEX Board of Trustees, which met on November 23 to assess the results of the first Exposition, unanimously authorized the Director to proceed with plans for the Second Annual Los Angeles International Film Exposition. The date has been set for November. **Continued on Page 112**

Photographed off the screen during showing of "THE TEN COMMANDMENTS" was famous parting of the Red Sea sequence. Leatrice Joy had told audience effect had been achieved with aid of a bowl of Jello, and audience applauded when the sequence appeared.



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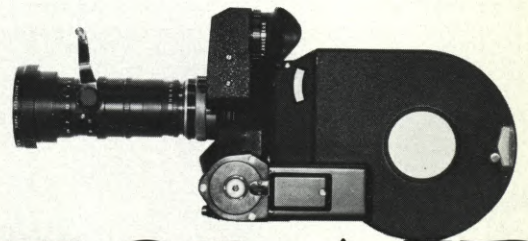
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SCENE SHOWN FROM LESLIE WINIK'S AWARD NOMINATED SPORTS FEATURETTE "THE WINNING STRAIN"

# SUPER - 16

## THE KEY TO PRODUCING BIG-BUDGET FILMS AT LOW COST

By SIMON NUCHTERN

Producer/Director

How do you produce a quarter-million-dollar feature film for half the cost? Increasingly, New York producers are answering:

"Shoot it in Super-16."

A number of Super-16 features are going this route in New York.

And for good reason:

- *Money savings.* Super-16 costs (material, equipment, crews) can run up to 50 percent less than 35mm costs.
- *Quality.* Super-16, when blown up to 35mm, retains a professional wide-screen quality.

In October, 1971, August Films first screened BROAD COALITION, a feature comedy filmed in Super-16 and enlarged to 35mm. Our experience with BROAD COALITION typifies Super-16 production. Use our Super-16 experience as a factor next time low budget and a good script force you to a go/no-go decision.

Careful planning and willingness to experiment with new film technologies are keys to success, we believe.

### THE PROS & CONS

BROAD COALITION was budgeted at \$300,000. It was produced for \$150,000. We were not trying to prove a point. We just were not able to raise any more money. In November, 1970, I was faced with the facts. We had planned to produce our film in 35mm color, with a wide-screen format. It is rare to see an American film in black & white (THE LAST PICTURE SHOW being a notable exception), and it is rarer still to see a film in a 1.33:1 aspect ratio. Blowing up conventional 16mm to 35mm has severe limitations. First, the optimum aspect ratio is 1.33:1; second, the blow-up ratio is 4:1. We had just produced COWARDS in 16mm and blown it up to 35mm. Although the optical negative was technically very

good, I felt that the resolution was below that of theatrical standards; the grain was too noticeable, and the contrast too high.

As producer and director of BROAD COALITION I had some tough decisions to make. Bob Megginson (my Director of Photography and editor) and I had read the issue of *American Cinematographer* devoted to Super-16. It was being used successfully in Europe. Why not here? The specifications seemed perfect. In effect, the production would be done as if it were in 16mm. I had already calculated that I could bring it in for half the budget if I stuck to that format. I considered the advantages:

- *Equipment.* The Super-16 camera is a modified 16mm camera. We chose the Eclair NPR. This meant that we could approach the production as if it were a documentary. By using a small portable sound camera, the cameraman would have increased mobility; we would need a smaller crew; set-up time would be greatly decreased. In effect, Bob wound up hand-holding, shooting from a wheelchair, shooting on a tripod, and from a dolly, when necessary. The only additional piece of equipment we used was a soft "barney" to reduce the noise of the camera when we came close to the mike.

- *Reduced film costs.* The script for BROAD COALITION called for a great deal of improvisation. Improvisation allows the whole team to truly collaborate on a film project—the actors and crew give more of themselves, the film contains a freshness and reality which is difficult to produce by sticking mainly to a script. But improvisation also means a lot more shooting and the need for longer shots. The director does not want to cut when a scene seems to "catch on fire". We had calculated on using 100,000 feet of 35mm color negative. This is equal to only 40,000 feet of 16mm film stock. In reality, we wound up using 50,000 feet of single-perf 16mm. This would have resulted in 125,000 feet of 35mm. What a saving!

Lining up a location interior shot for New York-based Super-16 feature, "BROAD COALITION". (Left to right) Assistant Cameraman Jeff Bolger, Cameraman Bob Megginson, Actress Irene Feigenheimer and Producer/Director Simon Nuchtern. Film, budgeted at \$300,000 in 35mm, was brought in for half that amount when shot in Super-16.



Moreover, 400 feet of 16mm runs 10 minutes continuously, the equivalent length of 35mm only four. This means a lot when a scene is going well. Loading of the Eclair is practically instantaneous compared to the threading of a 35mm sound camera. In tight situations, we ran almost continuously. The greatest monetary savings, however, is at the lab. The workprint, of course, is also made in Super-16. Once the original is matched, it is blown up directly to a 35mm printing negative. Had the production been done in 35mm originally, we would have had to make a 35mm interpositive for "safety". In Super-16, the original becomes the "safety" and the printing negative is only one generation away.

All this, of course, adds up to money saved in material, equipment, crews, actor-time. It sounded good.

Overseas reports about Super-16 production, I knew, had been quite favorable. Sweden, Denmark and Great Britain producers have used Super-16 for several years and have developed some expertise in it.

Still I wasn't convinced. I asked:

- How much experience had American firms in Super-16 production?
- Who were the U.S. experts?
- Would I need special equipment for photography, editing, opticals?

I reviewed problems with Al Greco, President of Radiant Laboratories, a New York film processing firm.

"You'll have to modify cameras and editing equipment," Greco told me. "Another big problem: loss of picture quality in the blow-up process."

Greco suggested I talk to Dick Swanek at The Optical House, New York special effects film laboratory. "He's one of the few genuine Super-16 experts in the U.S."

I called Swanek.

"Can we do it?" I asked. Swanek's answer: a qualified yes.

### THE STRATEGY SESSION

"We can produce a 35mm blow-up of quality equal to, or better than, film shot in 35mm," Swanek said. "But everyone in the film-making system—from cameraman to editor—must use proper equipment and material and do his job with precision. Early planning always pays off in film production. This is particularly true in Super-16 production where you have so many unknowns."

Swanek advised calling a meeting of camera technicians, film processors, director, and film editor to discuss possible problems.

All donated their time to discuss (a) Equipment (b) Materials (c) Photographic techniques.

Engineers representing General Camera Company, Eclair and KEM Electronics—photographic equipment firms—recommended three modifications for our 16mm cameras:

- Enlarging aperture to include sound track area in frame
- Changing markings on groundglass to indicate wider format in viewfinder
- Converting lens turret to re-center lens in relation to modified aperture.

Film editing technicians also suggested equipment changes.

"Sound track area is used for increased image size in Super-16," the engineers pointed out. "Conventional editing machines could scratch sound track area. Moreover, part of negative image won't appear on the machine."

As a result of these warnings, we had a specially made editing head shipped from Germany.

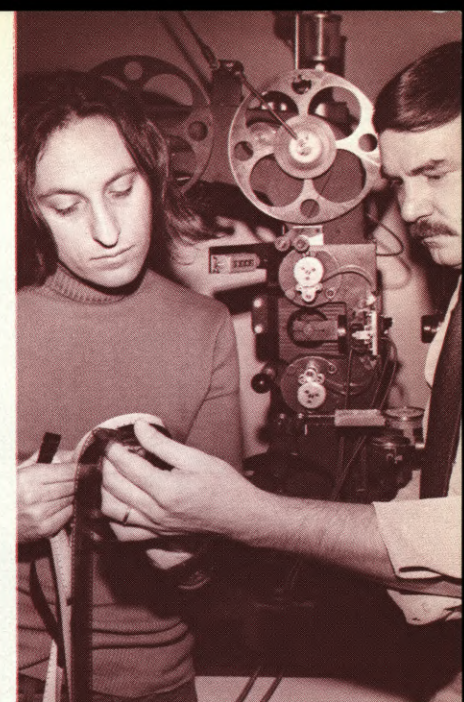
Dick Swanek recommended special film stock to assure quality enlargement from Super-16.

"Use the wrong film and we may not be able to accurately match A and B negatives in blowup," Swanek noted.

That alerted our film crew director to other problems.

"We're going to need more lighting if we use those film stocks," our director told me. "A couple more quartzes. Some more backlighting."

After three hours of discussion, I appreciated the difficulties. But I felt



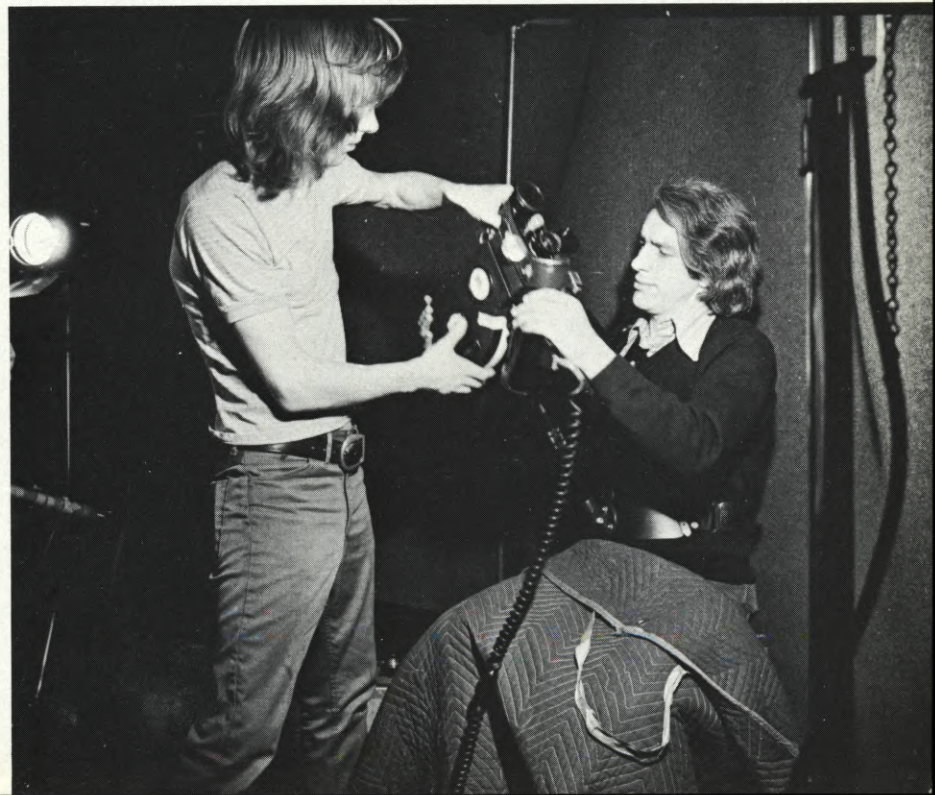
Nuchtern and Dick Swanek, President of The Optical House, examine 35mm blow-up test from Super-16 original, pronounced it to be "of professional wide-screen quality".

confident we could produce a quality film. I decided to move forward.

### THE FINISHED PRODUCT.

There was no doubt that Super-16 would afford us considerable advantages over regular 16mm. The principal one would be the wide-screen format. Our camera was modified to give a 1:70:1 aspect ratio. This meant that the blow-up to 35mm would be in a ratio of 2.66:1 instead of 4:1. This lower ratio makes a noticeable difference in sharp-

Assistant Cameraman Bolger and Director of Photography Megginson prepare for shooting with Eclair NPR camera, modified to the Super-16 format by General Camera, in conjunction with Eclair Camera Corp. All surfaces that would come in contact with sound track area of single-perf stock were machined down to avoid possibility of scratches and emulsion build-up.





Nuchtern checks a camera set-up through viewfinder with markings on groundglass changed to indicate wider frame area of Super-16 format.

ness, resolution, reduced grain and contrast. The blow-up was handled by Dick Swanek of The Optical House in New York.

Here I want to mention a new development that vastly improves the qualities and possibilities of Super-16. This is the special effect liquid gate (full immersion), manufactured by Oxberry and which was adapted by The Optical House to handle the Super-16 format. We were familiar with standard liquid gate blow-up. However, this method meant that film had to run continuously, and was often prone to turbulence, those little air bubbles at splices that can cause so much havoc on the negative! Film in the special effect liquid gate, however, is passed through a completely controlled liquid environment maintained by a vacuum-liquid circulating system. With this gate, the film can run forward, in reverse or freeze-frame. This enabled us to plan for wipes, optical zooms, follow-focus zooms, mattings, multiple screens, solarization, and any other effect otherwise available only by conventional dry-gate printing. In addition, we decided to zero-cut the original in order to avoid A and B matching, minimize the number of passes on the optical bench, and make sure that there would be no difficulties at the splices. The resulting blow-up of *BROAD COALITION* is the best I have ever seen, and our 35mm prints are

technically on a par with any color production done originally in 35mm.

Being the first in anything always presents special problems. When we decided to go with Super-16, we found very few people in New York who'd had any practical experience with this format. I remember walking from one supplier to another with my earmarked copy of the *American Cinematographer* Super-16 issue under my arm. This minimized the amount of explanations I had to make. They could see it for themselves!

We heard that General Camera had a Super-16 conversion. Dick DiBona, president of General Camera, told me that their Super-16 camera was on long-term lease to Universal Studios in Hollywood. So we bought a well-maintained used Eclair NPR with four magazines and two motors, and General Camera, in conjunction with Eclair Camera Corp., made the conversion to the enlarged format. In addition, we replaced the shutter for the new Eclair glass shutter in order to gain increased clarity through the viewfinder. We also had all the surfaces that come in contact with the track area of the 16mm single-perf stock machined down to avoid the possibilities of scratches and emulsion build-up. On the entire 50,000 feet of film shot, there was not one emulsion scratch. The problem of hair in the gate, a fairly typical problem of the Eclair, was minimized by frequent blowing-out of the gate. This is an easy maneuver to perform on the NPR, since the magazine can be removed and replaced with ease and speed.

We chose Radiant Color Labs in New York to process the film and work with us through the answer print. Al Greco, president of Radiant Labs, showed a great deal of interest in our project. His engineers modified a Bell & Howell Model-C printer to print full-frame without touching either the original or the workprint on the track area. This would prevent the chance of a processing scratch during printing. He also adapted one of their 16mm analyzer projectors so that we could screen dailies at full frame both at sound speed and at 120 frames per second. Then we ran a number of film tests to choose our camera original. Today, I would probably choose Eastman color negative 7254, and then blow up to a CRI 35mm printing negative. But in 1970, CRI techniques were still too new and untried, so we decided to go with a reversal film. We tested the new ECO 7252 versus the old 7255, with which we were very familiar, and decided to stick with 7255 since Eastman had not

ironed all the grain and contrast bugs out of ECO 7252. This meant that we were limited to a film speed of ASA 25. Most of the scenes were interiors, and all on actual locations. This meant more lighting with limited power available. More lighting meant more set-up time, but we had a good crew. I asked Bob how he felt about it—he was willing to pay the price to get better quality. It meant shooting wide open, less depth-of-field, more follow-focus. This on a film that was going to be greatly improvised, where actors could move around unexpectedly. However, Bob has had a lot of experience in shooting news films and in-plant industrials, situations where the unplanned often happens. And he had shot *COWARDS* with 7255. We knew it could be done.

After seeing the blow-up test from 7255, projected on a large screen in a theatre in New York, we knew we had it made. I finished the casting, we secured our locations, rehearsed, and began production. Seventy-five long shooting days, 80 actors, and 27 locations later, the film was in the can. And only three days of re-shooting! Our last problem was editing. There are no standard editing machines that accommodate Super-16. Besides, 50,000 feet of mainly improvised material is tough to handle through a standard Moviola. The answer would be a multiple-headed editing system, one that could show at least two takes simultaneously. We contacted Bob Rowen of KEM Electronics and he told me that if I purchased a KEM console he would obtain a Super-16 picture head. The optics of the KEM picture heads are so designed that they can be easily factory-adapted to show full-frame. Within a few weeks, we were editing on a KEM and seeing the whole wide-screen frame. The switch to Super-16 had saved me enough money so that I could afford the luxury of a KEM!

Large budget or small, there is no substitute for content. In the struggle of form over content, or vice versa, content should always prevail. However, it is no longer necessary for the filmmaker with limited financial means to give up form for content in a theatrical effort. Super-16 is a viable alternative, and I believe its use will increase with time as the industry becomes more aware of its potential. It would be a great help if equipment manufacturers, labs, and raw stock manufacturers would accept the possibility of this new format. But the industry is slow to react to change. It is the role, the duty, of the small independent film-maker to prove that there are always new methods to solve problems. ■

# 1971 KODAK TEENAGE MOVIE AWARDS

A whole new generation of budding film-makers displays a high degree of professionalism in award-winning films

A satirical take-off on a children's television show, praised by contest judges as "a professional film in many ways," has swept the ninth annual Kodak Teenage Movie Awards to win the scholarship grand prize in a record year of nearly 1100 entries.

Eighteen-year-olds Torv Carlsen and Christy Vaile, Stockton, California, clinched the top award with a co-produced 14-minute satire, "CARAWAY STREET". Carlsen is a freshman at Delta College, Miss Vaile at the University of California, Berkeley.

The Super-8 color film, with magnetic sound, makes some strong social comments within a "SESAME STREET"-type format. In live action, animation and clever puppet sequences, razor-edged humor helps uncover insidious pride and prejudice. Songs are spread throughout the film and include a tune about taking a ride . . . in a sports car, a limousine and a yacht.

"'CARAWAY STREET' is a humorous but realistic look at middleclass suburban America," says Carlsen, who previously won senior second prize in the 1970 awards with a subjective-camera comedy, "GUESS WHO'S COMING TO LUNCH".

Judges found the Delta College freshman's most recent film effort to be a "devastating satirical take-off . . . a technical tour de force." In particular, they noted "exceptional concept, camera, direction and sound quality" in the grand prize winning film.

As the 1971 scholarship prize winners, Carlsen and Miss Vaile will share an all-expense paid, six-week summer course at the University of Southern California Department of Cinema for college-level training in all aspects of filmmaking. Alternatively, they may share a \$1000 scholarship to any college affiliated with the University Film Association (UFA).

A 3-minute animated abstract film featuring a clever mix of colors and sound won the junior (ages 12-15) category first prize and \$150 cash for Peter H. Durbrow, 15, New City, New York. His winner "OH NO!" features dancing shapes—watercolor designs applied directly to white leader film and

artistic scratch film frames—set to a jazzy musical score.

"I was always interested in animation and I wanted to do a different type of film," explains the high school sophomore who hopes to become a cartoonist. "I decided to experiment with colors."

Rating his experiment most successful, judges praised Durbrow's Super-8 color movie for "excellent selection of music . . . good control of Super 8 scratches . . . and fine sense of pacing."

"Music is life presented in a different way" concludes the young hero of "DISCOVERY IN DARKNESS", the senior (ages 16-19) category first prize winner. Seventeen-year-old Kerry Levitt, Akron, Ohio, will receive \$150 cash for his 16-minute drama about a teenage boy, recently released from a correctional institution, who finds he can relate to the world with the help of his guitar.

Judges lauded the 8mm color production, which was eight months in the making, as "a film that can change people . . . a sensitive film . . . very successful."

A high school senior, Levitt, who plans to study cinema in college, is a cash award winner for the third time in the nationwide teen film competition. He previously won a junior category second prize in 1968 for "THE STEPS OF DONUT PRODUCTION" and a Special Award for Documentary in 1970 for "THE SILENT PROTEST".

Linda Klosky, 19, Hammond, Indiana, earned a \$150 first prize in the One Reeler Category—for which all editing must be done in the camera as the movie is filmed. For her 3-minute, 8mm color winner, "THE ARK, DIRECTED BY NOAH, SPECIAL EFFECTS BY GOD", she animated paper cutouts to recreate Noah's voyage on the Ark.

"I had done another film on the creation," remarks the sophomore at the Minneapolis College of Art and Design. "'NOAH'S ARK' was to go along with the 'creation' and a third biblical story to make a trilogy of biblical animations treated in a light, happy way . . . If my film can make people smile and feel happy, then I have accomplished my goal."

"What imagination!" exclaimed judges who further praised Miss Klosky's "fresh ideas . . . great originality of technique . . . high degree of artistic ability . . . humor . . . and effective use of color."

In the Sixteen Category—for all 16mm filmmakers through age 19—"SQUIGGLE", an imaginative film effort by 19-year-old Dan Bailey, Temple Terrace, Florida, took first place (\$150) honors. An animated "squiggle," scratched on the film, confronts and eventually overcomes a real person who repeatedly interrupts its games in this unusual black-and-white motion picture.

Commenting on his inspiration for the 6-minute film, the University of South Florida sophomore says ". . . with film, I could present the viewer with an experience that is impossible in the viewer's mind—the mixing of a real person and something that isn't real."

"The most original film I've seen in a long time," said one of the film experts participating in the final judging. "A truly creative film . . . an imaginative concept, executed with genuine skill . . . outstanding sound track and voice mix," noted the others.

An earlier Bailey production, "MILK COW", won a Special Award for Social Commentary in the 1970 awards.

Other top winners in the pre-teen category are:

—Jim Massara, Jr., 11, Springfield, Illinois, whose 3-minute animated cartoon, "THE BIG DRIP", was awarded second prize (\$100). The 8mm color movie, which recounts the slapstick adventures of a plumber who tries to plug a leak with bubble gum, was inspired, according to Massara, by a mini-comic he saw in a comic book last year. "This animated cartoon displays a real sense of humor and is visually well thought out," said the judges.

—Seven-year-old Kevin Lynch, San Diego, California, tied for third prize (\$50) with a 2-minute combination clay and puppet animation film, "SUPER-GLOB". The third grader—who says this first film was made "just for fun and entertainment"—spent between 12 and 15 hours on the Super-8 color film

Continued on Page 87

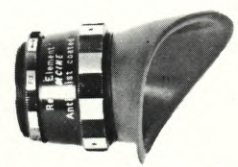
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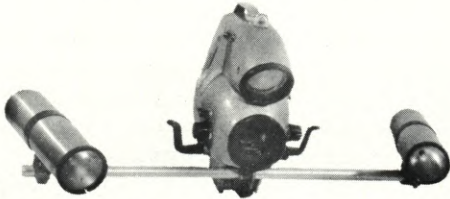


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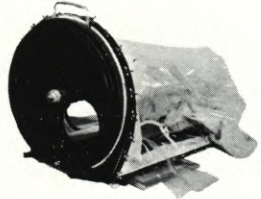
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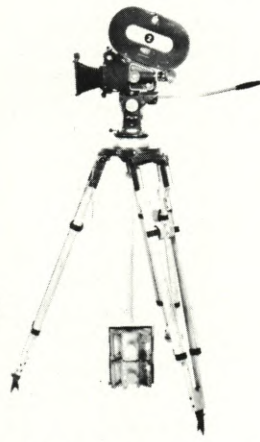
**RAIN DEFLECTOR**

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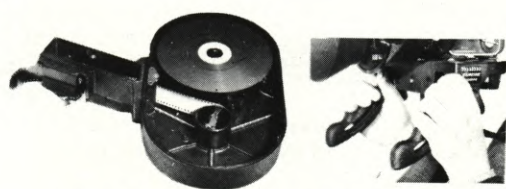
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**GIMBLE TOP TRIPOD**

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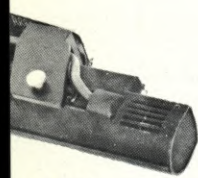
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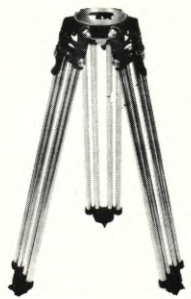


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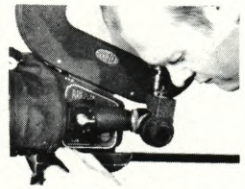
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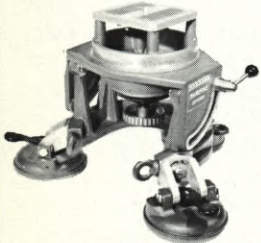
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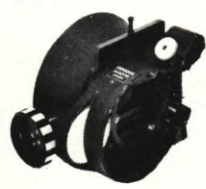
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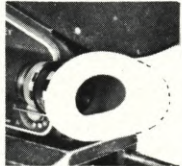
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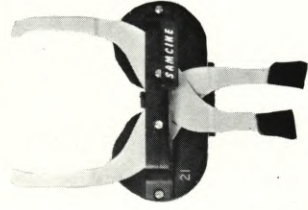
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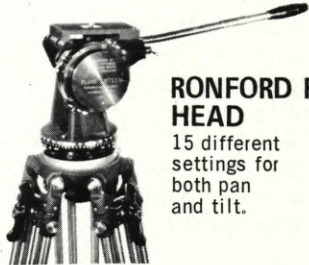
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circle**

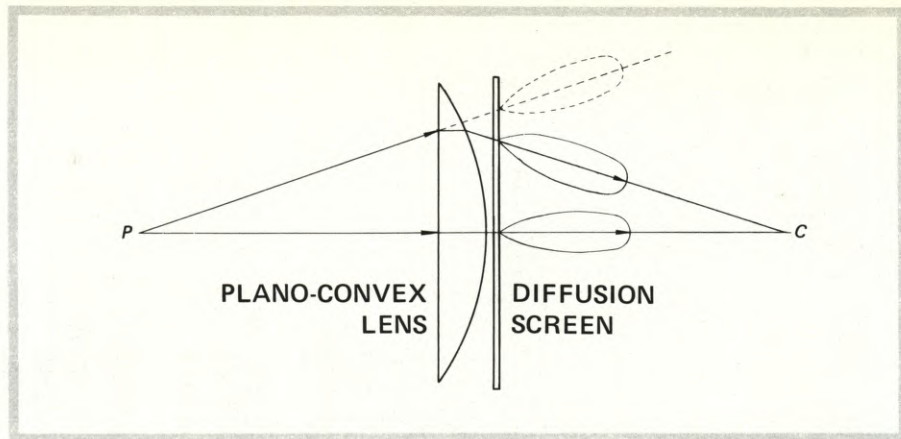


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Japan. This utilized the Lumiscope screen, manufactured by Ryu Den Sha Company, Ltd. of Tokyo. This unusual, high-gain system for rear-projection had been widely accepted in Japanese television production. It provided a means for getting a composite of projected image, and performer in front of the screen on camera simply, and without having to make many compromises in set lighting. A small Lumiscope screen was secured and tests were made at Wexler Film Productions. These tests crudely simulated the types of setups desired. In one of these early tests, a 750-watt "Baby" spot was focused on the Lumiscope screen while a slide was being projected with a 500-watt Carousel projector. There was no noticeable degradation of the projected image as filmed under these conditions.

For the final tests of the system, the 500-watt Carousel projector, equipped with a 4-inch F/2.8 lens, was used. In addition to normally exposed slides, some under- and over-exposed material was included. The projector was positioned eight feet behind the Lumiscope screen, and the camera located eight feet in front. These distances were derived from the formula shown in FIGURE 3 of the accompanying technical description. The projector distance was selected to properly fill the screen with the 4-inch lens. This distance and the focal-length of the Lumiscope then determined the correct camera position for the maximum gain from the system. The tests were shot at different "f" stops and then analyzed for the combi-



**FIGURE 2—Principle of the Lumiscope System**

The ray bundle incident near the outer reaches of the screen is first focused by the plano-convex lens. The effect of the diffusion screen is only to "spread" the ray bundle so that the viewing angles around C are not too critical, and the image may be seen from a number of positions around this location. From the correct location, note that the observer, or camera, is looking at the central ray in the bundle whether from the edge or the center of the screen. The result is high gain and no "hot spot".

nation which best rendered both the speaker and the projected slide. The subject lighting was much like conventional set lighting. Two small flags were placed in front of the key and fill lights to minimize the amount of light falling on the Lumiscope.

The results of these tests indicated that Lumiscope provided the means for easily achieving a photographed composite of slide and lecturer on 16mm film. Subsequent experience has demonstrated that the Lumiscope is even more versatile than indicated in the first cautious efforts. Some interesting points and observations:

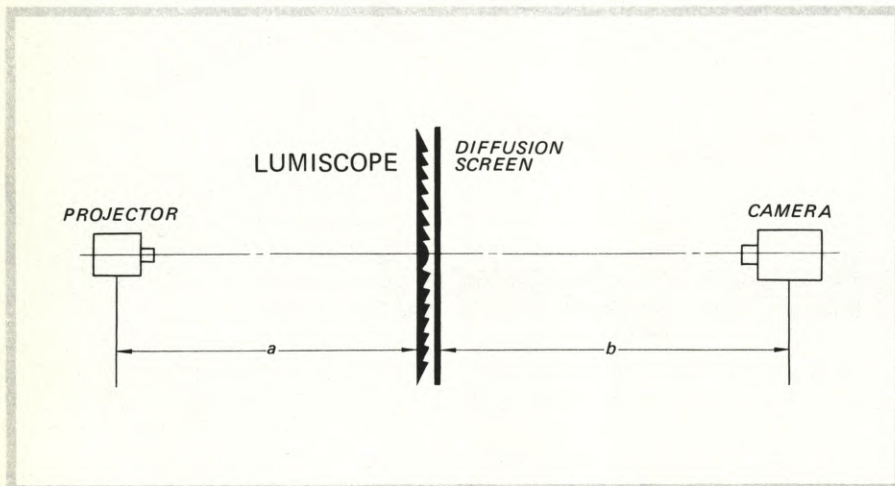
- a.) The size of the projected image does not affect the apparent brightness,
- b.) Although the theory suggests that an optimum distance from cam-

era to screen be used (for a given projection distance), we found that this distance can be varied several feet in our setup,

- c.) Theory also indicates that the camera should be at 90° to the screen, but it can be panned about 15° off the optical axis without affecting the quality of the photographed image. This is also true for limited crabbing moves parallel to the screen,
- d.) Because of the nature of the Lumiscope, it is possible to zoom in and photograph detailed parts of a given slide,
- e.) There has never been a "hot spot" in the center of the screen,
- f.) In the present setup, there are approximately 140 foot-candles of light incident from the set lighting on the camera side of the Lumiscope screen.

Since the initial activity, a second Carousel projector with a dissolve unit has been added to increase the flexibility of the setup. The only change made relative to the Lumiscope is that the diffusion screen was changed in favor of a higher-gain material.

The final form of the production facility is shown in FIGURE 4. The overall length of the room is 16 feet, 9 inches and the width is 10 feet, 9 inches. The ceiling height is 8 feet, 10 inches and a simple lighting grid has been installed at an elevation of 8 feet, 4 inches. The luminaires for the set lighting are all Colortran tungsten-halogen types. All filming is done with an Arriflex BL using a 12mm/120mm Angenieux Zoom at F/2.8. The stock used is Eastman 7252 ECO which is practical at ASA 25, because of the effectiveness of the Lumiscope.



**FIGURE 3—Schematic—Lumiscope System**

$$\frac{1}{f} = \frac{1}{a} + \frac{1}{b}$$

- f: Focal length of LUMISCOPE
- a: Projection distance from projector to screen
- b: Picture-taking distance from screen to camera

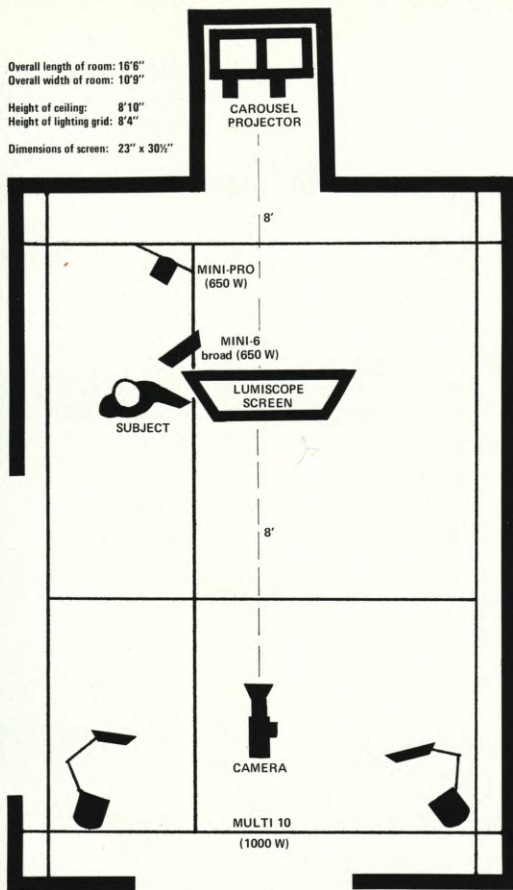


FIGURE 4

Sound is recorded double-system using a Nagra recorder. The microphone is an electret condenser-type lavalier (Sony ECM 50) worn by the speaker.

The production goals established by Dr. House are being met. It has become a routine accomplishment for less than two weeks to elapse between the first beep tone of the Nagra and the completion of the first answer print.

The other half of the original problem has also been solved. Not only are low-cost, good-quality films being produced, but a regular audience has been secured. This has been accomplished by having medical groups and hospital residency-training programs subscribe to an annual series of ten "Otologic Seminars". To date, the first series of ten one-hour films has been completed and is being circulated to subscribers all over the United States and in several foreign countries. In this way, approximately 1,000 doctors see a current film in their specialty every month. Production is underway on the second group of ten films.

Experience has shown that the concept of the filmed lecturer works, both in the educational and economic senses. The Lumiscope was a decisive element in the total achievement. ■

## LUMISCOPE, AS COMPARED WITH OTHER SYSTEMS OF COMPOSITE CINEMATOGRAPHY

Optical composite systems are well known in the field of motion picture production. Travelling matte processes and front projection are both established techniques. The travelling matte systems require either special cameras or other special equipment and lighting, or else relatively expensive and time-consuming optical processing. Front projection requires no special processing, but does need special equipment and screen. In addition, the projection plate must be of exceptional quality to overcome the problem of graininess when it is rephotographed as part of the composite image.

Rear projection is the oldest of the composite processes still widely in use. It has the advantage of being relatively straightforward and requiring no special optical treatment. The conventional rear projection systems consist of a translucent material onto which an image is projected.

The two greatest problems in conventional rear projection are: (1) the occurrence of a hot spot in the center of the screen, and (2) the low brightness of the projected image, even using very powerful arc projectors. The two problems are closely interrelated. In order to minimize the effect of the "hot spot", the "gain" of the screen is kept relatively low. This results in more uniform brightness of the projected image, and the ability to see the image through a wider range of viewing angles. The concomitant of this is the low overall brightness of the image. The system also requires that great care be taken in lighting the performers and foreground in order to avoid the stray light falling on the screen. It should also be noted that the larger the picture being rear projected, the lower the brightness for a given projector. See FIGURE 1 for a graphical explanation of the "hot spot" phenomenon.

The Lumiscope system permits composite photography in the rear projection mode with low-powered, inexpensive and readily available projection equipment. This can be done on screens up to six by eight feet in size with almost total independence of the amount of incident light on the camera side of the screen.

To understand the Lumiscope system, visualize a large plano-convex lens interposed between the projector and camera. Referring to FIGURE 2, the effect of this lens can be seen to redirect the off-axis rays to point C. Theoretically, a camera placed at "C" would be able to photograph all the energy leaving the projector, except for the small transmission losses of the lens. However, if the camera were moved only a small distance from this point, the image would no longer be visible. This is not literally so in a real system, but there would be significant restriction on the freedom of camera movement.

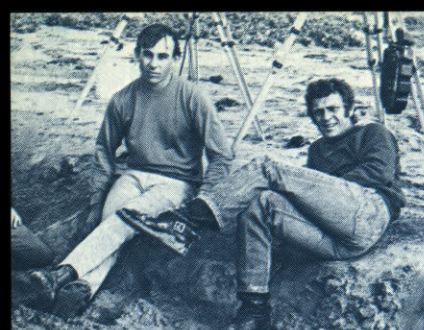
In order to overcome this limitation, a diffusion screen is added to the Lumiscope system. This screen is usually a rear projection type material, but its effect in this system is only to increase the viewing angle through which the image can be seen. The balance between "gain" and screen brightness must be decided for the particular requirements of the film-maker.

The use of a large plano-convex lens would be completely impractical. By applying the fresnel principle and using plastic material, the Lumiscope becomes a practical "thin" lens. The entire assembly is supplied in a heavy-duty extruded aluminum frame. Provisions have been made for easily changing the diffusion material. Among the materials which are available in addition to conventional rear projection screen materials are rigid plastic and glass diffusion screens. Special pens with washable ink are available for use with the glass screens. Using these pens, a performer may mark on the glass and interact with the projected image.

The interrelated factors in the system are: the distances of the camera and projector respectively from the screen, the degree of freedom required for the camera and the characteristics of the diffusing screen. The lens formula in FIGURE 3 establishes the relationship between the camera and projector distances for a given focal-length Lumiscope.

For situations where very little camera movement is necessary, an extremely high-gain diffusion screen may be used. There will still be uniform brightness across the entire screen when viewed from the on-axis camera position. An extremely wide range of diffusion materials can be accommodated in the screen mounting position of the Lumiscope frame. Typically, for a given degree of camera freedom, the brightness of the Lumiscope image, compared to conventional rear projection, will be from three to twenty times as great. The uniformity of the field will be superior under all comparable situations.

Lumiscope is manufactured by the Ryu Den Sha Company, Ltd. of Tokyo, Japan. For detailed information and applications assistance contact: RDS Lumiscope; P.O. Box 4143, Valley Village Station; North Hollywood, California 91607.



(LEFT) Motorcycle racing champions Mert Lawwill and Malcolm Smith swap yarns with actor Steve McQueen, who financed the film and appears in it with them. (RIGHT) The author moves in with his hand-held Arriflex to shoot a closeup of one of the racers.



## "ON ANY SUNDAY"

Continued from Page 47

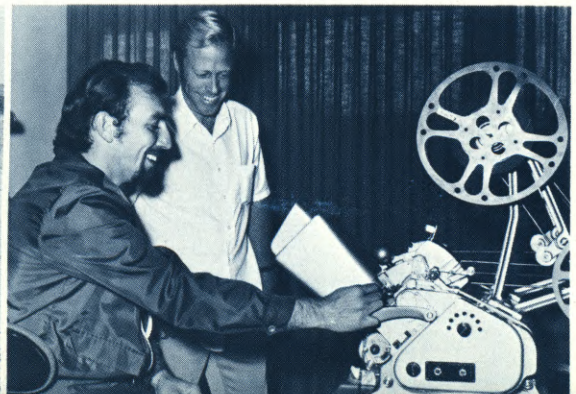
close that riders literally have their handle bars locked. Who can do this more effectively than the racers themselves? So this is why a lot of motorcycle racers became additional cameramen. I cannot overemphasize their cooperation; they just knocked themselves out for us. In turn, they became so involved with photography that they would come into our offices to look over with us the footage they had contributed. We gave some, such as Mark Brelsford and Jim Odum, screen credit for photography, but a host of others contributed more than we could acknowledge, among them Mert Lawwill, Frank Gillespie, Don Castro, Dave Smith, Cal Rayborn, Walt Fulton and Gary Nixon.

The problems of filming cross-country motorcycling are completely different from doing professional racing on a track. Nobody, to our knowledge, had ever filmed a desert race. Five hundred to a thousand people form up in a single line ready to go pell-mell over a course of 100 to 150 miles. Bruce thought it would be tremendous if we could do it. If we could hire about twenty cameramen. If we could find the sound men and the Jeeps to transport them and their radio-controlled equipment. If we could afford a helicopter and pilot, all the equipment we would need.

"It would be like filming a war," Bruce said.

The scenes we brought back from the

(LEFT) Brown and Bagley film scenes of McQueen, Lawwill and Smith for lyrical slow-motion "ride sequence" which winds up the picture. (RIGHT) Brown discusses cutting of a sequence with editor Don Shoemaker, who did a monumental job of wading through 300,000 feet of film and cutting it into an exciting feature.



Southern California Mojave Race have elicited praise from reviewers of the film, and much of the credit for this must go to the team of Dave Jones, helicopter pilot, and Nelson Tyler, aerial cameraman. Nelson designed the vibrationless mount he uses, so, naturally he is familiar with it and efficient in its use. In our opinion, these two are tops, and we were fortunate to get them.

As far as equipment was concerned, our only failures were the result of the dirt which is unavoidable with this kind of filming. It was worse than I can describe, however. Understandably, one of our first investments was a good air compressor for blowing the dust out of the cameras—after we had worn out our welcome down at our friendly neighborhood filling station. Eventually, we had a member of our staff devote the majority of his time to cleaning up the equipment every week. Worse than dust was mud. Sometimes we would shoot in streaming rain with the cameramen sloshing around in the mud with Baggies over their cameras and eyepieces so fogged up they couldn't even see. From a visual standpoint, though, we feel the weather difficulties added rather than detracted. For example, the heat waves which distort some scenes were deliberately planned for, as we consider them a very real part of cycling.

Just the same, it takes a pretty rugged crew to maintain unflagging enthusiasms under some of these conditions, not the least of which is constant travel. We filmed about 17 national races in the U.S., from Bonneville, Utah to Peoria, Ill. or from Sedalia, Mo. to Daytona, Florida. Bruce, Don Shoemaker, and Allen Seymour made several cross-country auto trips with the riders to authenticate the travel hardships. This didn't win them too many points with the wives and families left behind, but the gals suffered through the project with us without too much complaint.

As I said, we accumulated over 300,000 feet of film, but without the capable editing of Bruce and Don, it would not have been much of a picture, despite all the blood, sweat and tears. It was a great day for us when we persuaded Don to give up his nice steady job and move his family—lock, stock and barrel—down to the beach to join us. He brought with him his years of professional experience with ABC and other Hollywood film producing outfits, and also a point of view compatible with ours. When you can get a skilled editor who also has a cameraman's eye and photographic ability, you get the rapport which is needed in a group where everyone does, not only his own

Continued on Page 90





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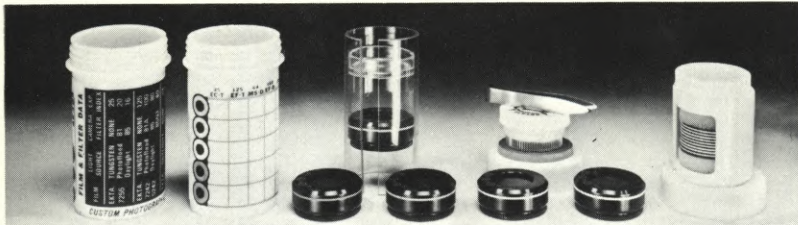
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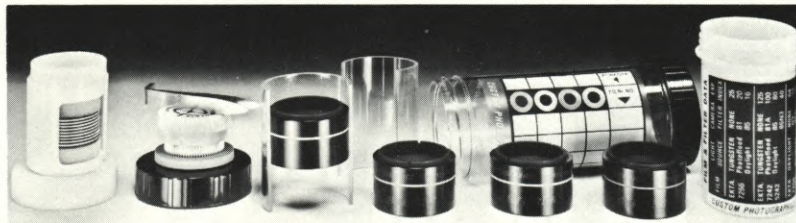
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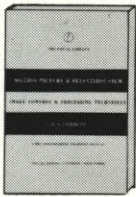
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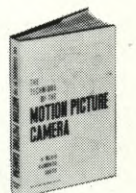
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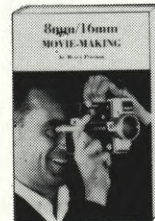
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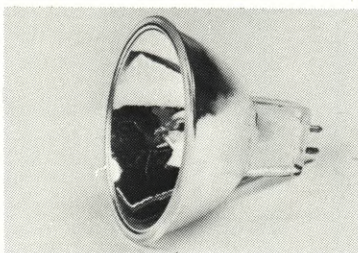
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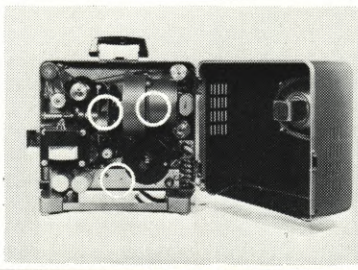
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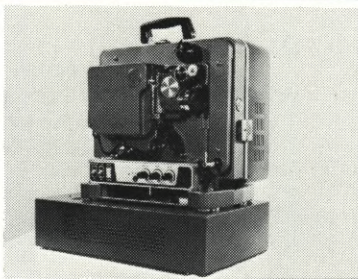
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## BLOW-UPS FROM 16mm TO 35mm

Continued from Page 67

reduction CRI should be balanced so that the release prints can be printed on one light. Here again, the Callier coefficient problem becomes important. The laboratory must resort to extraordinary testing procedures to ascertain necessary exposure corrections in order to obtain an equalized 16mm CRI from a 35mm negative. Sometimes it is necessary to notch the 16mm CRI negative in order to smooth out the timing.

If a producer does not already have a 35mm color master positive or 35mm separation positives on hand, making a reduction CRI is also the most economical way to make a large number of 16mm release prints. In any case, it is the way to get the best possible quality in 16mm prints from 35mm originals, and it is the method now commonly used in making 16mm prints of pictures for television, schools, homes, airplanes, ships at sea, or institutional exhibitions.

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A new, low cost line of multi-projector programmers, called Dijitel, have been added to the programming equipment manufactured by Arion Corporation of Minneapolis. Dijitel programmers are available in three, six or nine channel models, ranging in price from \$425.00 to \$825.00. The Dijitel uses the reliability of computer logic to control any combination of projectors plus dissolve controls, lights, and special effects.

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## 1971 KODAK TEENAGE MOTION PICTURE AWARDS

Continued from Page 75

which features by-play between a gray "glob" of clay and a green plastic monkey. "Remarkable for this age group," commented judges who also praised Lynch's "good pre-planning . . . good editing . . . good pacing."

—"HAPPINESS IS THE WACKY WONDERFUL WORLD OF WEDGWOOD", produced by the 10-and-11-year-old students in Mrs. King's Class 123, Wedgwood Elementary, Florissant, Missouri, tied for third place (\$50). A brief summary of activities and programs presented throughout the 1970-71 school year, the 10-minute movie was excerpted from a 40-minute documentary about the school prepared by the class to be shown to parents and students. "A good choice of film project for a group," said judges who selected the 8mm color film for an award.

In the junior category, other top winners are:

—"THE FLY AND THE FROG", a 4-minute animation which won second prize (\$100), was produced by 15-year-old Jay E. Sumsion, Richland, Washing-

ton. It features the inept attempts of a green clay frog to catch an elusive, fuzzy fly. The Super-8 color silent film was called "a good stop motion animation" which "made good use of character's expression" and "built suspense" by awards' judges.

—Tom Bertino, 12, Berkeley, California, spent 15 hours on his first film, "HERE TODAY, COIN TOMORROW", a \$50 third prize winner. The 7-minute animated cartoon follows the adventures of Floristand, who finds a rare coin, loses it, and then finds it again. Judges remarked that the eighth grader "shows considerable talent" and praised his "interesting animation technique" in the Super-8 black-and-white movie.

Other top winners in the senior category are:

—A prolific filmmaker, 17-year-old Howy Hess, Santa Maria, California, whose most recent of over 30 film productions, "WHY FRANKENSTEIN", took second prize (\$100). In the "filmic-poem," an unusual Frankenstein's monster—designed as a powerful soldier of death—is destroyed because, as a loving, natural being, he does not suit the purposes for which he was created. "A gripping picture," said judges, "excellent quality . . . remark-

able camera angles . . . very good technique . . . fine acting."

—Started as a school project, "EASY REITER", a first film effort by 16-year-olds Tom Birkett and Duffy Reiter, both of Stockton, California, earned them third prize (\$50). A luckless 15-year-old high school student, portrayed in the Super-8 color film by Reiter, is the hero of this live action movie which took approximately 168 working hours to produce. During judging, the 27-minute film was lauded for "excellent use of camera, framing . . . good story idea . . . and good choice of musical background."

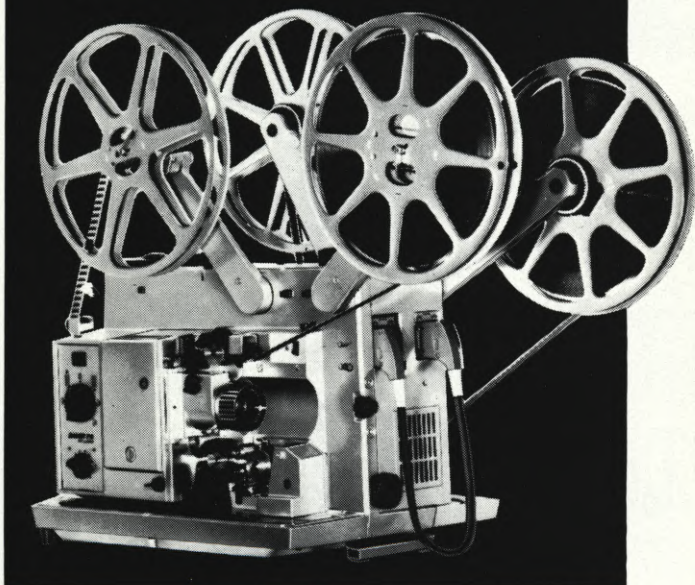
In the One Reeler category, other top award winners are:

—Ron Howard, 16, Burbank, California, won second prize (\$100) for "DEED OF DARING-DO", a 3½-minute live action film which shows the daydream adventures of a young boy roaming around a western movie set. "Well-executed," said contest judges who particularly noted the "good story line . . . effective use of camera angles . . . and very good cuts" in the Super-8 color production.

—The splendid sets—"too good to waste"—available in nearby Cripple Creek, Colorado, inspired Russell Kern,

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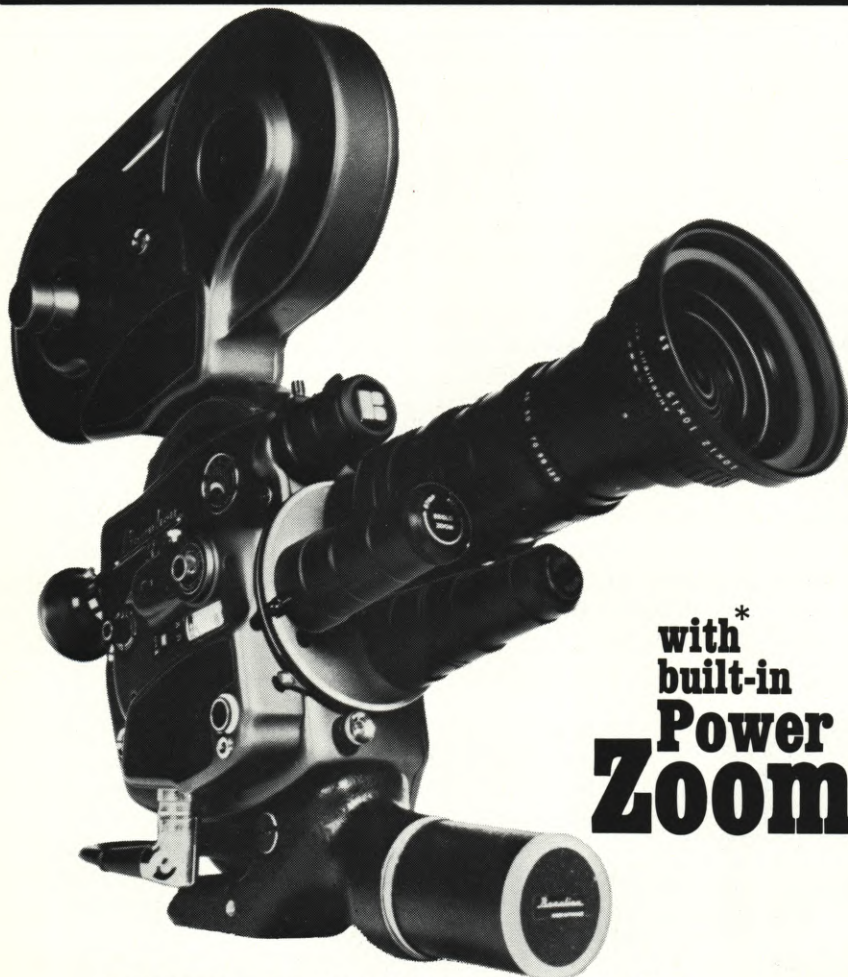


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18, Colorado Springs, to make "A FIST-FULL OF SPAGHETTI", a rough-and-tumble western which was awarded third prize (\$50). The Super-8 color film, the 27th produced by the Colorado State University freshman, was praised during judging as a one reeler which "displays a real grasp of pictorial continuity."

Other top winners in the Sixteen Category are:

—Sixteen-year-old Carl Willat, Mill Valley, California, won second prize (\$100) with his first 16mm film, "WASHINGTON AT VALLEY FORGE". Set to the comic jug band song which inspired its young producer, the 2-minute animated cartoon takes a tongue-in-cheek look at George Washington and his troops during the winter of 1777-78. Judges cited the "amusing spoof" for its "exuberant animation . . . excellent pacing . . . and good sense of humor."

—"DO YOU LIKE THE RAIN?" is "like a single thought or poem, a father's unspoken question to his son," says Charlie Richards, 16, Des Moines, Iowa, of his third prize (\$50) winner. The 3½-minute black-and-white production, which explores the relative merits of rain in words, music and images, was the high school senior's first film effort. "A sensitive little gem of a film with real feeling in the photography and in the use of music," commented awards judges.

Films with excellence in a particular aspect were given Special Awards (\$25).

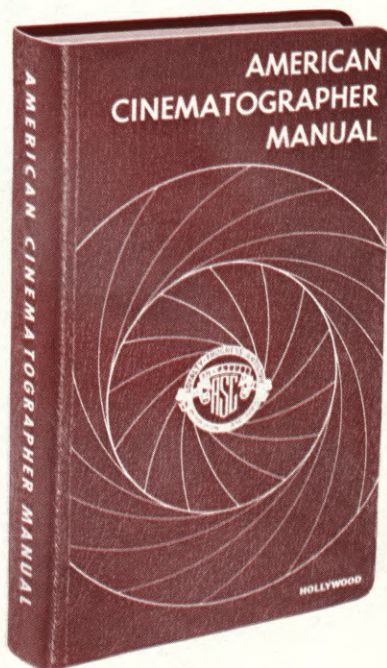
The annual competition is sponsored by Eastman Kodak Company in cooperation with the University Film Foundation on behalf of University Film Association, whose members serve as judges, and the Council on International Non-theatrical Events (CINE), which chooses films from among the winners for showing at foreign film festivals.

This year's judges were Peter Dart, associate professor, Division of Radio, TV, and Film, University of Kansas (chairman); Guy Brown, 20, Paramus, New Jersey, 1970 Grand Prize winner; J. Blair Watson, Jr., director, Office of Instructional Services, Dartmouth College; Rose Blyth Kemp, vice president, planning and development, Columbia College; James Card, curator of motion pictures and vice director, George Eastman House; Graeme Fraser, vice president, Crawley Films Limited; Thomas W. Hope, consultant and publisher of *Hope Reports*; George W. Colburn, president, George W. Colburn Laboratory, Inc; and John Flory, consultant, Motion Picture and Education Markets Division, Eastman Kodak Company. ■

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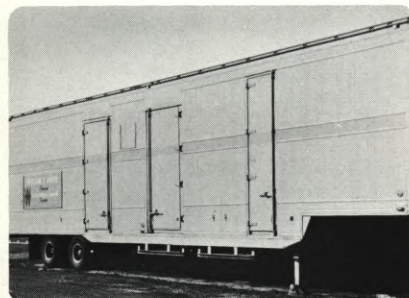
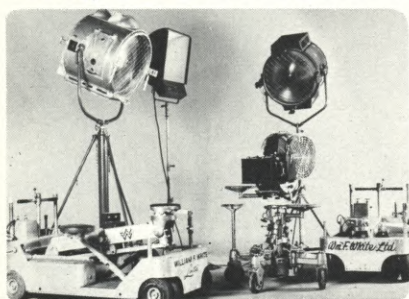
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### "ON ANY SUNDAY"

Continued from Page 80

specialty, but also doubles in brass wherever he's needed. Our usual procedure was for the whole group to view the film we had obtained the previous Sunday, discuss it, and decide the principles it represented. Then Don would take the film to his editing table, select appropriate scenes, and have a work-print made. Along with this, he kept a detailed log so we'd know what footage was where.

About this time, we recognized we'd have to face up to a fact of life confronting every independent filmmaker—namely, that making a film is one thing, and selling it another. We made a three-reel 16mm promotional film to show to the distributor and the press at special previews. While we never quite regained the three week's time this required, we are convinced it was a necessary step. Once the distribution aspect was locked up, we could go ahead with the final editing, sound recording, and the 35mm blow-up.

If you are to have professional quality, making the blow-up is not just a simple matter of enlargement, as the color and densities must be balanced and corrected. This is particularly important when the original was shot, as ours was, over a long period of time, under adverse weather and lighting conditions, with a variety of film emulsions (7255, 7256, 7241, 7255), and often with forced development of the film. We selected Cinema Research Corp. to do the job for us, not only because we were so satisfied with the work they did on "ENDLESS SUMMER", but also because they offer a complete range of service. We could save time and maintain greater control in getting our titles and special effects done along with the blow-up.

Except for Don, we are not very technically-oriented people, but we were impressed with the equipment Cinema Research had acquired since "ENDLESS SUMMER". Their Eastman Color Analyzer proved invaluable, as we could work closely with their crew and actually see and select the color values we preferred. These could be translated precisely to the optical printer, as the Bell & Howell additive head identically matches the color analyzer with very minute increments of color balancing, and the vibrationless electronic drive gives better quality. Since our picture was enlarged to a 1:85-1 ratio instead of the normal 1:33-1, it was sometimes necessary for Cinema Research to scan or crop some frames to re-center the

image optically for the correct framing. They also worked closely with the Technicolor people to assure us quality release prints.

When it came to making the sound track, Don had a lot of innovating to do in matching the action with appropriate sound. When you watch a cycle on film, you have every right to expect that the sound will increase in volume as the machine approaches and diminish as it goes by. This is not the case; the actual sound, coming out the back of the motorcycle, gets loud and stays loud. The viewer is unaware that he is watching slowed motion a lot of the time, as to his eye it is still incredibly fast. Much of the time, therefore, sync-sound, done when the action was filmed, was unsatisfactory. We had hired Bill Amberg, who has his own producing company, to help us with both sound and camera work, and he had some suggestions. We tried radio-controlled mikes, wireless mikes, playing the track backwards, positioning the mike on the opposite side of the racing track, but nothing quite worked. In the end, we found the most authentic sound was obtained by putting a Nagra recorder on a racer, taping a mike under his leathers, and having him go out and get the appropriate sound for us. Frequently, Don and I spent hours trying to duplicate sound effects for a single scene.

Bruce's very personalized narration is, of course, the sound the audience remembers best, but we also felt a musical track would enhance the picture's values. However, the problem here was one of communication. We felt we lacked the proper terminology to describe what we were after to someone used to working in the major studios. Bruce, though, had heard some music by Dominic Frontiere which he liked, and when we commissioned this man to do our music, the communication problem evaporated. The entire score was written, arranged, conducted and recorded by Dominic, and I have never seen such total commitment. We owe a lot to him.

"Commitment", though, is the magic word in making a picture such as ours. If I have given the impression that every moment was sweetness-and-light, big-happy-family, never-a-cross-word sort of thing, that is naturally an exaggeration. However, we are a tightly-knit group with a tremendous enthusiasm and a genuine affection for the entire motor-cycling fraternity. If our picture achieves the success we hope it will, it is because a bunch of guys were dedicated enough to work 'round the clock if necessary on any Sunday. Or any other day of the week. ■

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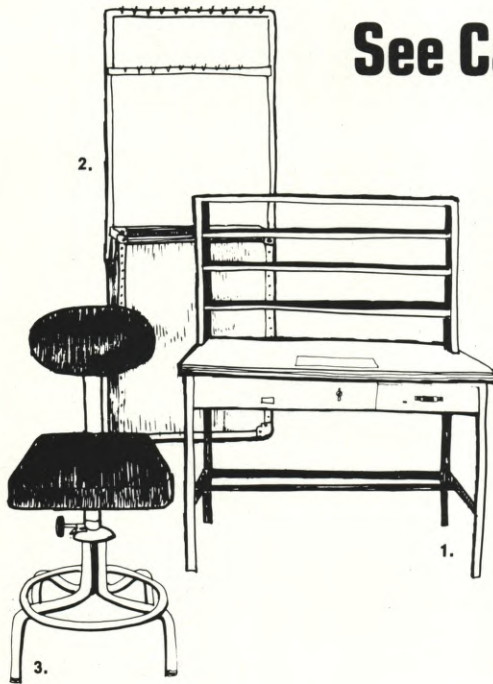


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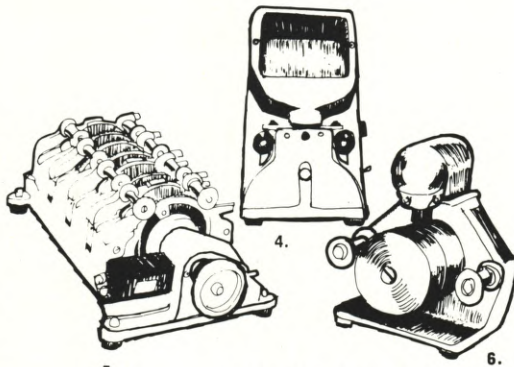
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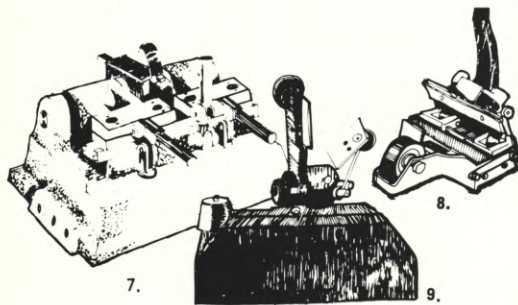
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# THE BOOKSHELF

By GEORGE L. GEORGE

Film book publishers are decidedly on a nostalgia kick, partly as a reflection of the mood of the times, partly because that type of book sells well during the holiday season.

Lawrence J. Quirk, a particularly apt exponent of the trend, comes up with three historic surveys, *THE FILMS OF FREDRIC MARCH*, *THE FILMS OF INGRID BERGMAN* and *THE FILMS OF PAUL NEWMAN*, all from Citadel Press. Uniform in their large format, they include the usual spread of well-selected stills (close to 400 each), complete filmographies with cast-&-credit lists, synopses and press reviews, and perceptive studies of each performer's life and career.

\* \* \*

Another window on the past, *VON STROHEIM* by Thomas Quinn Curtiss (Farrar, Straus & Giroux) is an incisive, fact-filled survey. Stroheim's adventurous life and intense personality are fully discussed, stressing his artistic and social insights, his battles to retain his films' integrity, and his tragic rise and fall as a director.

\* \* \*

Mary Astor's autobiography, *A LIFE ON FILM* (Delacorte), spans Hollywood history from 1920, when she started in films at age 14, to her 1964 retirement with over 100 features to her credit. This is a candid and informative view of an industry in constant renewal, as seen by an intelligent and talented actress.

\* \* \*

A glittering past is conjured up by Alan G. Barbour in two large size, attractively illustrated Macmillan books: *A THOUSAND AND ONE DELIGHTS*, alive with memories of the great movies of the 40's, and *THE THRILL OF IT ALL*, the hoofbeat saga of the B-Westerns from *The Great Train Robbery* (1903) to *The Marksman*, fifty galloping years later. In *WARNER BROS. PRESENTS* (Arlington), Ted Sennett combines erudition with nostalgia in his evocation of filmmaking in the 30's and 40's, when that studio's array of top creative talent provided some of the most popular and trend-setting screen fare.

\* \* \*

Another aspect of the reading public's interest in the past shows itself in the reprinting of significant out-of-print books. Perhaps the most important is



Huntly Carter's *THE NEW SPIRIT IN THE CINEMA*, a 1930 item re-issued in the Arno Press series, *Literature of the Cinema*. It is an extraordinarily lucid study of the sociological trends of world film production, analyzing its economic and esthetic contents as an aftermath of the introduction of sound.

\* \* \*

Equally unique in its field is *THE BUSINESS MAN IN THE AMUSEMENT WORLD*, written by Robert Grau in 1910 and now part of the 20-vol. facsimile collection from Ozer Publishers, *Moving Pictures: Their Impact on Society*. A prominent booking agent, Grau was a keen observer of the nickelodeons' growth, the film invasion of vaudeville houses, and the transition from stage to screen as the most popular form of entertainment. His fascinating narrative chronicles an era of the industry's expansion and sketches its leading protagonists.

\* \* \*

A 1931 study of the movie business is the Dover reprint of Benjamin B. Hampton's classic *HISTORY OF THE AMERICAN FILM INDUSTRY*. It is a producer's authoritative view of a turning point that saw the defeat of the Trust, the rise of the star system and the battle for the theatres. Another Dover classic is Eisenstein's *NOTES OF A FILM DIRECTOR*, first published in 1948, in which the Soviet filmmaker sets down the esthetic concepts and practical examples that contributed immensely to the advance of film as an art form.

\* \* \*

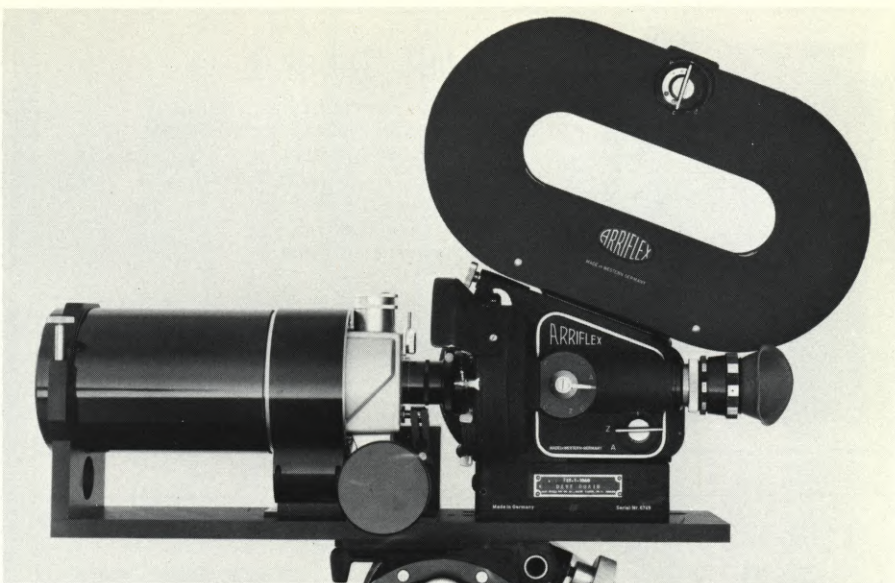
Professional interest in early film theoreticians will be rewarded by two further reprints from Dover. In 1945, Bela Balazs, a Hungarian scriptwriter and director working in Germany, published *THEORY OF THE FILM*, in which he discusses significant aspects of the cameraman's craft, from the emotional impact of close-ups to the lighting of Garbo's face. Hugo Munsterberg, a German psychologist who taught at Harvard, wrote *THE FILM, A PSYCHOLOGICAL STUDY* in 1916—the year after Griffith's *The Birth of A Nation*—and it was the first book to analyze the psychology of the audience.

\* \* \*

And speaking of Harvard, Stanley Cavell, who teaches philosophy there, looks at movies through a metaphysical viewfinder in his intriguing *THE WORLD VIEWED* (Viking). This is not for the average film technician or scholar, but if you are interested in unusual perspectives, you may well be surprised by what you find there. ■

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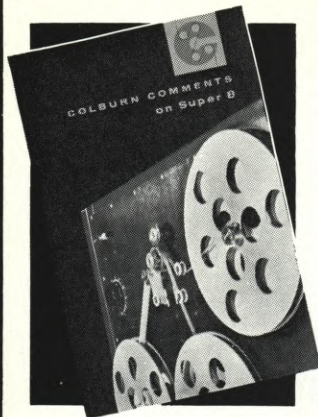
David Quaid says that the prototype of the Questar Cinema Model was used in producing several of the award-winning films made by David Quaid Productions.

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## TIMBERLINE ADVENTURE

Continued from Page 41

specials, let me quote the succinct description articulated by Director Don Ringe: "It is a series of five shows that place a highly-educated, well-trained scientist (biologist, entomologist, etc.) into an uninhabited area—a unique ecological environment—for a period of several months all by himself. He is provided with several Beaulieu 16mm cameras (his sole motion picture equipment), a variety of lenses and a remote-control device which permits him to film himself performing whatever activities he would actually be engaging in under such conditions of field research."

The "star" of this particular episode, having to do with the timberline environment known as the Alpine Tundra, is Dr. Dwight R. Smith, a Professor of Ecology in the College of Forestry and Natural Resources at Colorado State University. Having taken a leave of absence from the halls of academe in order to appear in this film, he has grown a handsome black beard and appears very hale and hearty.

Dr. Smith greets us warmly, obviously glad to have some short-term company, although he has clearly been enjoying the splendid isolation of this mountain retreat. Charlie Combs arrives with the pack horses and our gear is unloaded and stored inside Brown's Cabin, which is to be our home away from home for the next several days.

Taking its name from the stubborn miner who built it almost a century ago, after having slogged his way across the great plains from the eastern seaboard, Brown's Cabin is a masterpiece of frontier architecture. Its walls, looking as sturdy today as when they were built, are constructed of logs dove-tailed with such precision that one could scarcely force a knife blade between them. The main cabin is a two-story affair with a steep stairway and two rooms on each floor (which once housed a comfy arrangement of 12 miners), and there is a low-ceilinged shed off to the side that must have originally been used for storage. The cabin, for all intents and purposes, now belongs to Charlie Combs, who took it over on a mining claim in 1966.

"What a wild pad!" says Longo. "It's got walls like a fortress, but the roof looks a little ridiculous—just boards covered with tarpaper. How could it survive the snow load without reinforcements?"

"Well, it's been here 86 years," says Charlie, with laconic logic, and that's the end of that.

The term "Alpine Tundra" fascinates

me, conjuring visions of frozen wastes and I ask Dr. Smith why it is applied to this particular region.

"That's the correct scientific term," he tells me, "and it's quite similar in some ways to the tundra areas you might find in the Arctic Circle. It has many of the same species of broad-leaved plants, shrubs and grasses that exist in the Arctic Circle. The same is true of insects, bird life and, to some extent, mammals. The tree line varies from 11,000 feet at the Northern boundary of Colorado to nearly 12,000 feet where Colorado and New Mexico join and it extends from there to the mountain peaks which are over 14,000 feet in this area. This cabin is located almost precisely at the North-South-East-West center of Colorado. The wind, at this altitude, has a unique 'flagging' effect on the trees. The wind strikes them on their windward side, desiccating the buds. Also, they are more vulnerable to frost damage on the windward side, so that, as a result, the limbs grow just on the lee side. In addition, the ends of the branches are literally sheared off by the winds, as if you'd taken a pair of hedge clippers and gone over the trees. The result of all this environmental stress is that the trees have a wind-blown, sculptured look which is very dramatic. The whole area is a photographer's paradise."

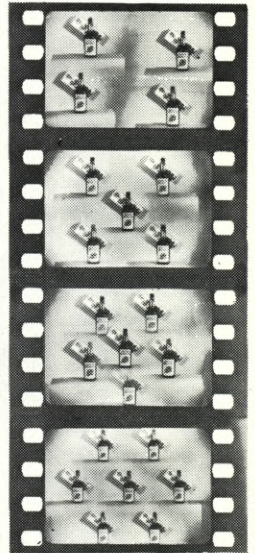
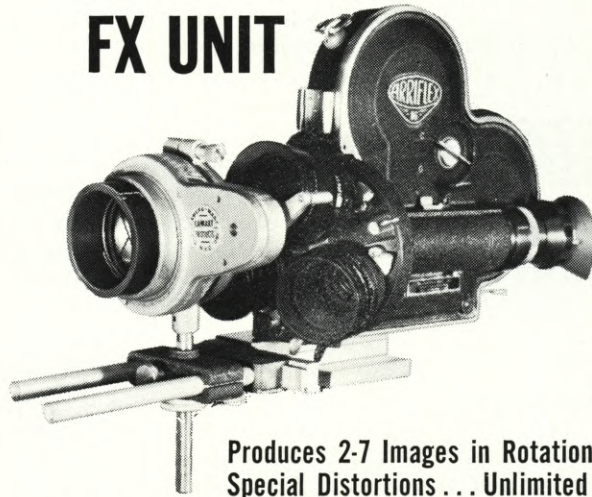
Speaking of photography, and in view of the fact that he will have filmed about 90% of the footage that goes into the finished picture, I ask him what background he's had in cinematography prior to this assignment.

"I hadn't really done any cinematography before," he tells me. I'd shot quite a few still pictures with my 35mm Pentax camera and a very limited amount of 16mm movie film for research and study purposes, but all on an amateur basis—hardly what you could call *cinematography*. They've provided me with three Beaulieu 16mm cameras to use up here and it's very fine equipment. The Beaulieu was a very good choice because, for an amateur like myself, its automatic exposure control and other automatic features make it very simple to operate. I could have used a good deal more training in the basics of making films before I accepted this assignment, but I did go down to the Beaulieu office in Los Angeles where a gentleman there gave me some very good instruction in the use of that camera. Also, I took a night class in photography at Colorado State University. It was conducted by Dale Sanders, a professional photographer in the area, and dealt with the practical aspects of

Continued on Page 97

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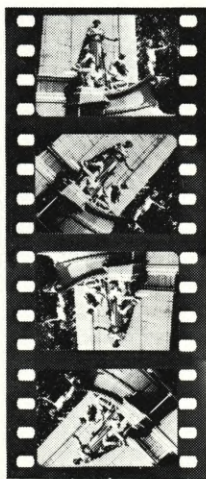
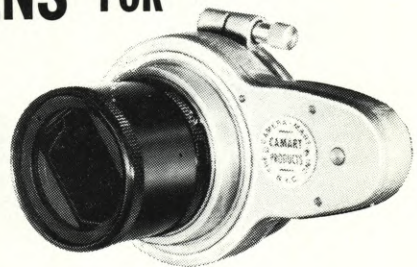
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# QUESTIONS & ANSWERS

Conducted by CHARLES G. CLARKE, ASC.  
and WALTER STRENGE, ASC.

*(Inquiries are invited relating to cinematographic problems. Address: Q. & A., AMERICAN CINEMATOGRAPHER, P.O. Box 2230, Hollywood, Calif. 90028.)*



**Q** We have been producing three fashion films annually, using 16mm Commercial Ektachrome, making release prints without sound. On our next production (working with a low budget, of course) we would like to add sound, including narration and background music, and make about 10 prints. How can we add sound at low cost to our 16mm Commercial Ektachrome original master?

**A** To obtain the type of sound track you require, the usual procedure is to begin with the use of magnetic tape. Record your narration on one tape, then record your music on a second tape. If you have two-channel facilities available when rerecording, you can combine the two tracks on a single tape, thus obtaining the level of narration and music that you wish. Where such facilities are not available your best bet is to engage a professional sound recording studio to do the work for you. From the resultant single tape, the recording studio can then transfer to an optical negative sound track for Ektachrome printing. In the cutting, sync your picture with the sound track to prepare it for release printing.

**Q** I have an incident exposure meter and would like to know how to use it to determine exposure where there is backlight in the scene?

**A** To take a reading of a back-lighted subject with the meter, the meter should be used in the normal manner—that is, at the position of the subject, and with the heliosphere light-collector aimed at the camera lens.

As a back-light illuminates only a portion of the camera-side of the subject, it will illuminate the same percentage of the heliosphere, which represents the camera-side of the subject, and thus the meter will precisely indicate the correct exposure.

**Q** In photographing a Chinese junk coming in towards a rocky prom-

ontory, I wish to achieve the effect of the craft coming through a fog, and becoming more clearly defined as it approaches. I have Harrison fog filters Nos. 2 and 4. Are there any special directions, filter factors, etc., to be observed in order to get the effect described? I will be using 16mm Ektachrome.

**A** Fog filters alone may not give the desired effect of increasing clarity as the subject approaches, because fog filters affect both background and foreground to about the same degree. Used with real (or artificial) fog, such filters are useful to enhance the effect of the fog, especially in the foreground where real fog usually thins out. Smoke, which is light in tone, may sometimes be used where artificial fog-making facilities are not available; here, fog filters can be useful in blending background with the foreground.

When fog filters are used, the resultant effect is best determined through actual test, if the photographer is not already familiar with it. Usually, the result is much less "foggy" than it appears to the eye through the camera, depending, of course, on the aperture used and the subject contrast. By combining fog filters, additional effect is obtainable. In color photography, bright hues often pick up in the background, and even a fairly pale blue sky will come through on film where it was unnoticeable through the camera.

Interesting fog effects can be improvised when time permits, by shooting through parallel glass cells into which small amounts of cigarette smoke are introduced or exhausted. No factors need be considered for fog filters; they lighten the scene enough to make up for any transmission loss; in fact, it is sometimes necessary to stop down the lens.

**Q** Are butt splices made with a tape as durable as conventional lap splices?

**A** Butt splices made with Mylar tape are said to be stronger than any other type of splice known.

## TIMBERLINE ADVENTURE

Continued from Page 95

outdoor photography and the filming of wildlife. In addition, I had a number of discussions with Fred Shook who teaches cinematography at CSU—I wish I'd had time to take his course—and he went out with me on two weekends to shoot some footage of water fowl. We shot several rolls of film with the Beaulieu which, coincidentally, is the camera he uses in teaching cinematography at the university."

### What Are We Doing Here?

On the way to Colorado Springs, while we were on the plane, Don Ringe had explained to me why the camera crew from Hollywood was going up to Brown's Cabin at this point, and exactly what its mission would be.

"The format of the show calls for a scientist, living alone in a specialized environment for six months, to do his thing and document his own activities on film," he told me, "but there's a point beyond which you can't push that. In this case, the high altitude of the location makes it difficult for anyone living just a few hundred feet above sea level to work and function. The season of the year and the fact that the cabin is located in a mountain pass surrounded by high peaks cuts down the hours of sunlight and limits his shooting ability to quite an extent. Consider, also, that Dwight is a PhD, not an ASC, and the mechanics of professional filming are new to him. So, just after he arrived in the early summer, we sent a crew up for a few days, led by Larry Savadove as Director and Vilis Lape-nieks as Cinematographer, to shoot some scenes of Dwight moving into the cabin and just generally surveying and checking out the area. Then he was left alone for several months to shoot whatever he could shoot while studying wildlife, plant life, weather, water, geology—the whole realm of the ecological system of this area. He's shot a lot of very good footage during his months alone in the location. But now winter is here and it will be only a week or so before the real blizzards begin. The area will then be completely inaccessible. The only way Dwight will be able to get out is by air. We've made an arrangement with the Army to send a Huey helicopter in to get him. Our mission is to show the effect of winter on the environment and the hardships of surviving at this altitude in an extreme degree of cold. Dwight doesn't always work out of the cabin. He very often

Continued on Page 99

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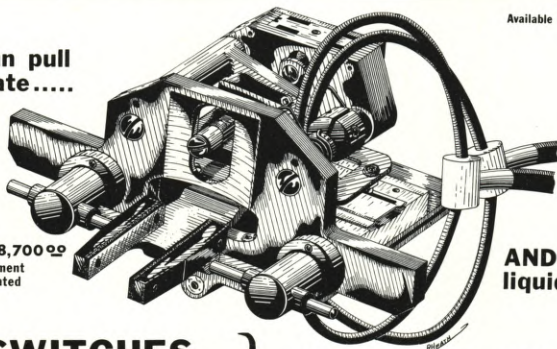
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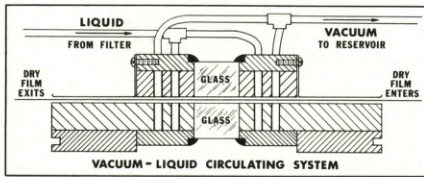
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## CINEMA WORKSHOP

Continued from Page 20

to align azimuth visually, and a special azimuth alignment test tape must be employed. This test tape is simply a high-frequency signal recorded by a machine with a critically adjusted azimuth. The procedure is simple. Play back the test tape on the recorder. Note the level reading on the VU meter. Then adjust the head azimuth *very slightly* to either side and note the level reading on the meter. If the level increases in one direction and decreases in the other, keep turning in the direction of the increased reading until a peak level is reached. This is the optimum adjustment. (Note: also check gap visually, as there could be smaller, secondary peaks in level on either side of the main peak or proper adjustment.)

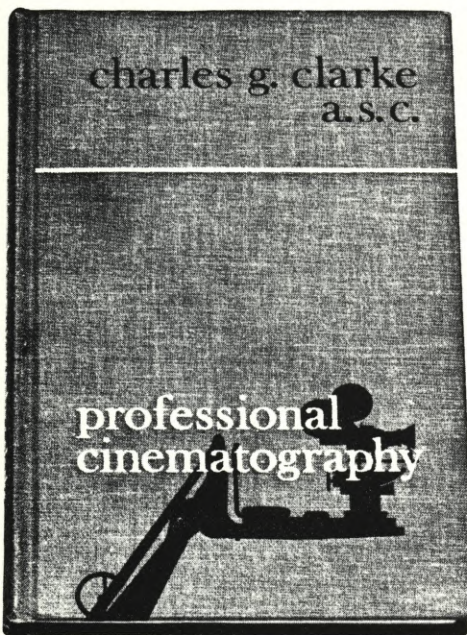
Once the playback head is adjusted, the record head is aligned in a similar manner. Record a steady tone onto a blank tape, monitoring off the playback head. Adjust the azimuth, as before, for a peak reading on the VU meter. Heads with improperly aligned azimuth will suffer from severe loss in signal strength and exhibit poor signal-to-noise quality.

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By CHARLES G. CLARKE, ASC

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ABOUT THE AUTHOR: Charles G. Clarke, ASC, a top Director of Photography at 20th Century-Fox for many years, and an ASC member, taught Advanced Cinematography at the University of California at Los Angeles, where he recognized a need for practical professional guidance for students striving to be the industry's future Directors of Photography. It is this need which has given rise to his publication of a book on the subject and subsequently the latest revised edition of Professional Cinematography. The first edition of this valuable book has become required reading at many universities and schools offering courses in cinematography.

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## TIMBERLINE ADVENTURE

Continued from Page 97

backpacks further up the mountain, even higher than we are now, where he has to exist under very stringent, cold conditions, while functioning as camper, scientist, cameraman—all those things at once. It's pretty unreasonable to expect all that of the man. So that's why we're going in now with a professional cameraman, Joe Longo. The idea is to give Dwight the freedom to act more naturally, to just let him do his thing and not be concerned with a locked-down remote camera or what he has to shoot. We want to get shots of him climbing the mountain on snowshoes with a heavy pack on his back, while the snow is falling. We want scenes of him setting up his campsite in temperatures below zero, with winds blowing at 40 miles an hour—which are things that he couldn't possibly shoot himself."

All this is very interesting, but I keep wondering how Don expects Nature to provide all these special effects on cue. Little do I know that he has a private pipeline to God.

The filming begins with a sequence showing Professor Smith communing with the birds. Shortly after he moved into the cabin, six Canada Jays (sometimes known as "Camp Robbers" because of their proclivity for carrying things off) had taken up residence nearby, providing him with a certain companionship and amusing him with their antics. That they are very tame is attested by the fact that, while I am loading my Nikon, one of them perches right on the camera and supervises the job.

The Arriflex is set up and, while it rolls, Dr. Smith sits on a kind of narrow porch alongside the cabin and holds a bit of cracker in his mouth or places it on top of his head. The birds swoop down, quick as a flash, and carry off the morsels. It makes a very charming sequence.

Comes lunch time and Longo dips into his kit bag and comes up with a veritable smorgasbord, consisting of two kinds of Italian salami and three varieties of cheese.

"I always carry a few emergency rations," he explains, as we scarf up the welcome goodies.

The afternoon is taken up with the filming of sequences showing Dr. Smith performing more or less routine maneuvers in the area—checking the weather station he has set up nearby, studying the effects of environmental stress upon the trees and shooting various scenes with his Beaulieu.

Continued on Page 105

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## "LAST PICTURE SHOW"

Continued from Page 55

**SURTEES:** *Outside I used Eastman Plus-X negative. It's rated at ASA 80, but I had plenty of light for the stop I needed. Inside I used Double-X. It has more grain, but is rated at ASA 250 and can be pushed almost to ASA 1500, if necessary.*

**QUESTION:** Did you push any of it?

**SURTEES:** *No. It was so fast that I didn't have to. I could have gotten better quality by using the Plus-X indoors, as well, but that would have required even more light and, in this picture, the quality wasn't as important as having it look real.*

**QUESTION:** Aside from the sheer necessity of having enough light, what would you say was your greatest problem in achieving the extreme depth-of-field effect.

**SURTEES:** *Maintaining the proper balance between key and fill light. In color, for example, all that the film can handle is a ratio of about 10-to-1 between the brightest object and the darkest object and, on night exteriors, you usually light at about 4-to-1. But black and white film can accommodate a brightness contrast ratio of about 100-to-1, which is completely different from color and much more dangerous. Let's say that you shoot a scene at a certain ratio and you want to stop down further for the very next scene. As you stop down, you automatically pick up contrast—so you have to figure out just how much extra fill to add for compensation in order to get the second scene to look like the first. It can be very tricky, especially if you've been shooting nothing but color for a good many years.*

**QUESTION:** Your exteriors had a dark, brooding quality and very rich skies, which indicates that you must have made extensive use of filtration. Isn't that so?

**SURTEES:** *Yes. I went back to the old black and white Western type of photography, which isn't done anymore, where you have 20 or 30 filters that you use for different types of scenes, as called for. To say how and where you use each filter would be misleading, because you could give the same set of filters to a different cameraman and he would get a different result. In using filters, you sometimes under-expose or over-expose on purpose to get a particu-*



lar effect. You might use heavy contrast filters (even as high as a 25 red or 21 orange) in your long shots to make the sky darker—but this also corrects everything else in the scene. The whites become whiter; the darks become darker. When you move in for the closeups, it's a good idea to change to something like the old Aero-2 filter, which gives you more control. Or, if you still have to use the heavy-contrast red or orange filter, you balance the lighting by eye through the camera. When you look up it doesn't look like you've got any light on the subject at all, but you're photographing what you see through the filter. If you're stuck with using a red filter in a closeup, the face will go chalky where the sun hits it—so, by artificially lighting it, you work it over so that it doesn't look chalky. You knock down the sunlight by putting a net up to shade the face and you balance your light by looking through the camera. I think that one of the reasons I was asked to photograph this picture is because not many fellows shoot in black and white anymore and I'm one of the few left over from the old black and white days. You know, what they need now is 21-year-old cameramen who have 60 years of experience.

**QUESTION:** There's no way for them to gain that black and white experience anymore, is there?

**SURTEES:** No—that's the trouble. All that experience is gone. I hate to see black and white go completely. I think we've lost a great tool, because it's absolutely right for certain types of stories. It's like the difference between a painting and an etching. The work that Arthur Miller used to do in black and white, for example—it was like an etching—just beautiful art. It's simply not possible to get the same kind of half-tones in color that you can get in black and white.

**QUESTION:** Can you tell me a bit about the lighting units you used on this picture?

**SURTEES:** As I've said, we were going for depth of field on the interiors and often had the lens stopped down to F/10. What you need at that aperture is a flash bulb! For the 600 foot-candle key required in many of our scenes we couldn't very well get by with quartz lights, although I did sometimes use them to fill in for night stuff. My main objection to quartz lights, except for fill, is that I have no control over them.

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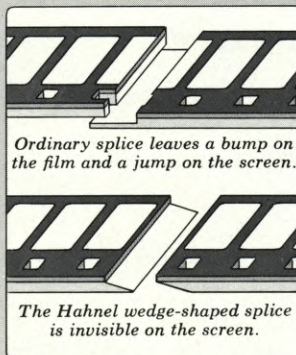
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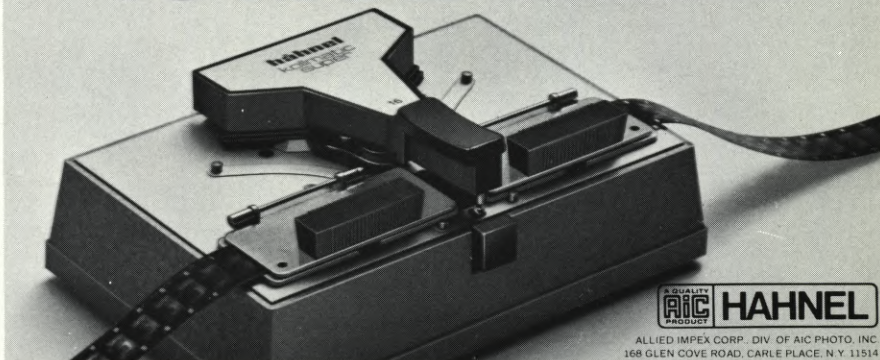


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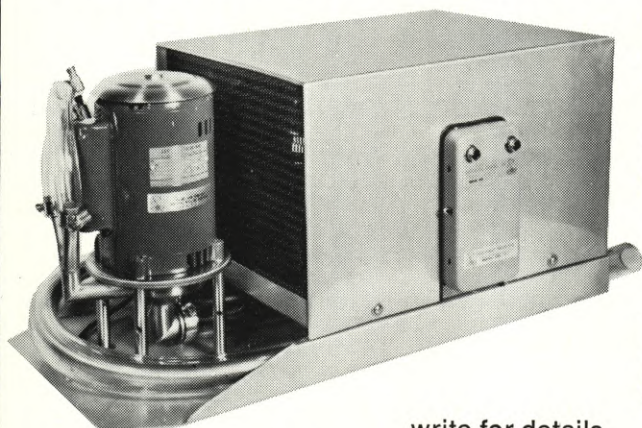
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*I can't get them to cast a sharp shadow. Even so, we kept the lighting equipment to a minimum. We had only two arcs, whereas on a picture of this size you'd ordinarily use at least five. We'd light up the whole town with just two or three lamps. Of course, they weren't interested in having the backgrounds brightly lit. I made a test in advance to show them what they were going to get, so they fully understood what the result would be. We made trucking shots down the main street at night with no camera car. We had to use a station wagon—but it worked out.*

**QUESTION:** It would appear that some of those actual interior locations were so small that you'd have trouble getting large lighting units into them—let alone a camera, crew and actors.

*SURTEES: I found that I could use the smaller studio-type lights if I could get them close enough to the people. The only time we used the arcs on interiors was for an effect—a shaft of light coming through a window or something like that. We did a lot with a few units, just as Jack Marta used to do when he was photographing the "ROUTE 66" TV series some years ago. He traveled all over and just plugged his few lights into the line current. He did a tremendous job, as good a job as I've ever seen on interiors—and with so little equipment. One of my problems was that this director liked to do 360-degree scenes, where the actors walked all around the place with the camera following. We never stopped moving throughout the whole picture. Such scenes are a cinch if you can do them in a series of cuts, but a continuous pan is something else. We were always hiding lamps behind furniture and on the floor. We used all kinds of gadgets, like suction cups to hang baby spots on a wall. When you get it all lined up, you're still not sure whether you're going to make it. The only thing that keeps you going in situations like this is how many years you've been in the business. Actually, I've never seen a shot that couldn't be made—if you have sufficient time to do it.*

**QUESTION:** The photography in this picture is very clean—that is, free of trimmings and frills. Is that due to the fact that you had such a small amount of lighting equipment available?

*SURTEES: Not really. I don't use back-light anymore—unless it's established as coming from a practical lamp or something like that—and I don't break up the walls with shadow patterns. I think*

that's old-fashioned and "motion picturish" and it would have been all wrong for this type of picture. Now, if you were shooting a glamour picture, it would be different. You'd tend to go back to the old style, with all the trimmings.

**QUESTION:** What kind of power source did you use to run your lights?

**SURTEES:** I had one little generator to carry the full load and the only trouble we had, from time to time, was overloading the generator. We kept the generator on the bus we traveled in and once it set the bus on fire. That bus was used to move the entire company around. There were no separate cars. The director and the actors all piled into the bus with the crew and it was sort of fun. There was a great spirit on this picture. We were considerably undermanned and everybody did as much as they could to help one another.

**QUESTION:** What kind of lenses did you use on the picture?

**SURTEES:** The entire picture was photographed with one lens—a 28mm. We used it for every shot, although it did cause something of a sound problem with camera noise when we would move in for the closeups.

**QUESTION:** I can't remember seeing anything that looked like a zoom shot in the picture. Did you use a zoom at all?

**SURTEES:** Bogdanovich won't even allow a zoom lens on the set. He detests zooms, even when they're used just to follow someone. Orson Welles had told him that a zoom creates artificial movement and, technically, he's correct. A zoom shot is merely a magnification of an object. It doesn't give you at all the same perspective as you'd get, for example, if you dollyed through a doorway. However, there were many times when it was necessary to move the camera just a couple of feet to tighten up the composition during a shot. Using the zoom for this purpose would have saved literally days on the picture, but Peter would insist on laying track and dollying that couple of feet. He has his integrity—which is very important to him—and you have to respect him for it.

**QUESTION:** There are various degrees of closeness in the director-cinematographer relationship. Just how closely did you and Bogdanovich work together on this film?

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*SURTEES: Very closely. There's a great deal of person-to-person contact when you're working with him. You're with him all the time. You're with him at dinner and after dinner and you never stop talking about the picture. He asks for your opinions—not just on the photography, but on story points, too. And he makes changes according to what people suggest—if he thinks they're right. If he doesn't think they're right, he always has a lucid reason why not. But I'd say he's very much open to suggestion—except on the subject of the zoom lens. It's fun to talk with him, because he's an expert on the history of the film industry. He told me that when he was 11 or 12 years old, his father—who was an artist—took him to see "KING SOLOMON'S MINES" and he said that from that day he remembered the name Surtees and swore that some day he'd make a picture with me. He's probably cured now.*

**QUESTION: And how about you?**

*SURTEES: As I said, I like working with new directors, if they have talent—and he's really talented. I said to him, "Peter, you're going to be alright. You're going to be a big director because you're just stubborn enough to get what you want." I said that because I couldn't talk him out of anything, and I'm pretty good at talking directors out of things once in a while. I'd say, "Peter, how can we get that shot? It's impossible to walk around with the camera like that. Where will I put the lights?" He'd say, "You'll get it." And then he'd walk away. And, by God, I'd manage to get it and he'd have what he wanted. I'd just shake my head and say, "You win again!"* ■

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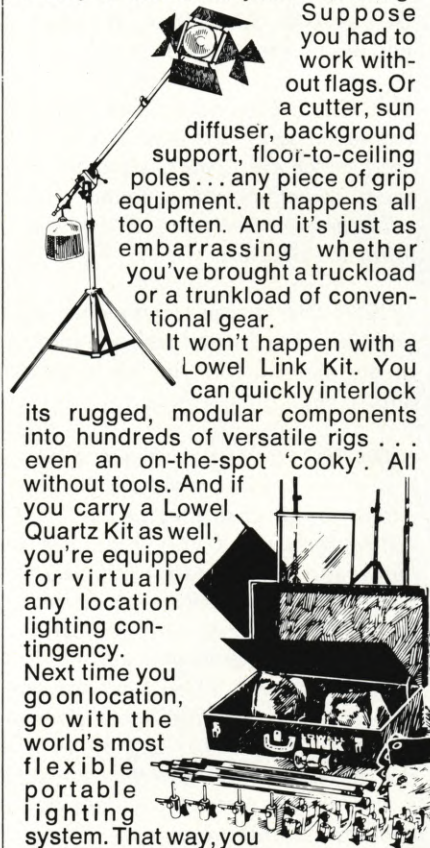
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**TIMBERLINE ADVENTURE**

Continued from Page 99

At one point they film a closeup of him blowing a whistle which, I am told, simulates the mating call of the Elk. As he sounds off with this weird instrument, I am tempted to run for the rocks, having visions of a whole herd of impassioned bull Elk thundering down upon us with God-knows-what in mind. But nothing happens—and I breathe a sigh of relief.

That evening, suffused with the spirit of brotherhood, I volunteer to cook dinner and the wood-burning stove is fired up for the production. When the food is served, my companions, gagging only slightly, tactfully refrain from devastating comment, but it is unanimously agreed that henceforth Longo, our very own Galloping Gourmet, will do the cooking.

At 7 p.m., Dr. Smith cranks up the radio to put through his nightly communique to Charlie Combs, located in beautiful downtown Buena Vista. He rattles off a list of needed groceries to be delivered on the next pack train and concludes with the statement: "Send up a bottle of Scotch for the camera crew and a box of Baby Ruths for me."

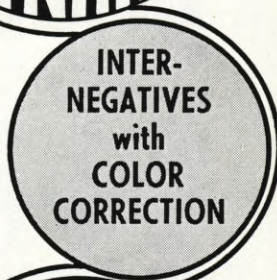
Afterwards we discuss the project at hand and I ask the professor to tell me about some of the experiences he's had during the filming and his reactions to them.

"I was furnished with a Remo-Rado system, which is used for operating the cameras by remote control," he tells me, "but I've used that only to a very limited extent—primarily where I've been portraying my own activities. I simply set the Beaulieu camera on a tripod and then moved into the frame and began doing my thing, whatever that was—taking vegetation measurements, and so forth. I have three Beaulieu 16mm cameras and two types of basic lenses—a 300mm telephoto and a 17mm-68mm zoom lens.

"Actually, I think the 12mm-120mm zoom would have been more convenient in getting closeups of some of the smaller animals—like the pika or cony, for example, which is a little rock rabbit. This is a rather shy animal and I couldn't pull in as tightly as I would have liked because I would frighten the animal if I got too close. About 30 to 35 feet away seemed to be about as close as I could get to the pika and this simply wasn't close enough for a tight shot with the 68mm.

"I did find that the sound of the camera would frighten some animals, even though I might be as far away as 50 feet. I obtained information on how

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to construct a blimp, but never got the job done. However, I have used a turkish towel wrapped around the camera and this has reduced the sound considerably."

I ask the good professor if his problem might not be solved by using the 300mm telephoto lens for this kind of shooting, and he says: "Oh, I *do* use the 300mm lens—although it's not always convenient to do so. I've used it primarily to get intimate closeups of small wildlife species, such as the marmot, the marten and the pocket gopher. You don't often see the pocket gopher come out of his tunnel onto the surface, but with the 300mm lens I was able to get so close that I could fill the frame with just his head.

"I was also able to get, I hope, some good footage of a young buck mule deer and three does that were feeding in the basin just across from my cabin. On several occasions I was able to shoot scenes of these deer without frightening them, simply by quietly opening the kitchen door and setting up the tripod with the camera and the 300mm lens inside the kitchen. The sound of the camera created no problem and they were never aware that I was filming them. The 300mm lens brought them up close enough so that a single animal would fill the frame. As a matter of fact, in the case of the buck deer, I had to pan him up and down as he was feeding in order to keep his head in the frame."

## Is Nothing Sacred?

The next morning, just as the sky is beginning to get light, the professor wends his yawning way down the stairs in his long-johns to light the fire in the kitchen stove and get things started—only to find himself surrounded by the eager-beaver camera crew intent upon documenting his every move for posterity. He is one of the few men I know who can manage to look dignified clad in long-handled underwear and he takes the whole thing with good grace. He is photographed stoking the stove with wood, lighting a fire and cracking through the layer of ice that has formed on a pail of water left in the kitchen overnight.

The sole illumination used for lighting these interior scenes consists of a couple of the light-weight, amazingly efficient Sylvania SG-77 Sun Guns, hand-held by Ringe and Desatoff.

Commenting on the lighting situation, Longo remarks: "The propane generator in the cabin here is sufficient for recharging the Beaulieu camera batteries and running a couple of low-watt-

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age bulbs in the room at night, but the crew that was up here before said it wasn't powerful enough to run their quartz lights. So, the only thing we really can use are battery-powered portable lights like these little Sun Guns. They're very effective. We get 10 to 15 minutes of light on a charge, but that's a lot for filming. The redeeming feature is the fact that the batteries can be recharged in about 45 minutes, and you're back in business again. If you carry extra batteries, you don't have to be held up while the others are recharging."

Although there is only a slight amount of ambient daylight coming through the windows when he shoots the kitchen sequence, he fits dichroic filters onto the lamps for consistent color temperature.

Later in the day, when the golden rays of the setting sun come shining into the room, he leaves the filter off to light a scene of Dr. Smith sitting near the window, conducting an experiment.

The script calls for this sequence of the professor backpacking up toward the summit of the mountain, where he sets up his campsite in the snow for an overnight stay. Our "star" has had several months to get used to the altitude, so he slings the bulky pack onto his back and goes loping up the mountain at a brisk pace. The rest of us—city-slickers all—trudge laboriously after him and are soon huffing and puffing mightily. Up near the top, the air is even more rarefied than it was at the cabin level and each breath of the cold thin air feels like a knife stab in the chest.

As Dr. Smith unpacks a compact blue nylon mountain tent and begins to pitch it on the snowy slope, he tells us a tale that is hair-raising in more ways than one: "I had backpacked into Silver Creek, about 10 miles from here, to film some scenes Larry Savadore wanted of the tent pitched in a rocky pocket. I selected a site at the base of Mt. Yale and set up the tent in a sort of chute between two rocky ridges. That evening, at about 8 o'clock, just after I'd crawled into the sleeping bag inside the tent, a strong electrical storm began to build up, complete with thunder and lightning. I was lying there with my eyes closed and was aware of the lightning, but it didn't bother me—although I couldn't go to sleep. At about 9:30, I had the impression that someone was flashing a powerful searchlight through the tent and I opened my eyes to find very bright lights moving around—apparently inside the tent. Part of this was due to the fact that the blue nylon of

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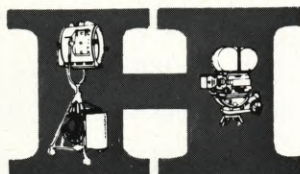
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the tent was being moved violently by the wind and was flapping back and forth, producing a friction that caused a flashing of light. But, in addition, I noticed a ball of fire building up, apparently where there was some kind of metal—the zipper or one of the three poles used in the construction of the tent. It would start at one of these points and just seem to sort of roll from the front to the back—and sometimes from one side over and down the other side of the tent. This was the first time I'd had so close an experience with what is called 'St. Elmo's Fire' (or sometimes, 'ball lightning'). It's a build-up of static electricity and, apparently, it's not particularly dangerous. But I could feel the hair on my arms standing up—and I could feel it in my beard."

A spooky scene, indeed!

By the time Dr. Smith has his tent pitched, it has grown quite cold and Longo notices that the low temperature is causing the motor on the Arriflex to run a bit slow. He immediately takes off his heavily-padded parka and wraps it around the camera as an improvised "barney".

"If I'd had any idea it would get this cold, I'd have brought along some of those little metal hand-warmers," says Joe. "They're about the size of a king-size pack of cigarettes. You put fluid in them and light them and they will glow for five or six hours, without any danger of fire. I use them on my own Arri-BL when I'm working at low temperatures. I take one of the smaller hand-warmers and put it in a felt-lined coffee can and fit it over the motor, securing it to the camera with shock cord. I put the regular Arri barney on the camera and gaffer-tape another hand-warmer inside, without zipping it up. This prevents the film from getting too brittle and keeps the torque motor on the magazine warm. I also put a couple of hand-warmers inside my film case. There's no danger of condensation and they keep the film pliable, so that it's easier to load the magazines. I wish I had a couple of those hand-warmers here now."

Don Ringe says he wants a dusk shot of the professor sitting by the fire in front of his tent and cooking dinner while dictating notes into his recorder. Since it is now the "magic hour", Longo takes the 85 Daylight filter off of the lens, so that the scene will go a bit blue. He underexposes one stop and shines the Sun Gun (minus dichroic filter) onto the professor's face to simulate the warm glow from the campfire. It should turn out to be a very convincing effect.

When the campfire sequence has been filmed, Dr. Smith crawls into the

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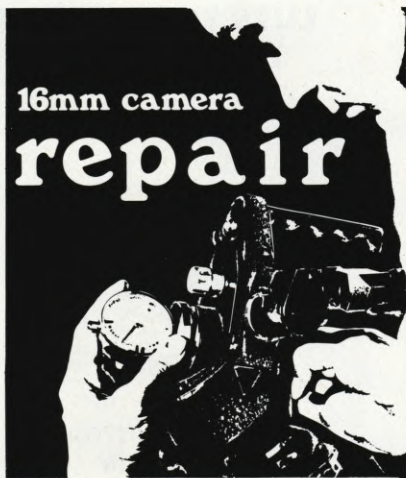
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tent, presumably to bed down for the night and Longo crawls in after him to shoot the action by the weird blue light that filters through the nylon. He grumbles a bit because he doesn't have a 10mm lens and has to make do with the wide-angle (17mm) end of the zoom lens, but he volunteers praise for the Beaulieu camera, which he has been using more and more for hand-held grab shots to cut in with the primary footage shot on the tripod-based Arriflex.

"This camera has saved us a lot of time," he observes. "From the mechanical standpoint, it works fantastically, even in this cold weather. I'm impressed with it. I don't particularly go for the fancy automatic exposure control, but only because I like to calculate my own exposures. It's a good, dependable camera."

### Home and Hearth

By the time we finish the last scene it's almost dark and very cold. We're damned glad to get back to the cabin and huddle around the fire. Joe says he's going to cook something that will warm us up and he does a big number with the pots and pans, humming away as he chops up what looks like a side of beef, adding a pinch of this and a touch of that. He's ecstatic when he discovers a cache of oregano hidden behind a jar of mustard. Whatever he's brewing, it smells mighty good. Finally, with mock solemnity, he announces: "These hands, which should be playing Chopin, have just created Beef Stew!"

I don't know how good he'd be at Chopin, but he sure is great with Beef Stew!

After dinner, stuffed to the gills, we sit around and talk about film.

Our erstwhile chef, who is now back to being a cameraman, says: "One of the things I appreciate about shooting documentary is that you have to rely heavily on the resourcefulness and creativity of the crew involved—especially when you're in a remote location. You don't have the frills of Hollywood available. Working with a limited crew is always a challenge and it can be a very rewarding experience, because it gives everybody a chance to become more efficient. Things happen very fast and you get so that you can anticipate what the other guys on the crew are going to do. The only thing I can liken it to is a machine gun crew in action—everybody putting everything into action real fast—and it usually works out. Documentary people—well, they have this facility."

Through all this philosophy, Don Ringe sits somewhat sullenly in a corner. He really needs a heavy snowfall to

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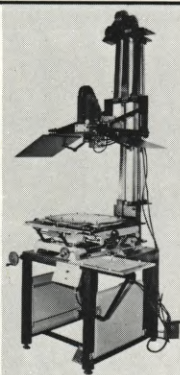
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tie this picture off. He's put in his order with that Great Big Weather Station in the Sky, but, so far, Nature hasn't cooperated.

Then he glances out the window and suddenly lets out a whoop. It's snowing up a storm!

By morning, the magic landscape is covered with a couple of feet of fresh powder and snowflakes, big as manhole covers, are still floating down. We break out the cameras and move forth to meet the elements.

The crew shoots scenes of the good professor slogging his way through the drifts—real "Man Pitted Against Nature" stuff, closeups of snowflakes piling up against the moss on a tree stump (cross-lighted with the Sun Gun to bring out the texture), a rack-focus shot from a dead tree to the vast mountain vista in the background, a tiny creek splashing merrily through hillocks of snow (with, again, the Sun Gun to lend sparkle to the water).

I can't help suggesting, with tongue in cheek: "How about a star filter?" But Joe rules that out as being too arty for the film's documentary style.

Later that evening, our young frontiersman, Dan Herman, materializes out of the snowstorm with the two pack horses in tow. The crew has gotten what it came for and the better part of valor is to get the hell out of there before we get snowed in for the rest of the winter—a fate to which Dwight Smith seems to have resigned himself.

Early in the morning, the gear is packed onto the horses, we bid fond farewell to the good professor and start the long haul down the mountain.

The snow is coming down in blankets and the wind is blowing a gale. It's cold—but COLD—and I'm suddenly glad I'm not a brass monkey.

The storm shrieks around us as we drag our way through the snowdrifts. Joe Longo, game to the last, is still grinding away with the Beaulieu—and all the scene lacks is Eliza crossing the ice, with the bloodhounds snapping at her *derriere*.

Down on the lower slopes it seems that behind every tree there is a beady-eyed hunter lurking, caressing the trigger with itching fingers.

As I observe these keen "sportsmen", lying in wait to kill for the fun of it, something that Dr. Smith said the night before comes back to me.

I had asked him if the filming he had been doing up here might change his lifestyle in any way, and he had replied: "I've done a lot of hunting in my life—big game and birds and such. But this experience of looking at animals through the viewfinder, through the lens

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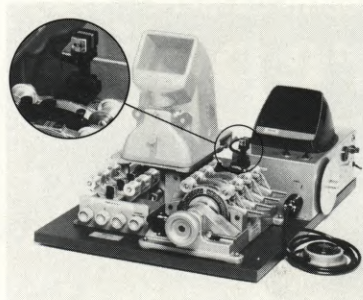
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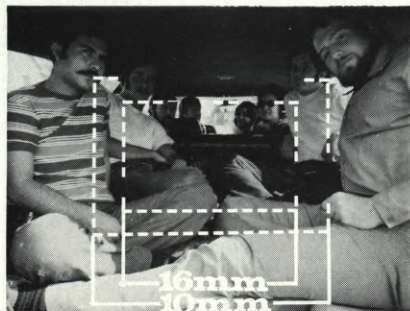
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of a camera, has had a rather profound effect on me. I've watched them, seen how they lived and followed them through the summer. So many of them are such beautiful creatures that I'm really questioning whether I'll ever go back and use a couple of fine new guns I've bought."

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A collection of 26 film classics produced throughout the world in the past 50 years will be televised nationwide over the non-commercial Public Broadcasting Service network next year through a grant from Xerox Corporation.

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Under terms of the Xerox grant to the Corporation for Public Broadcasting, the films will be televised on 26 consecutive Friday evenings in prime time beginning Jan. 14. More than 200 member stations of PBS will be provided with the series, which is being produced by KCET, the public TV station in Los Angeles.

All films are to be aired in their original versions. There will be no commercials and the films will be uninterrupted, except for station identification breaks. Depending on the length of each movie, the program may run from 90 minutes to more than three hours.

Lending added color to the series, Charles Champlin, entertainment editor of the *Los Angeles Times*, will introduce each film with a brief explanation of its place in the cinema spectrum. Champlin will conduct on-camera interviews at the conclusion with persons directly involved with production of the film or with movie critics and experts.

Leading off the parade of international hits will be the romantic "Jules and Jim," starring Jeanne Moreau and Oskar Werner, the film that established Truffaut as the leader of France's New Wave directors. The series will conclude July 7 with "Los Olvidados" ("The Forgotten Ones"), the classic work of Mexican director Luis Bunuel, produced in 1951.

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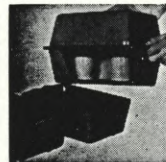
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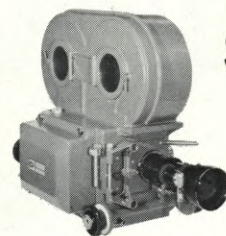
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**LOOKING BACK AT FILMEX**

Continued from Page 69

ber 9 through 19, 1972. Location will  
be announced at a later date.

It is sometimes difficult to isolate the  
reasons why a film festival succeeds or  
fails, but Los Angeles Times film critic  
Kevin Thomas precisely pin-pointed a  
couple of the main reasons for this  
event's success when he wrote:

*"What really made Filmex work,  
however, was the inspired choice of  
Grauman's Chinese, the ultimate symbol  
of Hollywood glamor and entertainment  
and always a fun, convenient place to  
go, as its key setting combined with the  
plain fact that the festival really did  
attempt to offer something for every-  
one—but without ever descending to the  
merely commercial."*

Had FILMEX chosen to descend to  
the "merely commercial", it might well  
have broken even financially, or actually  
made a profit, but it is to the credit of  
all concerned that commercialism was  
pushed aside in favor of making the  
screenings available to as wide an audi-  
ence as possible.

Very early on it was announced that  
the 11 a.m. screenings would be free,  
and those who had purchased tickets for  
these programs in advance were given  
refunds. Several of the most interesting  
special events were presented without  
charge and students were accorded very  
substantial discounts on admissions.

Many individuals and organizations,  
working both in the limelight and be-  
hind the scenes, deserve credit for the  
ultimate success of the venture. How-  
ever, special recognition is due FILMEX  
Director Gary Essert, Assistant Director  
Gary Abrahams, Press Representative  
Beverly Walker and their small but  
hard-working staff, for toughing it out  
in terms of the day-in-day-out blood,  
sweat and tears required to make the  
Festival function. They all hung in there  
to the point of exhaustion—and it paid  
off.

Despite the fact that there were  
many of us in the film industry who,  
from the very beginning, wished Filmex  
well and pitched in to help make it a  
success, there were a few who actively  
opposed it and a great many more, sad  
to say, whose doomsday view of Holly-  
wood and the motion picture industry  
in general left them awash in a sea of  
apathy toward an event that merited the  
support of the entire film community.

The acts and attitudes of these spoil-  
ers were summed up in appropriately  
blunt fashion by prestigious critic and  
lecturer Arthur Knight, when he com-  
mented in the recent 41st Anniversary

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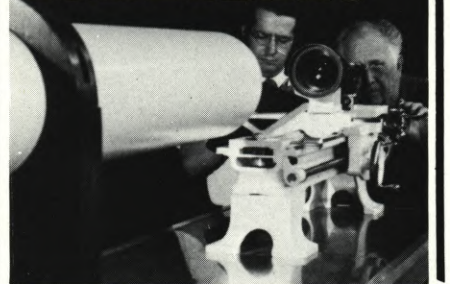
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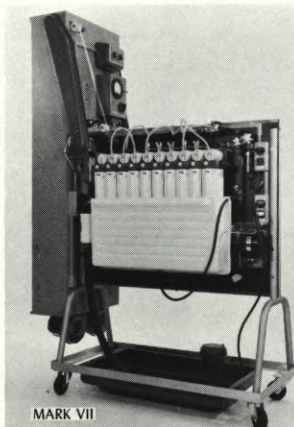
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Edition of *The Hollywood Reporter* as follows:

"... On the surface, at least, it seemed like a strikingly well-balanced, well-rounded event, one that the entire film community could take pride in.

"The sad fact is that the First Los Angeles International Film Exposition went on despite the film industry's apathy, and, in the instance of Universal, downright hostility. There were several major disappointments when films, like Stanley Kubrick's *"The Clockwork Orange,"* simply were not ready by Filmex time; but this was nothing compared to the frustration of the organizers as picture after picture was snatched away by one intransigent distributor after another. The original concept of the exposition was to exhibit the best of contemporary American product in the context of the international scene. Because of the lack of studio cooperation, it grew unexpectedly weighted with films from the past and consequently seemed more nostalgic (or historically oriented) than was intended.

"Several factors contributed to this apathy. The very fact that Filmex was a "first" no doubt encouraged the distribution people to adopt a wait-and-see policy, even above and beyond their ordinary reluctance to give away pictures for free. Presumably, their experience with the European festivals, where American pictures rarely figure heavily at awards time, also colored their reaction even though Filmex offered no prizes. Possibly the fact that the festival was presented in association with, among others, such rarified sponsors as the Los Angeles County Museum of Art and the cinema departments of UCLA, USC and Cal-Arts also helped scare them off. And many members of the industry still feel sincerely that the annual Academy Awards ceremony is festival enough for Los Angeles.

"Nor is there any point in concealing the fact that Hollywood's good neighbors to the north, the officials of the San Francisco Film Festival, were less than neighborly with what they clearly regarded as a rival and an upstart. They lost no opportunity in print or on television to cast doubts upon the integrity of both Filmex as a whole and its organizers as individuals. In at least one instance, they successfully persuaded the American distributor of two choice foreign films to withhold them from Los Angeles.

"Despite these vicissitudes, and a discouraging lack of financial support, Filmex has made its debut. It is too early to say whether or not it will become the annual cultural event that

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*its guiding spirits, Philip Chamberlin and Gary Essert, have hoped for. What it is not too early to say, however, is that in this, the first year of Filmex, the American studios have let slip an extraordinary showcase for their wares. For the first time in years, between November 4 and 14, the eyes of the world were focused on Hollywood—and Hollywood wasn't there."*

Fortunately, the audience was there—a gratifyingly *young* audience that paid its bread at the box office, that set aside *ennui* to express its appreciation for the masterworks of the cinema (old and new) represented on the program—an audience that unabashedly stood up and cheered the pioneering greats of the industry when they appeared—an audience that sat through 11 hours of Hitchcock, non-stop, in an atmosphere of almost "carnival" excitement—an audience of apt and eager film buffs that unstintingly poured out its love for this most dynamic of all art forms.

It is in audiences like this that the hope of the motion picture industry lies, despite current prophecies of doom—and it is from their ranks that the great film-makers of the future may well be drawn.

We salute them—and FILMEX—and wish them all the best!

HERB A. LIGHTMAN

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**FINLAND**  
ANNA  
Jorn Donner, Director

**FRANCE**  
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LE SOUFFLE AU COEUR (MURMUR OF THE HEART)  
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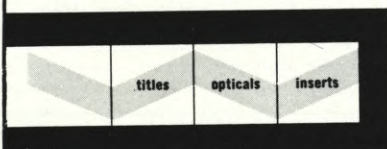
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Continued from Page 26

mentations will be made to the Academy Board of Governors, which bestows the Awards and determines which of three classifications of Awards will be given: Class I, which brings its winner an Oscar statuette; Class II, winner of which receives an Academy plaque, or Class III, which brings the winner an Academy citation.

Twenty-six technical achievements of the past year have been selected for 44th Annual Academy Awards consideration, it was announced by Gordon E. Sawyer, Chairman of the Academy Scientific or Technical Awards Committee.

Meetings and demonstrations to evaluate the achievements have been in progress with a final meeting held in December to determine which of the achievements the committee will recommend to the Board of Governors for Awards recognition.

Pursuant to Academy policy, the following list of achievements under consideration is being publicized to permit those with claims of prior art or with devices similar to those under consideration to so advise the Academy:

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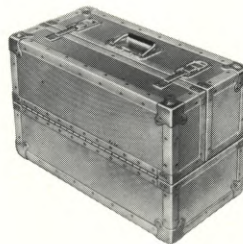
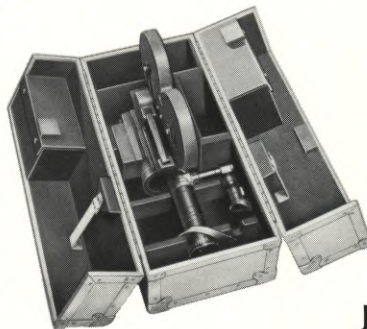
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