American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

JUNE 1974/ONE DOLLAR

The CSC Reflex II

The most versatile reflex BNC in the world!

Cooke lenses:

Now you have a lens choice! Ours is the only reflex BNC engineered to accept Cooke lenses. Cookes are better—much better. But don't just take our word for it. We had an independent firm test a set of Cooke lenses and compare them with the more commonly used BNC lenses. The most modern, sophisticated, optical testing instrumentation was used. The conclusion: Cookes are best. If you would like a copy of the complete lens test report, send us a self-addressed envelope.

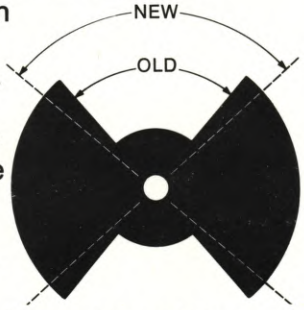
Ultra wide angle:

Do you use a second camera for your dramatic wide angle shots? No need to now. The Reflex II will accept lenses as short as 9.8mm—Yes—9.8mm! Look at the exclusive creative edge you get with the Reflex II—

Now you have a choice.										
9.8 mm	14.5 mm	15 mm	18 mm	20 mm	25 mm	32 mm	40 mm	50 mm	75 mm	100 & up mm

New shutter:

To further boost lens performance, we've made an ingenious design change that permits the use of a new 200° shutter. The big advantage, of course, is the raised light transmission factor. More light means smaller apertures for increased overall sharpness, depth of field and brilliance.



Our new BNC Reflex IIs are immediately available. Call or write for details—today.

SUSTAINING SMPTE MEMBER

ASSOCIATE MEMBER FILM PRODUCERS ASSOCIATION OF NEW YORK

CSC

camera service center, inc.

sales affiliate • CAMERA SALES CENTER CORPORATION

625 WEST 54th STREET • NEW YORK, N.Y. 10019 • 212 757-0906

TO IMPROVE NEW YORK FILMMAKING, YOU'VE GOT TO HAVE 'VISION.

Panavision. Once you've said it, you've said it all in 35mm. Cameras. Lenses. Systems. The works.

Starting with the new ultra-versatile, self blimped Panaflex.® A camera so advanced, it's a generation ahead of its time. A camera so light and natural to use, you'll have trouble remembering it's a "35," and it's studio silent!

Or PSR: the world's most wanted studio camera that has set a new standard in professional filmmaking for silence, reliability and versatility.

Like Panavision® cameras, Panavision lenses have rapidly become the industry's standard, their quality and versatility is world famous with exotic new additions appearing regularly.

Let us show you more about Panavision. As the exclusive East Coast Panavision distributor, we invite you to visit our camera department and see why so many motion picture credits say: "filmed in Panavision."

gc general camera corporation

471 Eleventh Avenue, New York, N.Y. 10018 (212) 594-8700

"My competition is starting to notice me."

When I opened Mobius Cine almost two years ago, I received six good luck cards and one potted plant from my competitors.

I've since lost the cards, the plant died, and my competitors treat me like a bad rash.

I can't say that I blame them.

With me around, the competition has had to take a long hard look at their pricing structures on motion picture equipment. My prices are rocking the boat.

They've also discovered that expedience is no substitute for selling the right equipment for the right job. I don't look at customers with dollar signs in my eyes. Now *they* won't be able to, either.

It seems that the more customers who get comfortable with the way I do business, the more uncomfortable my competitors get. So if you're a legitimate competitor, I'll be happy to send you a Sy Cane dart board (at cost, of course). It'll help you get rid of some tension.

MOBIUS CINE LTD.
565 Fifth Avenue, New York, N.Y. 10017
(212) 697-8620

American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

JUNE, 1974 VOL. 55, NO. 6

Editorial–Advertising–Business Offices
1782 North Orange Drive
Hollywood, Calif. 90028
(213) 876-5080

• FEATURE ARTICLES

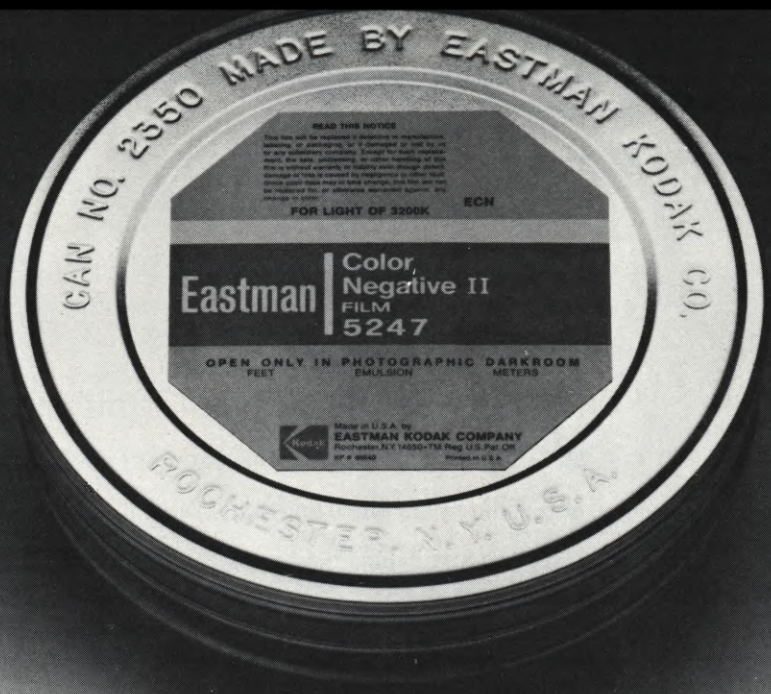
• DEPARTMENTS

ON THE COVER: A wild impression of Hollywood Boulevard during FILMEX, the 1974 Los Angeles International Film Exposition. The artist captures something of the super-enthusiastic, and slightly zany, spirit of this event, which was characterized this year by a record attendance of worshipful film buffs. Cover design by DAN PERRI. Illustration for *American Cinematographer* by DAVID McMACKEN.

The American Society of Cinematographers is not a labor union nor a guild, but is an educational, cultural and professional organization. Membership is by invitation to those who are actively engaged as Directors of Photography and have demonstrated outstanding ability. Not all cinematographers can place the initials A.S.C. after their names. A.S.C. membership has become one of the highest honors that can be bestowed upon a professional cinematographer, a mark of prestige and distinction.

AMERICAN CINEMATOGRAPHER, established 1920, in 55th 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. $9.00: Canada, foreign, including Pan-American Union, $10.00 a year (remit International Money Order or other exchange payable in U.S.). **ADVERTISING:** rate card on request to Hollywood office. **CHANGE OF ADDRESS:** notify Hollywood office promptly.

Second-class postage paid at Los Angeles, California.



They make film. We make processors.

Making film is what Kodak® does best. Making processors is what we do best. And we've been doing it since the 1930's.

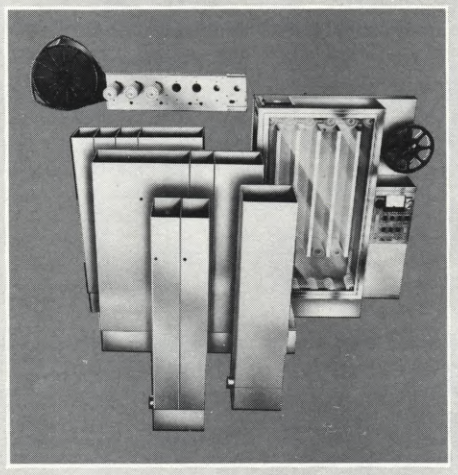
So, if you've been worried about getting a processor for Color Negative II that doesn't have all the bugs worked out, relax.

Our new Houston Fearless Advanced Colormaster processors for ECN II contain components that have been *field tested for years.*

This is possible because of our unique modular construction concept. We use the same tried and true components in our Advanced Colormaster processors for ECN II as we do in our Advanced Colormaster processors for color positive, reversal, and intermediate films, and Advanced Labmaster processors for black and white motion picture film and microfilm.

Only the *arrangement* of components is different.

And the result is a tailor-made processor with a *proven track record.*



Obviously, the use of common components also means you won't have a problem getting parts in years to come, whether you order a standard or custom design.

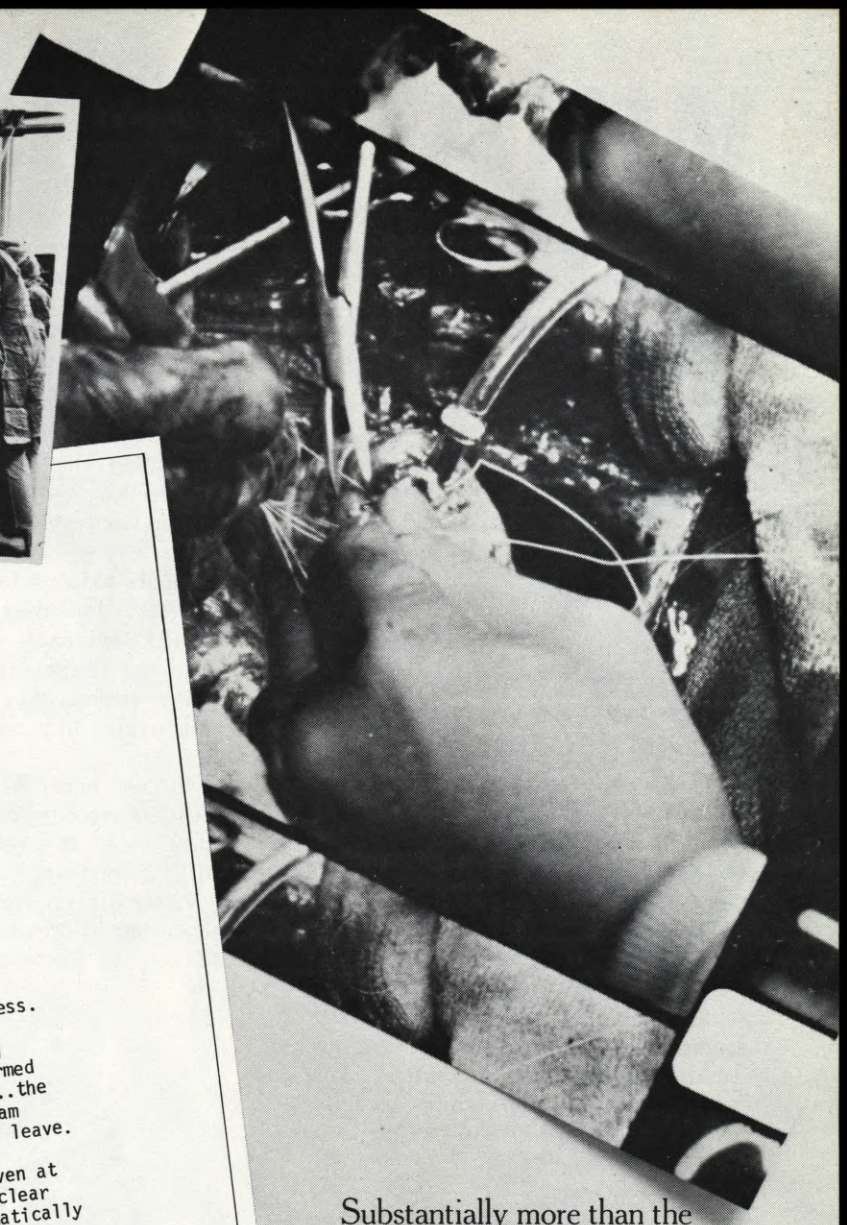
Find out more about our off-the-shelf custom designs, quality stainless steel construction, Central Diagnostic Service Center and nationwide sales and service organization. Contact Marketing Department, Technology, Incorporated, 11801 West Olympic Boulevard, Los Angeles, Calif. 90064. Telephone: (213) 272-4331.

Advanced Colormaster

Houston Fearless® PROCESSORS

TI™

Technology Incorporated



OMEGA PRODUCTIONS

March 11
1 9 7 4

Mr. Eric Falkenberg
Eclair Corporation of America
62 West 45th Street
New York, New York 10036

Dear Eric:

Here are the glossies I spoke to you about. I think the still shot of the operating room conveys a nice sense of surgery's inherent drama, while also demonstrating the ACL's unobtrusiveness.

As for the frame blowup...I think it speaks for itself. During the surgical procedure...a triple coronary artery bypass performed by Dr. Donald Kahn and his team of cardiosurgical specialists...the patient was critical at several points. Had our production team not been virtually invisible, I'm sure we'd have been asked to leave.

Omega cameramen were able to move about and shoot at will...even at times, from the anesthesiologist's position, which gave us a clear shot into the chest cavity where the patient's heart lay dramatically exposed.

We exposed nearly 3000 feet of film silently, quickly...invisibly. I think it's fair to say that the mobility and low sound level of the ACL made our assignment a total success. A lesser camera might have caused us to scrap the whole project.

Cordially,
OMEGA PRODUCTIONS INCORPORATED

Ervin Penkalski
President

EP:mk

OMEGA PRODUCTIONS, INC. 711 WEST CAPITOL DRIVE MILWAUKEE, WISCONSIN 53212 PHONE: (414) 374-7900

Substantially more than the success of a production hung on the silence of Omega Productions' ACL as they filmed a triple coronary artery bypass. How well Eclair repaid that trust is shown in Irv Penkalski's letter.

Just what ACL's unique combination of qualities means in terms of your particular shooting style, assignments and special requirements, only you can determine. Our straightforward, "no-nonsense" brochure will help. Call or write: Eclair Corporation, 62 West 45th Street, New York 10036 (212) 869-0490. 7262 Melrose Avenue, Los Angeles, Calif. 90046 (213) 933-7182. Better still, visit your Eclair dealer and ask to see the ACL.

at the threshold of life **eclair**

WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE

NEW ARRIFLEX 8V/12V DURO-PACK BATTERY

The Arriflex Company has announced a new 8-volt/12-volt Duro-Pack, Nickel-Cadmium Battery that will drive all Arriflex 16S & 16M cameras, and Arriflex 16BL & 35BL cameras.

The new Duro-Pack will do all that because of its dual voltage output. The required 8-volt, or 12-volt output is selected automatically by means of the special wiring in the five-pin power cables of the respective cameras. The new Duro-Pack has a nominal capacity of 2 AH; it will drive Arriflex cameras with 400 ft. magazines at 70°F, approximately as follows:

Arri 16S and 16M Cameras	— 1200 ft.
Arri 16BL	— 1800 ft.
Arri 35BL Cameras	— 1500 ft.

The new Duro-Pack is recharged in 12 hours or less by means of its own, external miniature charger, from regular 120V, 60 Hz, AC powerlines. The Battery is "jacket-pocket" size, about 6½" X 4½" X 1¼" and weighs only 33 ozs. The new Duro-Pack is ideal for multi-camera users: 8-volt and 12-volt output means minimum inventory and maximum utility. Duro-Pack Batteries and further information are available from all authorized Arriflex Dealers or from Arriflex Company of America, Box #1050, Woodside, N.Y., 11377. The new Duro-Pack Battery, complete with separate Charger is priced at $196.00.

•

SUPER-8 NOW HAS PROFESSIONAL CRYSTAL SYNC

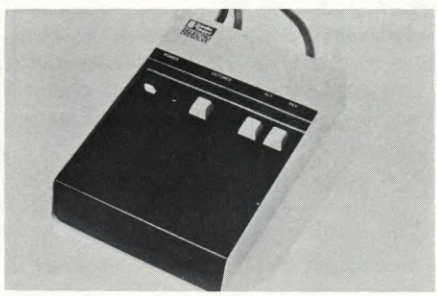
The BEAULIEU Super-8 & 16 cameras can now be operated cordless crystal sync by simply plugging in The UNIVERSAL CRYSTAL SYNC MOTOR CONTROL . . . already a world-proven system with most other professional 16mm and 35mm cameras. (No modification necessary.)

This brings a whole new capability to Film Teaching Departments, as their students can now learn on 8mm film the identical double-system sound recording techniques they will be using later when they graduate to larger-format film. The same Crystal Unit they use on their BEAULIEU 8mm camera will then plug right into the 16mm Arriflex, or whatever other camera they may use for their graduation film and then professional careers.

To further hold down costs, The UHER 4000 recorder can have crystal capability added at a new low cost by Mineroff Electronics, 946 Downing Road, Valley Stream, New York 11580.

For further information phone 201-766-4012 . . . or West Coast office 213-846-7740.

•



SPINDLER & SAUPPE ANNOUNCES TWO NEW SELECTRO DISSOLVE MODELS

Spindler & Sauppe has introduced two new versions of its dual-speed Selectro Dissolve control. Model 731 is now available to perform with Kodak Carousel and Ektagraphic projectors modified to use up to 1200-watt lamps. Also, Model 73F has been released for use with the German-made Kodak Carousel S-AV Series projectors which are designed to operate at any voltage from 110 to 250 volts, 50/60 Hz. The 73F's DIN-type remote control receptacle accepts the standard S-AV remote controller.

The Selectro Dissolve brings to slide shows a variety of easily controlled dissolve effects at low cost. and offers pushbutton capabilities for fast "cut" dissolves, medium-speed dissolves and "alternate" effects. The two dissolve speeds may be automated by using any programmer and most synchronizers. The unit features a life-extending glow circuit for projector lamps, a ready light to aid in pacing presentations, and a reverse button for backing up both projectors simultaneously. Reliability and performance are enhanced by integrated-circuit electronics and heavy-duty metal construction.

Complete information is available from S&S audio-visual dealers, here and abroad, or from Spindler & Sauppe, Inc., 13034 Saticoy St., North Hollywood, CA 91605, U.S.A.; telephone (213) 764-1800; Telex: SPINSAUPPE LSA 651306.

•

BRAUN NORTH AMERICA HAS NEW SUPER-8 SOUND MOVIE SERVICE FOR NIZO CAMERAS

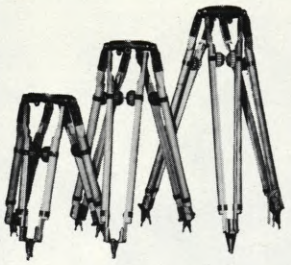
Braun North America, exclusive U.S. marketing organization for the Braun Nizo line of Super-8 movie cameras, announces the availability of a conversion service on all current Braun Nizo Super-8 cameras to readily accept the Optasound synchronized sound system in a direct simple plug-in mode.

Martin Parker, Product Manager, Braun North America, A Division of The Gillette Company, observes that one major benefit to the consumer is that Braun performed conversion does not disturb the important extended two year warranty that Braun North America provides on its Nizo cameras. The suggested list price of the service is $29.95.

All new or recently purchased Braun Nizo models S800, S560 and S480 can be sent through local dealers or directly to Dept. OS Braun North America at 55 Cambridge Parkway, Cambridge, Massachusetts 02142, for immediate conversion service.

The Optasound system will automatically interlock with the Braun Nizo cameras providing lip-sync sound for filming and editing. The system can be used at filming speeds of either 18 or 24 frames per second and is fully editable.

Tom Leddy, National Sales Manager for Braun North America adds, "The Optasound conversion service, added to the already existing sound sync pulse system in the Braun Nizo cameras, offers the consumer still another option that the serious film-maker must consider for the highest quality available in Super-8 today. The professional double sound system available in fully editable form at an extremely modest price will now be available to the general public."



Mitchell Type Tripods

Heavy-duty wood tripods constructed of seasoned hardwood and reinforced with steel plates. Top casting accepts standard Mitchell friction heads and heavy-duty O'Connor and Miller fluid heads.

Regular Size (44″x66″) ... **$195.00**
Baby Size (26½″x34½″) .. **$195.00**
Sawed-Off Size (37″x57″) . **$195.00**

Pro Jr. Type Tripods

Traditional medium weight hardwood constructed tripods. Available with flat-top plate or ball socket top casting for easy leveling. Ideally used with Pro Jr. friction head, O'Connor Models C and 50, Miller Model F with adapter plate and "Pro" model.

Regular Size (39″x67″) ... **$125.00** (with flat top plate)
Baby Size (18″x26″) ..... **$125.00** (with flat top plate)
(Same as above but with ball socket top casting ..... $125.00 each)

Foba Tripod

Professional medium weight tripod with Pro Jr. flat-top plate. All metal construction. Unique patented adjustable legs allow tripod to be used in baby or standard positions. Complete with triangle-type leg locks and elevating riser plate.

$315.00

SUPPORT YOUR LOCAL CAMERA!

Miller Flat Hat

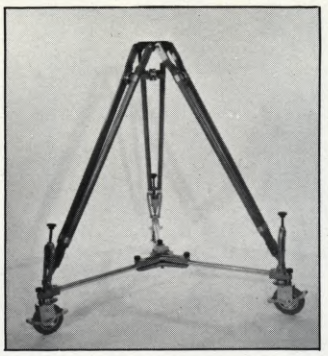
Lower, more versatile than Hi-Hat. Adjustable legs, suction cup grips. Aluminum plate construction, weighs only 3 lbs. For use w/Miller heads, also smaller heads. (Price is less head.)

D or F **$54.50**
Pro **$69.50**

Tripod Triangle with Tie Downs

Prevents tripod legs from spreading. Easily clamps to tripod points. Durable extruded aluminum adjustable channels assure ease of operation and long life. Collapsible for easy storage.

(With springs ...$79.50) **$54.50**



Collapsible Three-Wheel Dolly

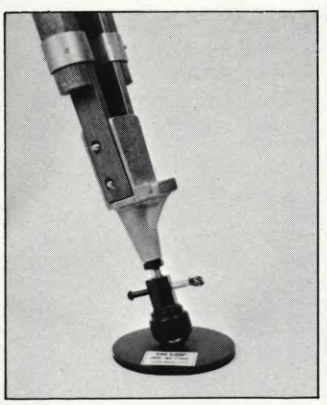
Versatile, maneuverable camera transport. Holds up to 200 pounds. Designed for use with Pro Sr. or Mitchell-type tripods. Features 5-inch hard rubber wobble-free wheels with independent locks, 3-position directional locks for accurate dolly tracking.

$180.00

Tripods Tie Downs

Secure tripods to platform tops. Assure rigid locking of tripod legs when permanently mounted. Ideally suited for camera carts and car-top platforms.

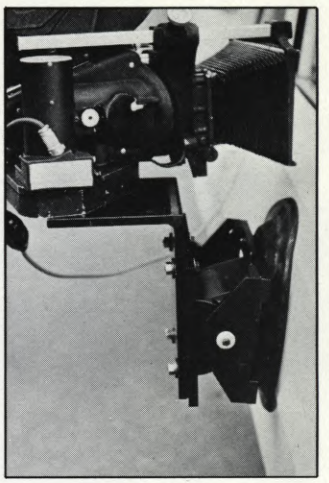
Set of Three **$33.95**



Tri-Grips

Easily attach to all steel tripod points. Prevent tripod leg slippage, protect floor surfaces. Rugged steel construction, self-level by the use of a universal ball joint.

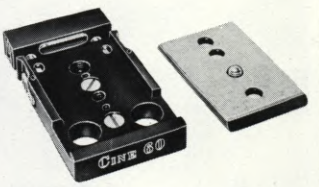
Set of Three **$24.95**



Super Grip

More than just a giant vacuum cup, this new camera mount attaches to almost any curved, irregular or flat surface in a horizontal, vertical or in-between position. A strong and efficient means of mounting cameras or lights.

$325.00



Snap Lock

Designed to secure to top of tripod heads. Permits quick release of camera from tripod. One section mounts to the base of the camera, the other to tripod head. A single push button instantly separates the two.

$92.75

Additional Base Plates ..... **$16.75** each

Hi-Hat

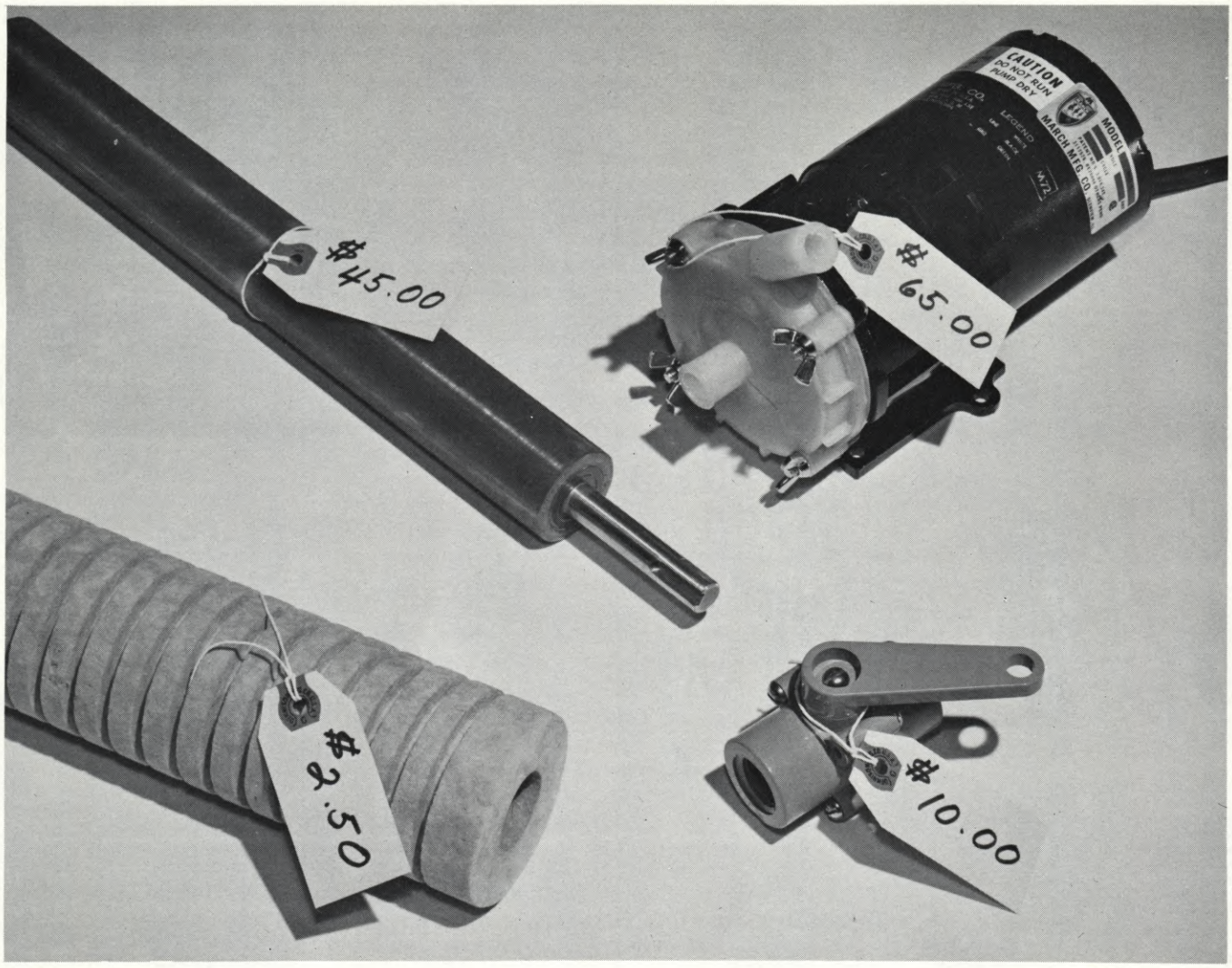
Traditional accessory for mounting camera low to the ground. Heavy-duty aluminum construction. Top casting machined for Pro Jr. or Mitchell-type tripod heads.

Pro Jr. Type **$35.00**
Mitchell-Type **$35.00**

Kenyon Gyro Stabilizer

Compact gyroscopic instrument designed to eliminate movement that results from hand-holding cameras. Lightweight, easy to mount on bottom of camera, operates from portable battery pack.

Write for Prices



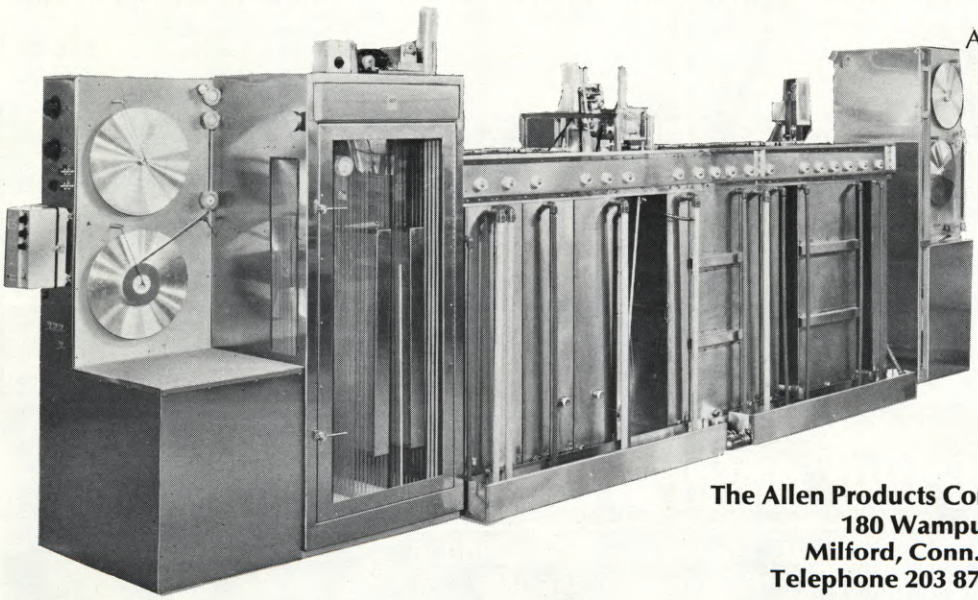
COMPARE OUR PRICES

When you buy a replacement part from AP, you pay a fair, realistic price. A factor to consider when selecting a color film processor. What's more, our machines offer you advanced technology engineered into each processor, resulting in the need for fewer replacement parts. Just one reason why AP processors have earned a reputation for durability.

Constructed from rugged stainless steel, AP color film processors are designed and built to give years of dependable service. As for the photographic processing quality — it can't be beat.

AP color processors are available in 19 different models, many of which can be modified for multi-format operation. We can also build processors to your exact specifications.

To find out more about our prices and how we back our machines, send for literature or talk to an Allen Products' Rep.



The Allen Products Company
180 Wampus Lane
Milford, Conn. 06460
Telephone 203 874 2563

ARRIVOX-TANDBERG
professional tape-recorder

DELUXE SOUND AT A BUDGET PRICE . . . that, in short, is what the new Arrivox-Tandberg recorder is all about.

Arriflex and Tandberg pooled their know-how and experience for the design of this new ¼" professional tape-recorder which satisfies the highest demands for quality and performance at a price every filmmaker can afford. The Arrivox-Tandberg recorder offers features and performance found only in professional tape-recorders costing up to twice as much. Some of its standard built-in features are costly accessories on other machines.

Built into a sturdy lightweight magnesium casting, the Arrivox-Tandberg utilizes state-of-the-art, plug-in electronic boards for reliable, low service operation. A close loop servo-drive motor assures highest speed accuracy. All front panel controls and straight line tape threading provide convenient and easy operation. For tape to film synchronization, the Arrivox-Tandberg is fully equipped for the standard pilotone system. Some of the Arrivox-Tandberg exclusives are: built-in pre-amplifiers for dynamic microphones; built-in power supplies for condenser microphones, switchable from the control panel; completely encased and protected tape-drive and head assembly; and a forward/reverse footage counter. Optional accessories such as a plug-in resolver module, studio synchronizer, AC converter and remote control cable, further enhance its versatility.

The Arrivox-Tandberg is a non-compromising, professional ¼" tape-recorder designed especially for the motion picture industry. It provides filmmakers with the ideal sound package in quality, compactness and lightweight, at a low price.

SPECIFICATIONS:

Measurements: 13" x 4" x 10" **Weight** (less batteries): 10.5 lbs. **Reel Diameter:** 5" reels with cover closed 7" reels with cover open **Tape speeds:** 7½ ips and 3¾ ips **Wow and flutter:** .1% for 7½ ips; .2% for 3¾ ips **Temperature range:** —4°F to +140°F (—2°C to + 60°C) **Inputs:** Two balanced microphone inputs for dynamic microphone, 50 to 200 Ohm impedance, switchable to built-in power supplies for condenser microphones. One line input with control range from .775 to 7.5 V. Each input has separate gain controls and individual, switchable automatic limiters.

(Detailed technical specifications are available upon request. All specifications subject to change without notice)

deluxe sound at a budget price!

ARRI

ARRIFLEX COMPANY OF AMERICA

P.O. Box 1050, Woodside, N.Y. 11377 • 1011 Chestnut Street, Burbank, Calif. 91502

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 I have shot a feature length film with some friends in 16mm and then blown it to 35mm. The film we used in 16mm was Kodachrome II. This was then blown up to Eastmancolor 5254 negative. There is a tremendous amount of contrast in the final blow up, could you please tell me how we could control this. The labs here won't pre-fog the film or help in any other way but the traditional system they have. We must somehow manage to control contrast in 16mm Kodachrome II film. I would appreciate it very much if you could suggest some solutions for this.

Somehow this contrast has leant itself to the film subject but we know we cannot do this all the time.

A Sid Solow of Consolidated Film Industries writes:

You are correct in ascribing your problem to the use of Kodachrome II. This material has contrast and color characteristics that make it excellent for projection but completely unsuitable for blow-up or other forms of reproduction.

Perhaps you could resort to one or more of the following suggestions:

1. Perhaps you could improve the blow-up quality of Kodachrome II by experiment, if you could learn to flash it yourself prior to development in your camera by shooting a uniformly illuminated grey card with appropriate filters. When properly done, this will give you a reversal original of reduced contrast gradient and density range.

2. Shoot 16mm color negative, make an intermediate EK 7253, and enlarge to 35mm 5253.

3. Use EK 5271 for your blow-up from Kodachrome II. It is finer grained and is lower in contrast than 5254. It may be developed in the ordinary EK color positive developing bath. Its only drawback is that it has a very low Exposure Index, but it may be possible to get enough exposure for it by running the blow-up printer very slowly.

4. Buy and shoot ECO and try to obtain authorization to send it out of the country for processing with the provision that it be returned without printing. You could then make B&W 16mm dailies for your work print using EK Type 7360. This is a direct positive (self-reversing) B&W film that is processed in an ordinary B&W positive developing bath.

5. You state that the labs won't do flashing to reduce contrast. Flashing your blow-up negative might help. Despite your feeling that the labs won't do flashing, it is probably more a question of economics rather than technology. Perhaps offering to pay for the necessary experiments, the flashing itself, and a fair profit would overcome their objections.

6. There is a remote chance that you might be able to make a 16mm B&W contrast mask made with a red filter from the original. This must be printed by contact in a step printer to insure registration. The mask should be of extremely low density and should be developed to a gamma of 0.3. This must be registered with the original while making the blow-up.

7. Despite the higher raw stock price, perhaps your best solution is to shoot in 35mm. The cost could conceivably be kept to a minimum by careful pre-editing of your script and by adequate rehearsal of your cast, avoiding the usual multiplicity of takes.

Q When photographing with my 16mm camera at four or five frames per second speed, resultant pictures are somewhat unsteady and flicker on the screen. I have had the same results when shooting single-frame exposures. How can this difficulty be avoided?

A An animation motor will solve your problem. It is made to operate more steadily at slow shutter speeds than ordinary camera motors. ■

Canon's super cameras for Super 8.

Here they are. The cameras that do everything you ever dreamed a Super 8 could do. And do it with such smoothness, reliability and versatility that film-making becomes literally a matter of mind over machine.

Let your imagination roam, your Canon Super 8 will follow it with a new sense of freedom and innovation that could only come from the world's largest manufacturer of fine cameras.

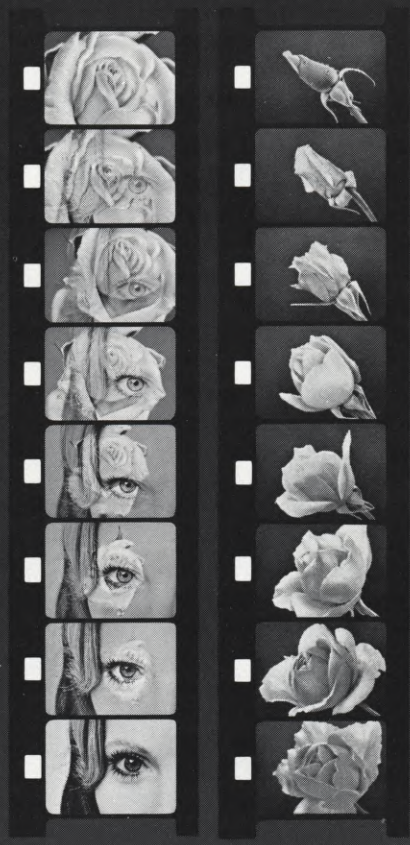
Canon Auto Zoom 1014 Electronic

Now you can get the spectacular effects other cameras denied you. Canon's newest Super 8, the 1014—with ten times zooming ratio—lets you glide effortlessly from 7.0 to 70mm either automatically or manually.

With variable shutter control you can make perfectly matched lap dissolves, superimposed images, fade-outs and fade-ins. Even animation is possible because the 1014 gives you filming speeds from instant slow-motion to single frame with synchronized flash.

Time lapse is also possible with the Interval Timer E. Or if you want to get into the picture yourself, there's the Self Timer E for delayed action filming.

In a Canon camera you'd naturally expect a superb lens. That it is. The 1014 gives you a fast f:1.4 lens with built-in macro capability. So you can shoot as close as 3/8 of an inch from the front of the lens.



Viewing is through-the-lens, and focusing is via split-image rangefinder, with an accuracy you'd expect from the maker of one of the most prized professional SLR cameras. And with automatic servo exposure control, the camera sets the aperture for you. So you can concentrate on the shot instead of the light.

The Canon 1014. It can give the larger formats a run for their money.

Canon Auto Zoom 814 Electronic

This is the camera from which the 1014 was born. And it's hard to find more distinguished parentage. The Canon 814 with eight times zooming ratio (7.5 to 60mm) has proven itself time and again as one of the most versatile, most reliable Super 8s available.

Since it's not mass-produced, it's not for everyone. Only those who want the best. A lucky few. But that doesn't mean anyone can't operate it.

The 814 gives you the same automatic exposure accuracy with servo electric-eye metering, the same automatic fade-out, fade-in capability as the 1014. Along with shutter speeds from instant slow-motion to single frame with synched flash, remote control and super close-up macro without attachments.

For more information about these and Canon's other fine movie cameras, see your photo dealer. Or write to us—Canon USA, Dept. AC-5

Canon®

Canon USA, Inc., 10 Nevada Drive, Lake Success, New York 11040
Canon USA, Inc., 457 Fullerton Avenue, Elmhurst, Illinois 60126
Canon USA, Inc., 123 East Paularino Avenue, Costa Mesa, California 92626
Canon Optics & Business Machines Canada, Ltd., Ontario

U.S. Patent #3,204,031 to be exact. It's our revolutionary "two-way" cardioid dynamic microphone. Only we have it. And it's available especially for the cinematographer as the AKG D-202E.

Before our "two-way" development, whenever one end of the frequency range was expanded the other end lost. And there was often trouble in-between.

The solution our people came up with was so simple it was beautiful. Build two microphone elements in the same housing. One for highs. One for lows. Phase them together with an integral crossover network and you've expanded your range without any strain—anywhere. Sound familiar? It's the same principle behind a modern speaker system—only backwards.

On the sound stage or out on location, you have the range you need. Plus a completely flat response over the entire audio spectrum and natural reproduction up to 90° of the microphone axis. Plus no "booming" proximity effect and virtually no feedback problem.

There are other AKG "two-way" mikes, plus boom mounts, stands and adaptors. And a full line of other AKG mikes including dynamic and condenser shotguns. And an entire range of accessories. AKG mikes make every word uttered on your set easily sound even truer to life.

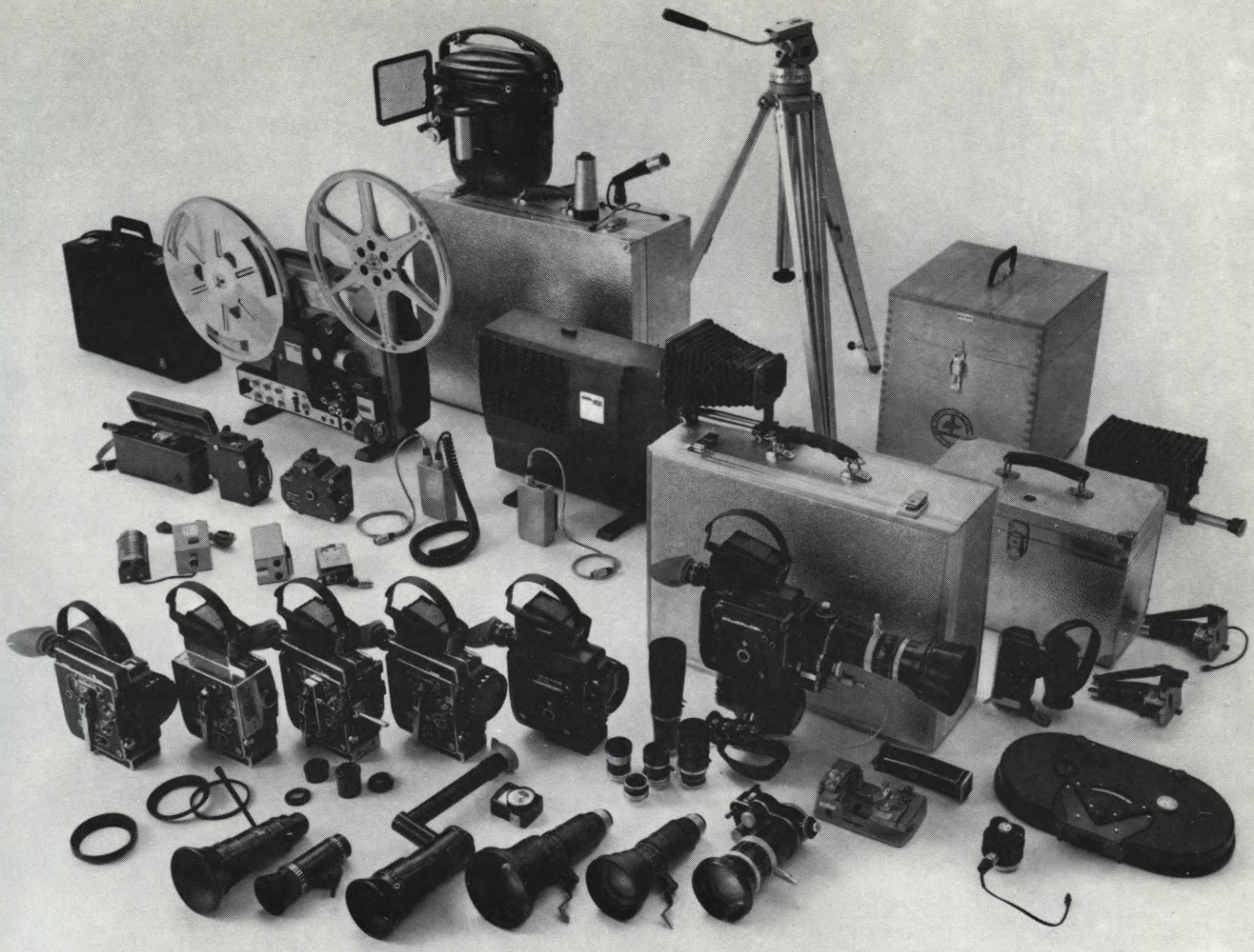
Speak to your professional equipment supplier. Or write to us for complete details.

AKG MICROPHONES • HEADPHONES

Distributed by
NORTH AMERICAN PHILIPS CORPORATION
100 East 42 St., New York, N.Y. 10017

AKG

We patented a way to make your cinema sound a little more verité.



THE WHOLE SHOOTING MATCH.

Maybe you're shooting documentaries. Or features. TV news. Or commercials (live or animated); travelogues; sports; wildlife; educational films; macrocinephotography or cinephotomicrography, you name it. Bolex can provide you with exactly the right camera body, lenses and accessories to assure you'll have just what you need when you need it. (And at prices that may surprise you with their economy.)

The cameras: You get to choose from five rugged camera bodies designed for hand held or tripod use. With either three-lens turret or bayonet mount, with spring motor or electric drive, with 100′ to 400′ film capacity, for silent filming or sync sound with sync pulse generator or crystal. And that's just the beginning.

Consider features like: automatic threading, flickerless reflex viewing and focusing with complete depth of field control, a filter slot behind the lens, single-frame counter, unlimited film rewind, variable speeds for accelerated and slowmotion filming, single frame filming, variable shutter with automatic control possibility, registration claw for total accuracy in picture steadiness even when films are blown up to 35mm.

The lenses: With the Bolex system, you can choose from 7 fixed focal length lenses, ranging all the way from 10mm super wide angle to long 150mm telephoto. And they all have built in macro focusing, automatic depth of field scales and diaphragm presetting so you can step down the aperture without taking your eye off the reflex finder. You can choose a lens as fast as f/1.1, or one that can focus down to one inch without accessories.

The system offers you seven zoom lenses with zoom ranges from 5:1 to 10:1. One of those is the Vario Switar 100 POE-4 with built-in power zoom, automatic light measuring through the lens, focusing as close as four feet and picture sharpness equal to any good fixed focal length lens.

The works: You can extend your basic equipment almost indefinitely with a wide range of accessories.

For instance: if you choose a spring-wound camera, you can automate easily with any one of three auxiliary motor drives, for time-lapse or animation, for variable speed shooting or for filming with sync pulse generator or crystal. The system offers you tripod; monopod; camera grips; blimps; an automatic fading device; cable releases; matte boxes (complete with masks); an underwater housing; attachable exposure meter; 400′ magazine; closeup lenses; extension tubes; optical magnetic sound projector.

It's quite a list. But that isn't all. The full story of Bolex's whole shooting match fills a 32 page book. Which we'll be happy to send you. Just write to Paillard Incorporated, 1900 Lower Road, Linden, N.J. 07036. You'll get a very professional response. Other products: Hasselblad cameras and accessories.

BOLEX 16
PAILLARD

CINEMA WORKSHOP

By ANTON WILSON

ELECTRIC CURRENTS IN FOREIGN COUNTRIES

Location shooting is the new name of the game and crews find themselves hopping from one country to another. Foreign travel can cause many problems for a film crew. In addition to frequent trips to the bathroom, the crew will also have to make several trips to the local hardware or electrical store to obtain various adaptor plugs and step-down/up transformers. There is a wide variety of electrical currents in use throughout the world; if you plug into the wrong type you may destroy or damage some expensive equipment, or be out of sync.

One should first be aware of the various ways in which electrical currents can differ. The most basic difference is the type of current: Alternating Current (A.C.) or Direct Current (D.C.). Almost all countries are now A.C., which is good, since most electrical devices are designed for A.C. operation. There are a handful of cities around the world that still offer D.C. However, this is almost always in conjunction with A.C. service and the two types are usually clearly marked.

Once it has been established that current is A.C., the frequency of the current must be determined. There are two frequencies in common use, 50Hz, (Fifty Hertz) and 60 Hz (Sixty Hertz). The 60Hz frequency is used in North America and parts of Central and South America. It is also used in Taiwan and can be found in some other countries, along with 50Hz. The 50Hz frequency is used in most other parts of the world (Europe, Asia, etc.).

The difference between 50Hz and 60Hz will have little effect on most applications, with the exception of sync motors and resolving systems. A sync motor relies on the frequency of the A.C. power for its speed accuracy. If a 60Hz sync motor is plugged into a 50Hz line, the motor will run 1/6 or about 17% slow, no matter what the voltage is. Likewise, a 50Hz motor plugged into a 60Hz line will run 20% fast, even at the proper voltage. If a pilotone system is employed, using sync motors and taking the pilot frequency from the mains, the track must be transferred (resolved)

Continued on Page 737

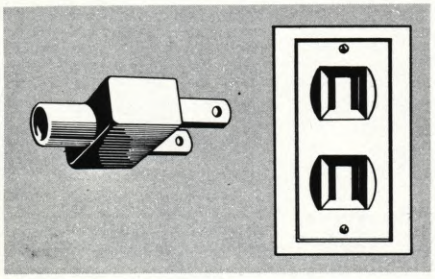
FIGURE 2

I.	**Countries with 60Hz and 110 to 127 volts.**			
	Bahamas	B	El Salvador	A
	Bermuda	A	Guatemala	A
	Canada	A	Mexico	A
	Colombia*	A	Nicaragua*	A
	Costa Rica	A	Panama	A
	Dominican Rep.	A	Taiwan	A
	Equador	A	Venezuela*	A
II.	**Countries with 50Hz and a variety of voltages. (A voltmeter should be employed)**			
	Algeria	B	Luxembourg	B
	Belgium	B	Poland	B
	France	B	Spain*	B
	Greece*	B	Sweden	B
	Libya*	B	Tunisia	B
III.	**Countries with 50Hz and 230 volts.**			
	Argentina	B	Netherlands	B
	Australia	Special	Niger*	B
	Austria	B	Nigeria	C
	Britain	B	Norway	B
	Bulgaria	B	Pakistan*	B
	Chile	B	Paraguay*	B
	Czechoslovakia	B	Portugal	B
	Denmark	B	Rhodesia	B
	Ethiopia	B	Romania*	B
	Germany	B	Saudi Arabia*	A and B
	Ghana*	B	South Africa	B
	Hungary	B	Sudan	B
	Iceland	B	Switzerland	B
	India	B	Thailand	B
	Iran*	B	Turkey	B
	Iraq	B	Uganda	B
	Israel	A	United Arab Rep.	B
	Italy	B	Uruguay	B
	Jordan	B	Yemen*	B
	Kenya	A	Yugoslavia	B
IV.	**Countries with 50Hz and 120 volts.**			
	Indonesia*	B	U.S.S.R	B
	Lebanon*	B	Viet Nam*	—
	Syria*	B		

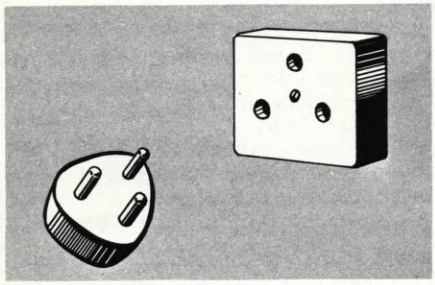
Exceptions:
Japan A-100 volts frequency may be 60 or 50.
Korea* A-100 volts 60Hz
Hong Kong B and C-200 volts 50Hz
Brazil* B—voltage may be anything—frequency can be 50Hz or 60Hz

FIGURE 1—TYPES OF ELECTRIC PLUGS IN DOMESTIC AND COMMERCIAL USE

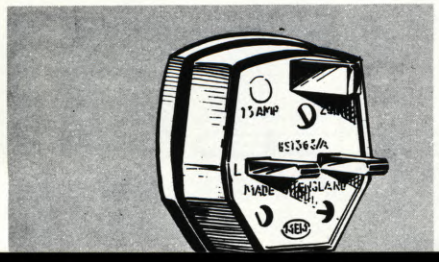
TYPE A—FLAT BLADE ATTACHMENT PLUG



TYPE B—ROUND PIN ATTACHMENT PLUG



TYPE C—SQUARE PIN ATTACHMENT PLUG



NEW

FROM

Gordon Yoder, Inc.

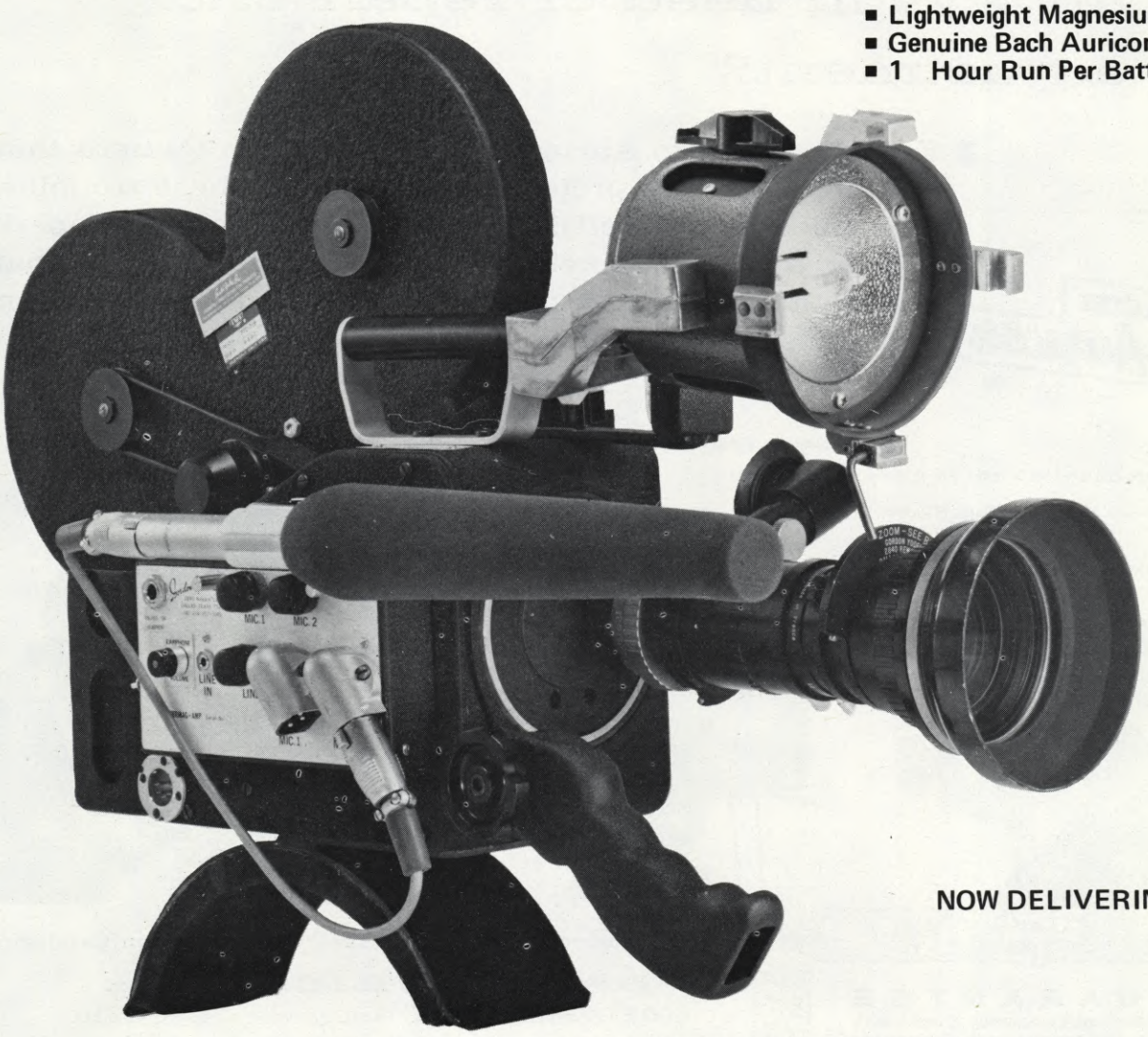
Formerly
Professional Cine Products, Inc.

PROFESSIONAL MOTION PICTURE EQUIPMENT & SUPPLIES

YODER CRYSTAL 16

NEWS AND DOCUMENTARY FILM CAMERA
FOR SINGLE AND DOUBLE SYSTEM

- Lightweight Magnesium Body
- Genuine Bach Auricon Movement
- 1 Hour Run Per Battery Charge



NOW DELIVERING

WRITE OR CALL FOR FURTHER INFORMATION

2840 REWARD LANE, DALLAS, TEXAS 75220
Phones (AC 214) 357-3045 or 357-2725

Troubled by out-of-focus pictures?

Troubled by emulsion pile-up in your camera gate?

Troubled by distracting camera noise when shooting subjects who should not be distracted from what they are doing?

Troubled by cameras that are always in need of repair and adjustment?

If so, switch to Auricon, the only 16mm Camera that guarantees you protection against all these troubles, because it is so well designed! The Auricon is a superb picture-taking Camera, yet silent in operation, so that at small extra cost for the Sound Equipment, it can even record Optical or Filmagnetic sound in addition to shooting your professional pictures.

BACH Auricon®

AURICON SUPER-1200, takes 1200 ft. Runs 33 min. $6425.00 & up

AURICON "PRO-600 SPECIAL," takes 400 ft. Runs 11 min. $1620.00 & up

AURICON PRO-600, takes 600 ft. Runs 16½ min. $1820.00 & up

CINE-VOICE II, takes 100 ft. Runs 2¾ min. $1180.00 & up

BACH Auricon

GUARANTEE

All Auricon Equipment is sold with a 30-day money back Guarantee and a 1 year Service Warranty. You must be satisfied!

Write for your free copy of the 74-page Auricon Catalog

BACH AURICON, Inc.

6902 Romaine St., Hollywood 38, Calif.

HOLLYWOOD 2-0931

MANUFACTURERS OF PROFESSIONAL 16MM CAMERAS SINCE 1931

THE BOOKSHELF

By GEORGE L. GEORGE

REFLECTING ON CINEMA

At a time when movie violence is considered less objectionable than explicit sex on screen, a documented and thoughtful book like John Fraser's VIOLENCE IN THE ARTS (Cambridge U. Press $5.95) brings a welcome reassessment of values, as well as an understanding of the basic relationships between violence and thought. While the scope is broader than the motion picture field, the author's conclusions regarding strongarm politics, fascist brutality, intellectual sadism and repressive censorship offer challenging views on an age-old problem.

* * *

U.S. Government production of motion pictures is effectively surveyed by Prof. Richard Dyer MacCann in THE PEOPLE'S FILMS (Hastings House $11.50). His well informed study traces their development from an inauspicious 1908 start through wartime films, postwar documentaries and USIA foreign propaganda shorts, suggesting to Congress a broader use of film as "democracy's public relations" tool.

* * *

Educator James L. Limbacher has compiled a highly useful, comprehensive reference volume, FILM MUSIC: FROM VIOLINS TO VIDEO (Scarecrow Press $18.50). Part One covers the art of composing for films in 52 articles by recognized experts—composers, scholars and critics. Part Two lists all films by title with name of composer and year of release, a cross-indexed list of composers' names and their films, and a list of recorded musical scores. This impressive 835 page volume is a boon to researchers, scholars and production personnel.

* * *

In PIECES OF TIME (Arbor House $7.95), director Peter Bogdanovich has assembled his articles on the movies that appeared in *Esquire* over a period of years. The writing is sensitive and bright, the opinions often controversial, the feeling for film craft genuine. And yet its pervasive flavor is that of contemporary conformism, which emphasizes Bogdanovich's status as possibly the most articulate exponent of the new Hollywood Establishment.

* * *

MOVIES: MYTH AND REALITY

The customary production problems of Paramount's latest blockbuster are described at length in FILMING THE GREAT GATSBY (Berkley $1.25), Bruce Bahrenberg's faithful day-by-day report. The film's shooting pains are all documented in this eventful and lively diary, up to the project's happy ending.

Eileen Landay's BLACK FILM STARS (Drake $7.95) chronicles, with a flair for picturesque detail, the lives and careers and 30 outstanding Negro performers from the movies' early years. This is a well researched and lively book that tells of progress in racial understanding against a backdrop of changing social circumstances.

A superb four-volume narrative of epic proportions, Rachael Low's THE HISTORY OF THE BRITISH FILM from 1896 to 1929 provides an authoritative and scholarly study of a significant contribution to screen art and industry. Prof. Low's familiarity with the subject, her ability as a researcher and organizer of data, her elegant literary style combine to make this exhaustive survey an eminently readable and faultlessly documented reference text. (Bowker Vol. 1 $11.50, Vol. 2 $13.50, Vol. 3 $14.75, Vol. 4 $18.50).

Eve Babitz was born in Hollywood and never got over it, as she admits in her "autobiographical confessional novel," EVE'S HOLLYWOOD (Delacorte $7.95). Coming from a family "involved in the Arts," she trips easily in and out of the movie community, writing with lush exuberance about people she knew and loved or hated. Semi-fictional and semi-documentary, her candid memoir has a strange and appealing quality of a dream blending with a mythlike reality.

* * *

THE CRITICS' TRADE

Historical perspectives of movie-reviewing and its development as an established craft are afforded in THE ORIGINS OF AMERICAN FILM CRITICISM 1909-1939 (Arno Press $24). This doctoral thesis by Myron Osborn Lounsbury is a distinguished and informative work that traces in detail the movies' profound impact on American life and the slow realization of film's emergence as a new art form.

Rewarding to read, this anthology of movie reviews by members of the National Society of Film Critics, FILM 72-73 (Boobs Merrill $8.95/3.95) has been ably edited by David Denby with emphasis on longer, essayistic pieces that offer a broader perspective on the film as a reflection of the our times. Some 90 movies are subjected to perceptive probes by such established reviewers as Vincent Canby *(N.Y. Times)*, Charles Champlin *(L.A. Times)*, Judith Crist *(New York Magazine)*, Jay Cocks *(Time)*, and Molly Haskell *(Village Voice)*.

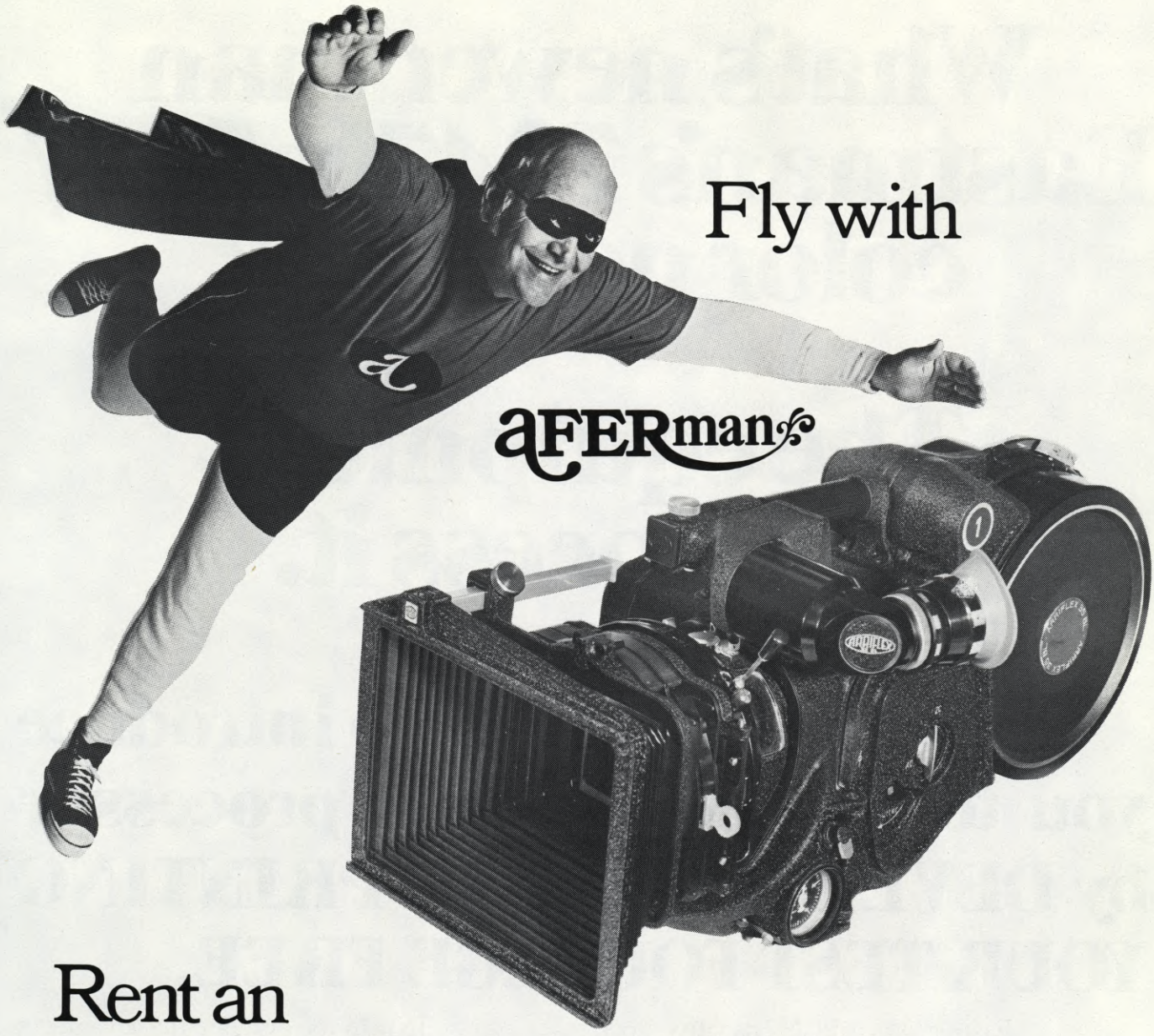
The individualistic approach to film criticism is brought into sharp focus by Philip Nobile, editor of FAVORITE MOVIES (Macmillan $8.95). Well-known reviewers were asked to comment on their preferences, and it is most enlightening to read the refreshingly diverse views of some 30 of your favorite critics.

In FOCUS ON FILM AND THEATRE (Prentice-Hall $7.95/2.95), editor James Hurt has selected comments by a broad array of critics, directors, writers and performers from both media. Their opinions on the differences and similarities between screen and stage probe this competitive relationship in its historic and artistic perspectives. Critics Vachel Lindsay and Stanley Kauffmann, directors von Sternberg and Eisenstein, playwrights Harold Pinter and Peter Handke present often challenging views in the context of their creative activities.

The Hollywood setting of eight popular novels of the 30's provides Walter Wells, in TYCOONS AND LOCUSTS (So. Illinois U. Press $6.95), with a critical basis for a perceptive study of the effect of environment on personality.

In his preface to LOLITA: A SCREENPLAY (McGraw-Hill $7.95), author Vladimir Nabokov calls Stanley Kubrick "a great director" whose *Lolita* is "a first-rate film" adding wistfully that "only ragged odds and ends of my script had been used." Whereupon he presents his original scenario as "a vivacious variant of an old novel," whose main merit is the recherché elegance of its style but which shows no particular improvement over the filmed screenplay.

Michael Crichton's WESTWORLD (Bantam $1.25), the successful MGM production he wrote and directed, is a fine example of a script that is as terse and terrifyingly realistic as the sci-fi movie made from it. Crichton's preface is also a fine example of studio pre-production politics and post-production problems. ■



Rent an ARRI 35 BL

No excess baggage with the 26-pound 35-BL. And to go with it, AFER has a crystal ARRI 35 2C/B, crystal NAGRA's, radio microphones, lights, dollies—an entire schmeer of compact production gear.

Not flying quite so high? AFER has 16mm NPR's, ACL's, CP/16A's, all in crystal sync. And for editing, AFER's Back Room is the best place in Dixie to find a Moviola 6-plate horizontal table for rent.

RENT or BUY from AFERman, the filmperson's champion.

Send $1.00 for a centerfold of AFERman and get AFER's free rental catalog at no charge. AFERman will personally refund two dollars with your first rental or purchase. Art non-lovers may get the catalog only.

AFER

Atlanta Film Equipment Rentals

1848 Briarwood Rd., NE, Atlanta, Ga. 30329

404/633-4101

What's newer than Eastman's 7247 & 5247 color negative?

The equipment to process it.

DuArt would like to introduce you to its new negative processor by DEVELOPING AND PRINTING YOUR TEST FOOTAGE FREE.

Eastman's new ECN2 negative stock ushers in a new era in film making with substantial improvements in quality. It requires new chemistry and new equipment. A very substantial investment on the part of any lab who wants to properly process this new negative stock.

We, and other labs, had to make a choice. Take an old piece of equipment, modify it and/or rebuild it or buy a very expensive piece of new equipment and get everything the new negative is capable of delivering.

To help you evaluate the advantages of this new negative stock and our new processor, we will screen the free workprint with you. By testing and comparing, you'll get a first hand opportunity to see the different and better results. Call Bob Smith at DuArt for complete information.

DU ART
FILM LABORATORIES, INC.

Now in our 52nd Year.
Du Art Film Building 245 W. 55th St., New York, N.Y. 10019 (212) PL 7-4580

DON'T CALL US VIDEO MART. JUST CALL US.

Some of Camera Mart's video people: Jeff Wohl, sales; Bob Deutsch, rentals, and Arthur Rupp, who keeps things running smoothly in service.

Whether you're a video 'vet', or just getting your feet wet, you owe it to yourself to talk to us.

If you know what you want, cassette or reel-to-reel, you'll almost certainly find it in our large stock of the latest cameras, recorders, monitors, control equipment, projectors, tape and special accessories. From Sony, Akai, Sanyo and other major manufacturers. And you'll find it at the price you want to pay.

If you're new to video, all the more reason we can help. With expert advice that 'sees' things from your viewpoint: aesthetically, logistically and economically. We've helped producers, directors and editors. Art directors, copywriters and account executives. Educators. Salespeople. Doctors and lawyers. Industrialists, students and many more. We can help you.

And the help doesn't end once you walk out the door: your equipment's guarantee is backed by our know-how and service. Whether you buy, lease or rent.

If all this starts you calling us Video Mart, we'll understand. And like it. Just so long as you call us.

CAMERA MART

THE CAMERA MART, INC.
456 W. 55th St., New York, 10019 (212) 757-6977
SALES·SERVICE RENTAL

Please send me your Video catalog. AC-6
NAME _____
TITLE _____
FIRM _____
ADDRESS _____
CITY _____
STATE _____ ZIP _____

The Sennheiser MKH 815
Shotgun Condenser Microphone

AFTER WE SAY THIS IS THE INDUSTRY'S MOST WIDELY-USED MICROPHONE, WHAT ELSE CAN WE SAY?

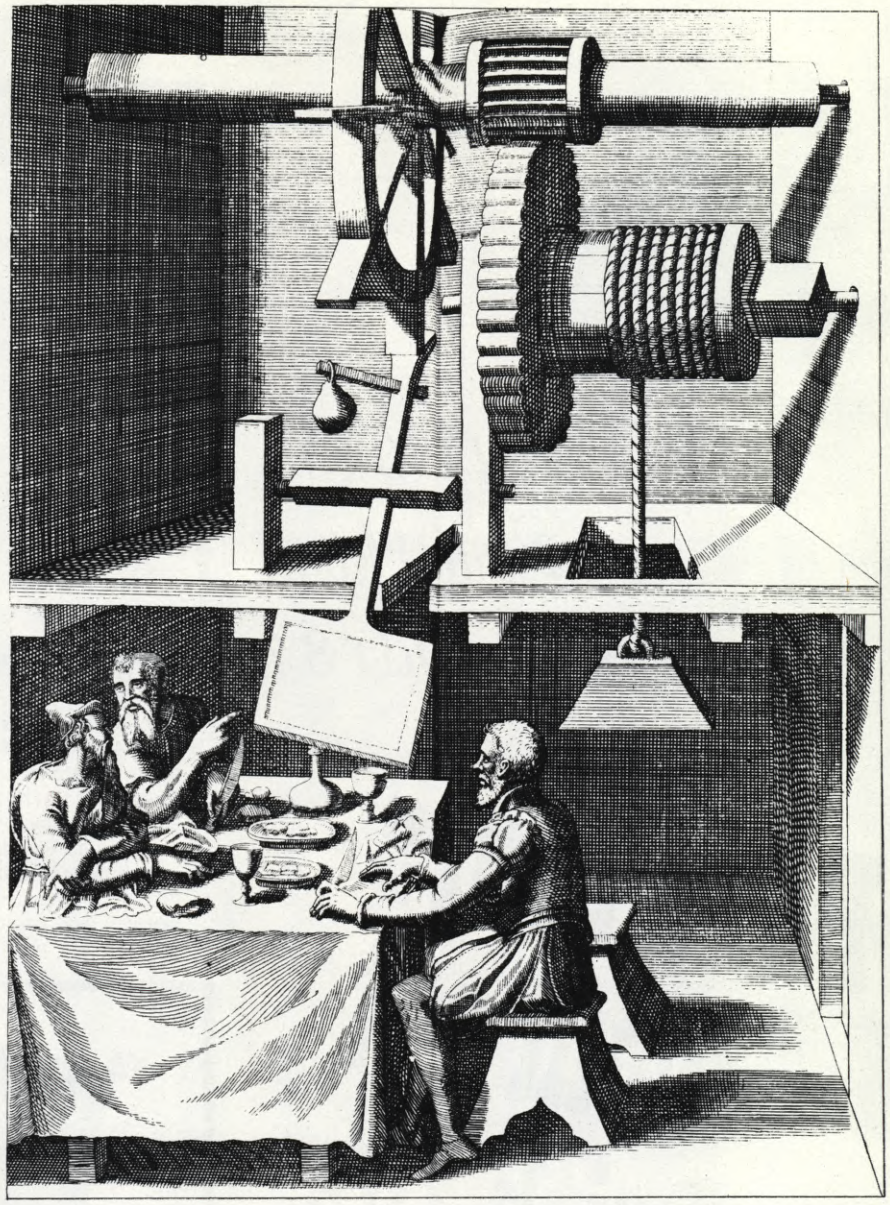
We can tell you that its sister microphone, the MKH 415, provides "semi-shotgun" performance for closer-range applications such as reporting, in-studio recording and close-miking. With its ultra-flat response, complete freedom from proximity effect, low noise, high output and overload resistance, the MKH 415 offers equal performance and only slightly less directionality than the industry-standard MKH 815.

Call or write us, and we'll tell you even more. About our condenser lavalier microphone, dynamic microphones with "condenser" response, wireless microphones and more. If you think all this sounds good, wait 'til you hear how it really sounds.

Sennheiser Electronic Corporation, 10 W. 37th Street, New York, N.Y. 10018 (212) 239-0190 Manufacturing Plant: Bissendorf, Hannover, West Germany.

The Sennheiser MKH 415 Super-Cardiod Condenser Microphone

THE PRIME INGREDIENT IN INNOVATIVE EQUIPMENT DESIGN- CREATIVE LISTENING...



TV-newsfilm and documentary cameramen had been clamoring for years for a truly lightweight and extremely compact 16mm single/double system sound camera. A camera well balanced for "on-the-shoulder" filming. A reliable, no nonsense kind of camera—quick and easy to operate. Our Cinema Products engineers listened well. And designed the CP-16 and CP-16/A camera system.

System CP-16 innovative engineering. Far beyond the reduction of overall camera weight, we have pioneered and introduced a host of innovative features that have been enthusiastically acclaimed the world over. Such as the compact, extremely efficient crystal-controlled DC servo-motor. The built-in Crystasound amplifier. The compact, lightweight plug-in battery which powers the entire camera system. The magazine snap latch, for instant removal or attaching of magazines. And many more!

And speaking of magazines, we have just introduced our PLC-4 ultra lightweight 400 ft. magazine—the newest thing in 16mm magazines in a generation! Made of glass-filled Lexan,® the PLC-4 eliminates film spotting caused by particles of magnesium. And the magazine doors are hinged to provide quick access for loading and unloading. The PLC-4 is, of course, interchangeable with all 16mm Mitchell-type magazines.

Creative listening. At Cinema Products we are masters of the art. We never rest on our laurels. We still listen. And we innovate. We accept what is valid in existing design, and build to improve on it. And we subject everything we design to an ongoing process of evaluation and validation based on inputs from the field. Meticulously paying attention to every detail.

Insurance against obsolescence. The excellence of our original System CP-16 design is such that it permits the integration of most of our latest innovative modifications (such as the magazine snap latch protective overhang) into all CP-16 and CP-16/A camera models—even the earliest ones. And at no additional charge.

Largest U.S. camera manufacturer. The resounding success of our CP-16 and CP-16/A cameras has well established us as the largest U.S. manufacturer of professional motion picture cameras. It also gave rise to a spate of imitations. Though imitation may be the sincerest flattery, we are not impressed. Imitation is not innovation.

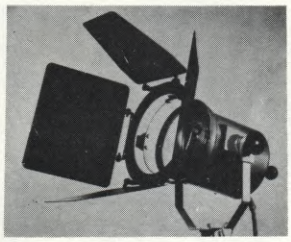
Creative listening *and* innovative engineering. The secret of our success in designing and manufacturing the most sought-after, rugged and versatile TV-newsfilm/documentary cameras—the CP-16 and CP-16/A.

cinema products

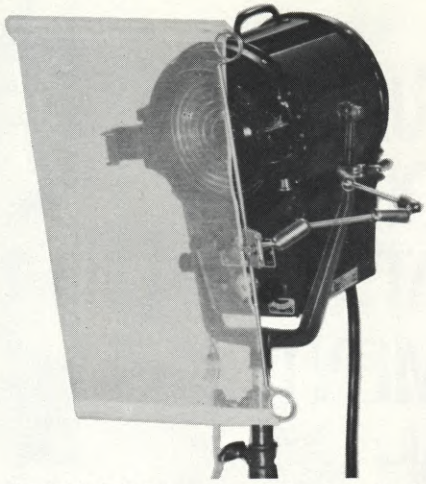
Technology In The Service Of Creativity

CORPORATION

2044 Cotner Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 ■ Telex: 69-1339 ■ Cable: Cinedevco



Why Do You Still Have Your's?



New B & S "Quickie" flexarm and silk attached to M/R Baby Junior.

They're O.K. So are horses. But there are newer and better ways! The B & S "QUICKIE" FLEXFLAG SYSTEM is a modern, sure method to achieve the most versatile lighting effects. The "Quickie" Flexflag system is a fast and easy way to mount a flag — to hang a scrim — to gel a light. Easy locking clamps for fast mounting. Sturdy ball joint arm permits adjusting for any angle. When you want to shade a lens in a hurry or control a light, grab your "Quickie" Kit and it's done in no time. Complete kit consists of flex arm, two different size flags, one silk, and one diffusion holder.

Barn doors went out with the horse!

Quickie flag attached to new B & S Pinza light. Comes complete with gaffer grip for fast, sturdy mounting.

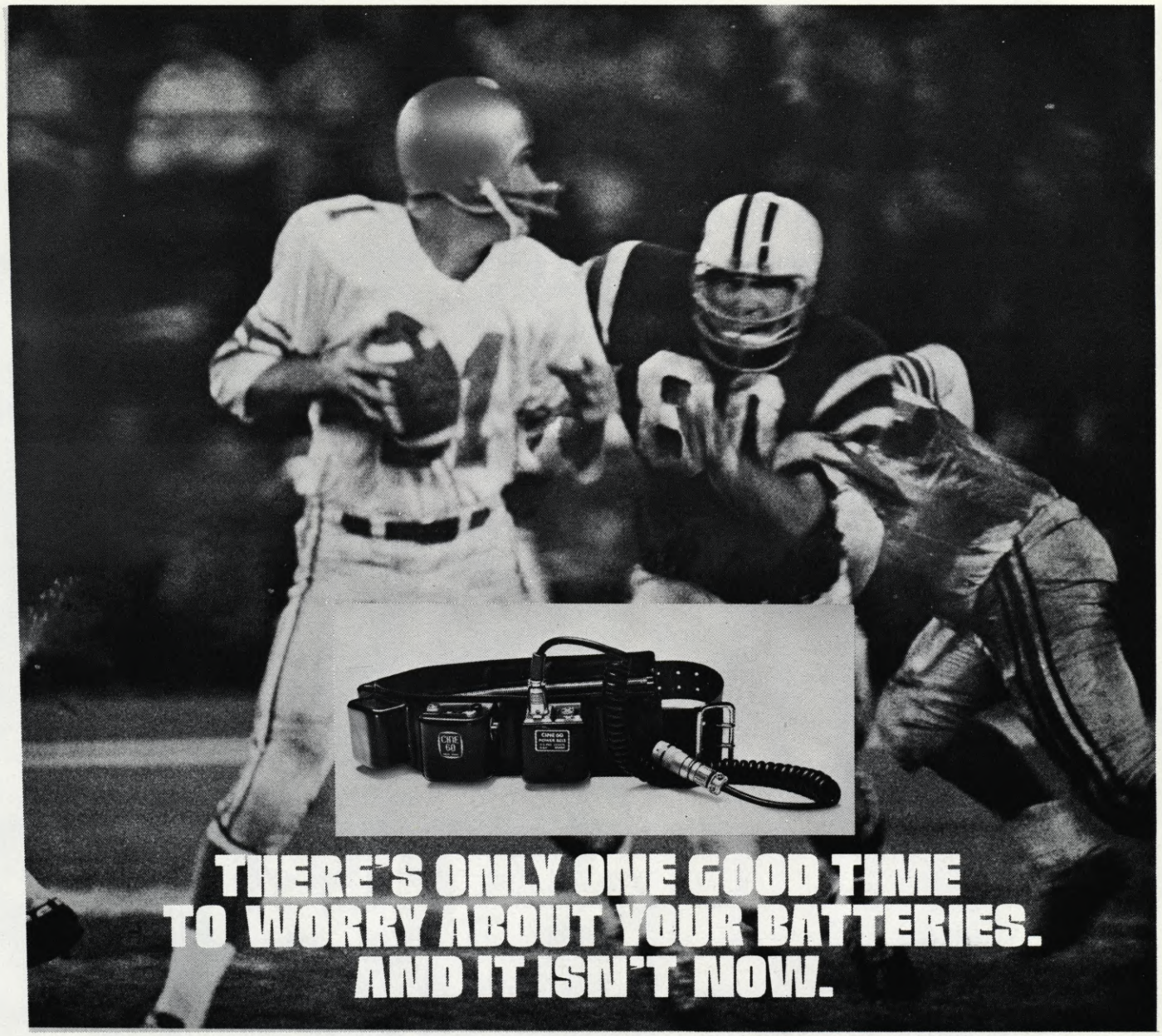
BIRNS & SAWYER HOLLYWOOD

BIRNS & SAWYER, INC.

1026 N. HIGHLAND AVENUE LOS ANGELES, CALIFORNIA 90038 • (213) 466-8211

CABLE: BIRNSAW LOS ANGELES TELEX: 673280

Hollywood Jerusalem London Hong Kong



THERE'S ONLY ONE GOOD TIME TO WORRY ABOUT YOUR BATTERIES. AND IT ISN'T NOW.

Many things on location happen only once. And if you don't get it, you've had it.

So portable power doesn't just have to be portable. It has to work. And work. And work. As hard as you do. And wherever you happen to be.

One way to be sure is to become a beast of burden. With a bunch of heavy extra batteries pulling your pockets out of shape, and slowing you down. Or, a big, bulky pack that gives you all the mobility of the Golden Gate Bridge. But is it worth it?

There's a simpler, more dependable, and much more comfortable solution. Connect your camera (*any* professional camera) to a Cine 60 Power Belt. The rechargeable nickel cadmium batteries are arranged in perfect balance around your waist. Leaving you relatively free to jump, climb, ride, fly, or do whatever you have to do to get your shot.

And you *do* get your shot. Because the Cine 60 Power Belt delivers 6 to 30 volts of reliable power for up to 7 ampere-hours. It can be recharged quickly and safely at any 110- or 220-volt AC outlet. There's a reassuring little signal light to tell you you're getting the charge you think you're getting. And an automatic, built-in safety switch to protect you and your camera from a shock you'd never think of getting.

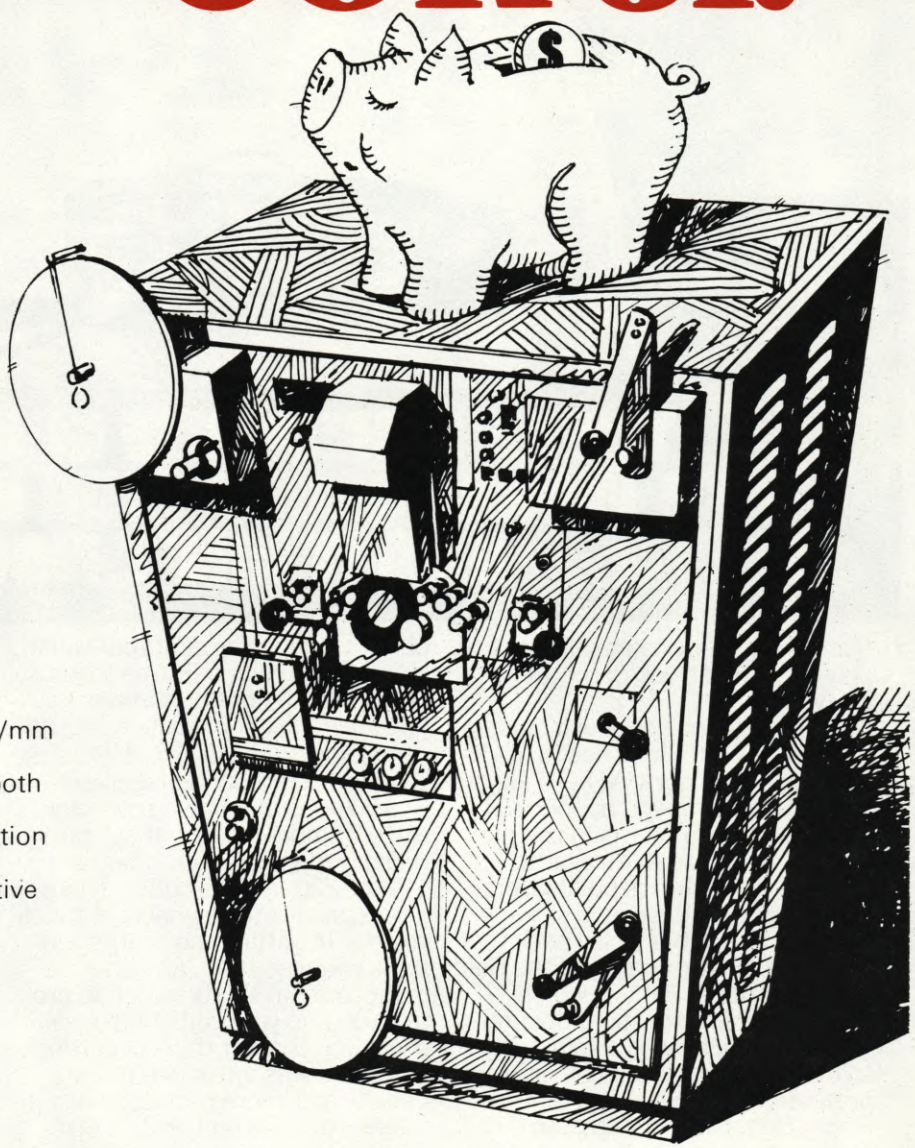
Since it was introduced over a decade ago, more professional filmmakers depend on the Cine 60 Power Belt than on any other portable power supply. And if that isn't one hell of a powerful endorsement, we don't know what is.

Cine 60 makes other motion picture equipment that helps prevent other kinds of crises. There's a battery-powered fiberglass blimp for Arriflex 35 cameras... unique. lightweight single-and-double-shoulder pods... motor-drives for Angenieux, Zeiss and Canon zoom lenses... suction-activated platform and car mounts for shooting at any angle... all kinds of special connectors and camera/lens mounts for all kinds of cameras... and all kinds of helpful information, because we've been there, and we can help. With custom designs and repairs as well. All you have to do is ask.

CINE 60
INCORPORATED
Film Center Building/630 Ninth Avenue New York, N.Y. 10036/Tel: (212) 586-8782

the LOW COST way to high quality, high speed continuous optical super 8 reduction printing

COR Jr.



FEATURES

- Speed-180 FPM (16mm side)
- Negative & rawstock on front of printer
- Resolution 108 line pairs/mm
- Dual rank-quad rank or both
- Continuous optical reduction
- Color additive or subtractive
- Manual light valves
- Unidirectional operation

Peterson

"the printer people" PETERSON ENTERPRISES, INC.

1840 Pickwick Avenue, Glenview, Illinois 60025 (312) 729-1010 (312) 273-2422

"I wouldn't hang around with any other camera."

ANTON WILSON
cinematographer, motion-picture equipment design engineer and cinematographic columnist

"While I've said many times that ACL is the only camera to use when you're working hand-held, I'd never go this far just to prove the point.

"What I'm doing here is a bit of one-upsmanship. Shooting a helicopter patrol film for a major telephone company, I'd been in the cockpit all day, filming a pilot's-eye view of overland cable runs, as we inspected them at up to 60 mph. But I wanted something even more exciting for the film's opening moments.

"On the landing pad, I decided to try capturing the sensation of taking off, climbing to treetop level and speeding away. Without safety equipment, I wasn't surprised when the pilot gave me an argument...but eventually, he started the engine, mumbling something about filmmakers and sanitariums.

"As you can see, a lot more than the film depended on ACL's light weight and one-hand operation. And while I didn't feel like changing magazines—like I did at a rock concert, where I shot over 45 in 13 hours without a hitch—I did get some spectacular footage.

"Afterwards, the pilot told me I was crazy to do it. But he was only partly right. I'd be crazy to do it with any other camera."

For more information about the remarkable Eclair ACL, please write or call. Eclair Corporation of America, 62 West 45th Street, New York, N.Y. 10036, (212) 869-0490. 7262 Melrose Avenue, Los Angeles, California 90046, (213) 933-7182, Telex: 14-7208.

eclair corporation of america

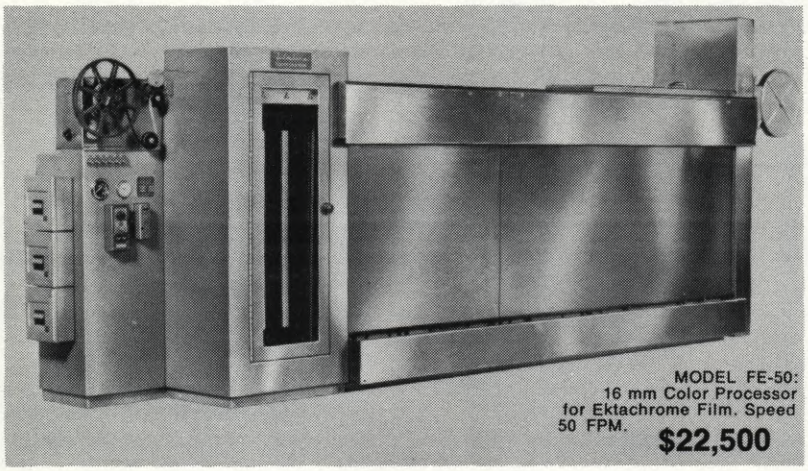
The Money-Makers

FILMLINE'S professional color film processors for motion picture laboratories.

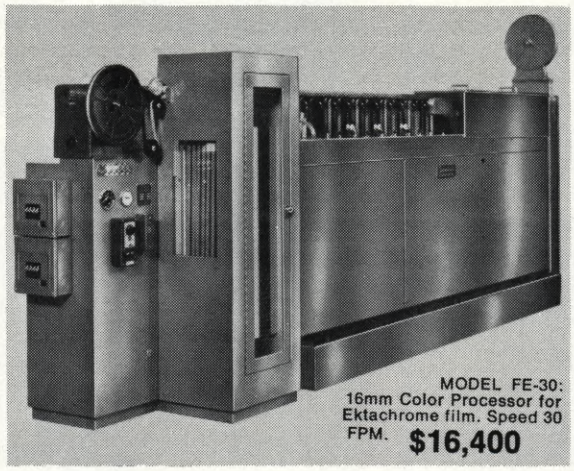
The Filmline Models FE-30 and FE-50 are fast, foolproof, troublefree and long-lasting. They turn out consistently superior work. The design is backed by Filmline's reputation as the world's leading manufacturer of film processors for the motion picture laboratory industry.

Now enjoy the benefits of professional equipment incorporating exclusive Filmline features that have paced the state-of-the-art in commercial, industrial and defense installations at a cost lower than processors offering less.

Check the exclusive Filmline features below:



MODEL FE-50: 16 mm Color Processor for Ektachrome Film. Speed 50 FPM. **$22,500**



MODEL FE-30: 16mm Color Processor for Ektachrome film. Speed 30 FPM. **$16,400**

- **"FILMLINE OVERDRIVE FILM TRANSPORT SYSTEM"** This marvel of engineering completely eliminates film breakage, pulled perforations, scratches and operator error. The film can be deliberately stalled in the machine without film breakage or significant change of film footage in solutions. The heart of any film processor is the drive system. No other film drive system such as sprocket drive, bottom drive or simple clutch drives with floating lower assemblies can give you the performance capability of the unique Filmline Overdrive Film Transport System.
- **"TORQUE MOTOR TAKE-UP"** gives you constant film take-up and does not impose any stress or strain on the film itself. Completely independent of the film transport system. This FILMLINE feature is usually found in professional commercial processors but is incorporated on the FE-30 and FE-50 models as standard equipment. Don't settle for less!
- **"TEMP-GUARD"** positive temperature control system. Completely transistorized circuitry insures temperature control to well within processing tolerances. Temp-Guard controls temperatures accurately and without the problems of other systems of lesser sophistication.
- **"TURBO-FLOW"** impingement dryer. Shortens dry-to-dry time, improves film results, and carefully controls humidity content of your valuable (and sometimes rare) originals. Immediate projection capability is assured because the film dries flat without the usual curl associated with other film processors.
- **"ZERO DOWN TIME"** The reputation of any film processor is only as good as its reliability. The combination of the exclusive and special added Filmline features guarantees trouble-free operation with absolute minimum down-time and without continual operator adjustments. Recapture your original investment in 2 years on maintenance savings alone. Filmline's "Push the button and walk-away processing" allows inexperienced operators to turn out highest quality film.
- **"MATERIALS, CONSTRUCTION AND DESIGN"** All Filmline machines are constructed entirely of metal and tanks are type 316 stainless steel, heliarc welded to government specifications. The finest components available are used and rigid quality control standards are maintained.

Compare Filmline features to other processors costing more money. Feature-by-feature, a careful evaluation will convince you that Filmline offers you more for your investment.

Additional Features included in price of machine (Not as extras).

AJ-74

Magazine load, daylight operation ■ Feed-in time delay elevator (completely accessible) ■ Take-up time delay elevator (completely accessible) ■ Red brass bleach tank, shafts, etc. Prehardener solution filter ■ Precision Filmline Venturi air squeegee prior to drybox entry ■ Air vent on prehardener ■ Solid state variable speed D.C. drive main motor ■ Bottom drains and valves on all tanks ■ Extended development time up to two additional camera stops at 50 FPM ■ Pump recirculation of all eight solutions thru spray bars ■ Temperature is sensed in the recirculation line ■ All solutions temperature controlled, no chilled water required ■ Built-in air compressor ■ Captive bottom assemblies assure you constant footage in each solution ■ Change over from standard developing to extended developing can be accomplished in a matter of seconds ■ Impingement dryer allows shorter put through time.

Partial listing of Filmline users: Film Laboratories; Technicolor, Byron Motion Pictures, TVC Labs, Precision, Reela Film, Bellevue-Pathe, Filmhouse, Ltd., Deluxe General, Capital Film, Movie Lab, Radiant, Guffanti Film, National Film Board of Canada, Alexander Films, Canadian Defense Medical Center.

TV Networks and Stations: NBC, CBS, ABC, WMAL, WXYZ, WWL, WJXT, WTOP, WCKT, WTVI, WNEW, WPIX, WOR, WNAC.

Other: NASA, General Electric, IBM, General Dynamics, United Aircraft, General Motors, Eastman Kodak Company, Bell Telephone Labs, E. I. DuPont Co.

Governments: Canada, Mexico, Thialand, United States, Israel, Qatar, United National.

All prices F.O.B. MILFORD, CONN.

Filmline CORPORATION
MILFORD, CONNECTICUT

Send for Literature.

Time & Lease Plans Available.

"When you buy quality Filmline Costs Less"
(203) TR 8-2433

This 16S has been attacked by a wild bear. And dropped into a river, buried under a snowdrift, hit by falling rocks, covered by volcanic ash, knocked over by a mad bull; and it survived a plane crash. Each time, it has kept on running.

Since 1957, Bill Bacon has run 1,352,000 feet of film through it. "It's never once quit on me," he says.

"I bought that Arri, used, in 1957," says Mr. Bacon. "And I've kept detailed records on it ever since."

Rough Going

"I've used it in airplanes, gliders, dunebuggies, submarines, canoes, snowmobiles, racing yachts, ice-breakers, bulldozers and sleds. In dust and sand storms, and once in a forest fire."

Serviced

"It's been serviced every year by Arriflex; and I've had to have it overhauled after some of our accidents. Several lenses have been damaged or ruined. I've had some minor problems with electrical connections after two dunkings and drenching in seawater spray. And I carry a spare motor."

BILL BACON LIVES IN SEQUIM, WASHINGTON.

Amazing

"But the camera itself has never *once* quit on me in the field," says Mr. Bacon. "I've run 1,352,000 feet of film through it so far. That camera just keeps on going. It amazes me."

ARRI

ARRI

ARRIFLEX COMPANY OF AMERICA

FOR FREE BROCHURES ON OUR 16MM AND 35MM CAMERAS, WRITE TO ARRIFLEX COMPANY AT P.O. BOX 1050, WOODSIDE, N.Y. 11377; OR AT 1011 CHESTNUT ST., BURBANK, CALIF. 91502.

BACKED BY SERVICE

It's the quality of your prints that makes all the difference.

CINE-CRAFT LABORATORIES, 8764 Beverly Boulevard, West Hollywood, California 90048

MOTION PICTURE LABORATORIES, INC., Piedmont Division, 2517 South Boulevard, Charlotte, North Carolina 28203

Film producers in every part of the country depend on MPL for the quality of their prints that makes all the difference. So can you.

Send us your film today!

MOTION PICTURE LABORATORIES, INC.

781 South Main Street
Memphis, Tenn. 38106
(901) 948-0456

ON LOCATION WITH "CHILDREN OF THE MORNING"

A gung-ho crew of young film-makers substitutes ingenuity for elaborate equipment in shooting "hot-dog" skiing championships for feature film

By HERB A. LIGHTMAN

HEAVENLY VALLEY SKI AREA, LAKE TAHOE, California/Nevada

A deep, crystal-clear lake some 6,200 feet up in the Sierra Nevada mountains, 22 miles long and 74 miles around, ringed with peaks soaring as high as 11,000 feet and with more than 20 separate ski resorts gracing the slopes (including Squaw Valley, site of the 1960 Winter Olympics), Lake Tahoe is a rather unique spot on the face of this earth.

It's also a great place to shoot a movie—which is why I'm here.

It's always fascinating to be on location with top expert cinematographers—with Freddie Young in Ireland ("RYAN'S DAUGHTER"), with Ossie Morris in Yugoslavia ("FIDDLER ON THE ROOF") with Vilmos Zsigmond down deep in a rugged gorge in the wilds of northern Georgia ("DELIVERANCE")—but I also find it interesting to share the cinematic experience with young film-makers, some of whom haven't been at it very long. Almost always severely limited in budget and equipment, they use ingenuity instead. Unaware that certain technical things "can't be done", they simply go ahead and do them—like the Bumble Bee which (aerodynamically speaking) couldn't possibly fly, but does it anyway. Often short on technical experience, they make up for it with a bright and shiny zeal for film, inventive imagination and boundless energy—priceless attributes which may well fade when they grow older and more successful. In the meantime, they are refreshing to be around and some of them turn out films that are absolutely inspired.

Mike Marvin (behind camera left), producer/director/cameraman of the ski feature, "CHILDREN OF THE MORNING", shares a platform with ABC WIDE WORLD OF SPORTS cameraman Mike Chevalier during shooting of the Freestyle Skiing Championships at Lake Tahoe. ABC Director very kindly offered use of the platform after pre-empting snow platform previously built by Marvin's crew. At far left is Gary Jameson, who doubles as soundman for the lip-sync sequences and still photographer the rest of the time.

Take Mike Marvin, for example. A native of Tahoe City, a rustic hamlet of 2,000 souls on the north shore of this magic lake, Mike has done stints as an art student, folksinger and carpenter. A few years ago he started to shoot automobile races with a Beaulieu Super-8 camera, and got hooked on film. He rapidly graduated to 16mm and last year completed his first feature, a ski-oriented film entitled "EARTH RIDER" (See *American Cinematographer,* January 1973).

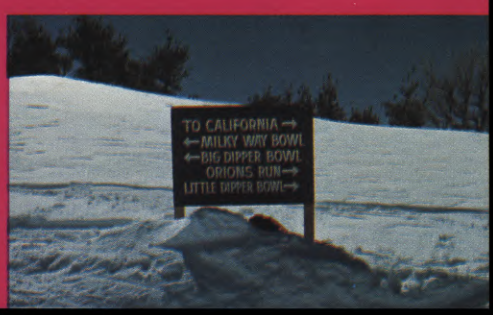
Structurally speaking, "EARTH RIDER" has a few holes you could drive a snowmobile through, but it also has some of the most exciting and lyrical ski footage ever filmed and a fresh eye for familiar subject matter. It culminates in a spellbinding sequence in which one Rick Sylvester skis off the top of El Capitan (a 3,200-foot granite monolith in Yosemite Valley), releases his skis, free-falls for 1,500 feet and parachutes to safety in a treetop on the valley floor.

At this point in time, Mike, a 29-year-old bearded giant, is in the process of shooting the final footage for his new ski feature, "CHILDREN OF THE MORNING", and he's asked me to come along to see what they're doing.

"This is a 90-minute feature ski film aimed toward the lecture circuit this fall and it will have its premiere at the Pioneer Theatre in Reno on October 15th," Mike tells me. "It's the story of four guys who go around the country skiing in the hot-dog contests, the free-style competitions. Each skier is introduced in a dramatic way and his skiing goes on to tell more about him, so that the audience becomes aware of each one's personality by the way he skis. The four top skiers appearing in the film are Jeff Cann, Troy Caldwell, Ralph 'Rocket' Bertoli and Larry Lapkin. There are also appearances by the 'Squaw Valley Rat Pack', Gary Keene and Donovan Phillips. Out of the four main characters, only one turns out to be a top guy on the circuit. The film ends with a spectacular fire jump in which the skiers, with their clothes and skis ablaze, soar through the air. The

In a preliminary film test shot for "CHILDREN OF THE MORNING", daredevil skier Glenn Wurtle, of Vancouver, B.C., is set on fire before skiing off a cliff for the cameras. In finale of the film, four skiers ablaze will soar through the air in slow-motion fantasy sequence after their station wagon blows up.

(ABOVE LEFT) Mike Marvin lines up a scene with Bolex Rex V camera. (CENTER) An intrepid cameraman, shooting the International Free-style Skiing Championships for ABC WIDE WORLD OF SPORTS, hand-holds camera as he skis down the course with Stunt Ballet competitor. (RIGHT) A ski buff in-the-buff streaks down the hill, as the crowd cheers him on. (LEFT) A colorful hot-air balloon, provided by a ski manufacturer, hovers near the finish line. (BELOW CENTER) Crew films scene of principals arriving in station wagon plastered with stickers, which will be blown up later. (RIGHT) At California/Nevada state line, which bisects the mountain at Heavenly Valley, sign points the way to California.



Skiing on the sky—or so it seems, as this "hot-dog" skier does a flip off snow jump during the Aerial Acrobatics event of the competition.

picture will be shown with quadraphonic sound and the idea is to present a visual and musical experience of a type audiences don't usually get when they see a ski film. The picture will have 60 showings in major civic auditoriums around the country and will play until November 15th or December 1st—at which time we'll cut it off because we'll be starting our feature for next year."

Sounds good. As an avid skier myself, I have for many years joined millions of other American ski fanatics to watch the films of Warren Miller, John Jay and Dick Barrymore, the three giants in this highly specialized field of movie-making. Now Mike Marvin bids fair to join their ranks.

What's happening at Lake Tahoe just now (and the subject of this shoot) is the final round of the World Freestyle Skiing Championships. Freestyle skiing (more familiarly known to skiers as "hot-dogging") is a most spectacular sport to participate in, as well as to watch, and it has evolved as a competitive sport only within the last three years. Completely different from downhill racing, it is the only new sport of any significance born in America since baseball.

A freestyle competition consists of three separate events. First, there is the Stunt Ballet, a combination of gymnastics, ballet and figure-skating movements executed by the skier as he twirls and pirouettes down the slope.

Next comes Aerial Acrobatics, surely the most stunning spectacle in sportsdom. Using three snow jumps on the course as launching platforms, the competitors leap into space and execute the most intricate flips—equal in complexity to those performed by high-divers, but with six-foot (or longer) skis attached to their feet.

The final event is the Freestyle Mogul run. Moguls, for the uninitiated, are hard hillocks of snow carved out of the slope by the action of many skiers repeatedly making tight turns as they ski down the hill. The competition course is a steep run literally studded with these obstacles and the competitors, skiing at full tilt, bounce from one to the other, often executing leaps and full turns in the air.

It takes guts, strength and supreme coordination to compete in the freestyle events and the penalty for a miscalculation can be a broken neck or back.

The freestyle competition is to take place at Heavenly Valley, which claims to be America's largest ski resort. It may very well be that, for it is a huge mountain (rising to almost 11,000 feet) that straddles the California/Nevada state line. Half of the runs are actually in California, while the other half are in Nevada. It is located near the south shore of the lake.

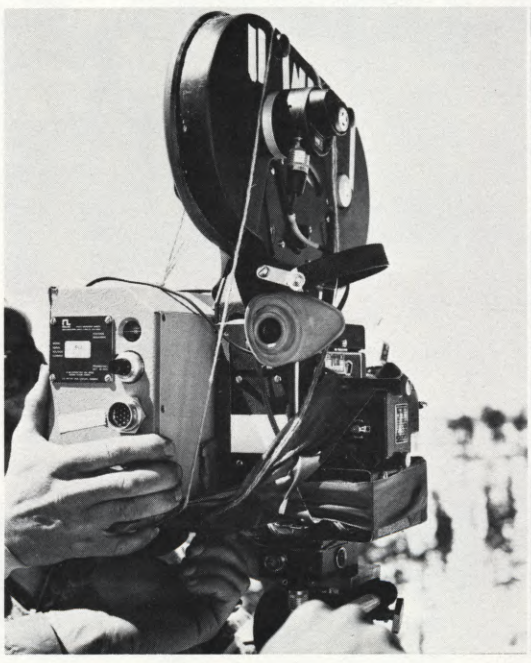
Although it is the tag end of the ski season, there is plenty of snow on the upper slopes. In fact, as we are driving toward Heavenly Valley on the first day, we detour into Ward Valley to inspect a site where I will shortly build a ski chalet and I am amazed to find it covered with 14 feet of snow!

We converge at the base station of the Heavenly Valley aerial tramway and producer-director-camerman Mike Marvin introduces me to the rest of the crew for this shoot. Roy Tremoureux is co-producer and cameraman; Jon Ericson and Larry Lapkin will serve as grips; David Emmerling is a camera operator and Gary Jameson (who sometimes doubles as soundman) will function as still photographer.

It is the day before the first event (Stunt Ballet) is to be held and we are here in the nature of a reconnaisance to check out the runs and decide where camera platforms must be built. We ride the aerial tramway and take two or three chairlifts up to where we can ski over to the run. The view from the top of the indigo lake sparkling between two snow-covered peaks is a mind-boggler. I had seen it before when skiing Squaw Valley, but it's something I'm sure I'll never get used to.

We put on our skis and take off. The snow is perfect—a nice fast hardpack—and there's a lot of it. We reach the Stunt Ballet course, which has been roped off in readiness for the next day. It is gently sloping terrain and relatively free of moguls, having been "manicured" by Sno-cats to provide a smooth

(LEFT) A Locam high-speed instrumentation camera (built by Redlake Corporation) is mounted next to Bolex Rex V camera with gaffer tape so direct cuts can be made from normal 24-frame footage to slow-motion footage of the same scene. (RIGHT) The improvised "dual camera" on tripod is readied for action on snow platform built halfway down the Freestyle Mogul course.



surface for the ballet competitors.

Mike surveys the course, trying to decide on the best camera angles. He says that ABC WIDE WORLD OF SPORTS will also be shooting and the object is to stay out of their way, since, by contract, they have priority on the hill. We can see their wooden platform roughed in some distance back from the finish line, so Mike selects a spot just outside the line and off to the side. It will command a clear view of the entire course, from top to bottom, and a profile of the finish. He pinpoints another camera location at the side of the course about halfway up the hill, and the boys fall to with shovels, building camera platforms out of snow, salted down to create a hard surface.

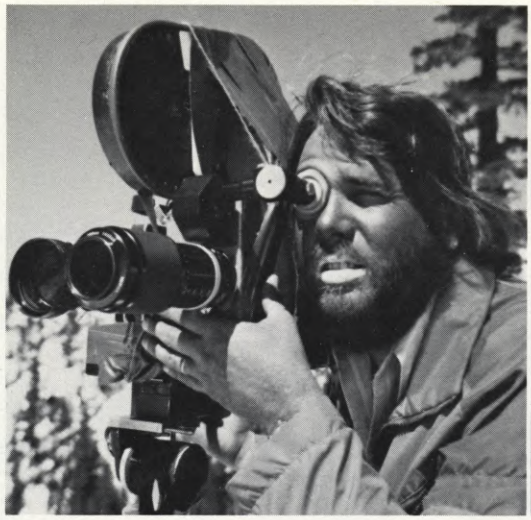
When they've finished, we ski over to the Freestyle Mogul course. It is steep and studded with a solid surface of bumps and valleys, the kind of course that would require the average skier's full concentration just to get down—without even thinking of doing tricks. But the competitors are by no means "average" skiers.

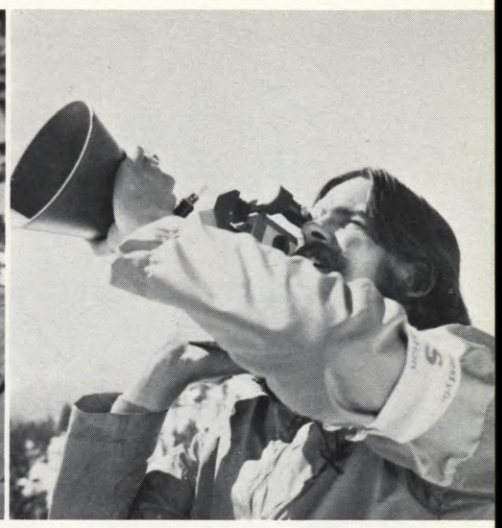
That night we congregate in the bar of the River Ranch Inn, where I'm staying. It is a rustic hostelry on the banks of the Truckee River, which flows out of Lake Tahoe and, at this point, roars along in white water rapids just outside the door. Mike tells me that he has already shot a sync-sound sequence for the picture inside this very bar.

"We shot eleven hours of sync-sound for 'EARTH RIDER' and never used a second of it—mainly because the non-actors I was using were very self-conscious when it came to speaking dialogue," Mike tells me. "I'm using sync-sound in this picture as a basis for establishing the various personalities, but I'm using it sparingly because these guys can't act either. I had to get one of them loaded on tequila before I could get him to do what I wanted him to do. For the sync-sound shooting we used a brand new Eclair NPR, a Nagra IV set up for crystal sync and a Sennheiser shotgun mike. It was a very busy night in this bar, but we quieted the whole place down and shot a dice shooting sequence. It really turned out quite nicely. As a matter of fact, it's the best sound I've done to date."

I look about me at the room we're in. It's a peculiar shape—circular on the exterior wall, but spiralling like a wide ribbon about the service bar, and with a fireplace at one end. It strikes me as not the easiest area in the world to light and I ask Mike how he managed it.

He points to three large globular frosted lighting units directly over the bar. "We replaced the lamps inside those fixtures with photofloods and that served as the key," he says. "For fill light to balance we used a set of Hervic quartz lights which I own. Most of the interior scenes we've shot have been in places like bars, where there is basically one light in the whole room. I've found that the easiest way to light such a room is to use photofloods in the practical light sockets and then try to balance everything out from there. I try to use dimmers as much as I can, and overhead lights. I like harsh shadows and I shoot everything wide-open. I've found that lighting is one of the most interesting areas of film-making. I study the work of cinematographers like Owen Roizman and try to copy time-proven techniques. I don't have all the lighting equipment I'd like to have and I don't understand all of the technical aspects of lighting, but what I've learned to do I've learned by trial and error. I've found that each time I've shot an interior sequence my lighting has improved. The thing that I'm most proud of as a film-maker, so far, is that my lighting in certain scenes has reached a point where it's comparable to that of some of the really good guys. Each time I've made a set-up with lights the result on film has been better than the time before, and I've made genuine progress in that direction."





(LEFT) Mike Marvin, sighting through offset viewfinder of the Locam camera lens, follows a skier with the two cameras running simultaneously. (RIGHT) Co-producer/cameraman Roy Tremoureux follows focus with the Locam camera, which is really a bit heavy for hand-holding. "CHILDREN OF THE MORNING" will have its "world premiere" on the ski lecture circuit next October 15th.

The next morning, crack of dawn, we set off on the 27-mile drive from Tahoe City to Heavenly Valley. Already at the tram when we arrive are the rest of the crew members and time is taken to sort out the mountain of equipment which must be transported up the hill. ABC WIDE WORLD OF SPORTS enjoys the luxury of lugging all their gear to the various camera locations in Sno-cats, but with the Mike Marvin crew it's sheer manpower all the way.

I'm weighed down with several still cameras, lenses, accessories, film and candy bars—so I have my own transport problem. The most sensible approach seems to be to stuff everything into a backpack, sling it on my shoulders and ski over to the shooting location. The catch is that I've never skied with a heavy backpack before and, when I swing into my first turn at the top of the hill, the balance shifts and I almost get flipped on my back—almost, but not quite. The second surprise comes when I hop onto the chairlift, blithely forgetting that I've got about 14 inches of pack protruding behind me. I find myself clinging to the edge of the chair and I damn near fall off before I can undo the pack and shift it onto my lap. Hair-raising!

We ski over to the Stunt Ballet course like fugitives from *"Grapes of Wrath"*, with everyone loaded down with cameras, tripods, film bags and accessory cases. A strange safari. It's a long rough haul, but nobody complains. They're all young and strong and they've got that fanatical film-making gleam in their eyes, so it's no sweat. Had they been sentenced to the same chore in Siberia it would be a totally different story.

When we reach our destination, there is immediate trouble. The ABC crew, it seems, has shifted the location of their wooden platform, so that now Mike's laboriously shoveled snow platform is directly in their line of fire. The ABC director at first brusquely tells Mike that his position will have to go, then backtracks and kindly offers to let Mike share their platform.

Meanwhile, I've discovered that the

Continued on Page 710

THE 1974 LOS ANGELES INTERNATIONAL FILM EXPOSITION

As the "film capital of the world", Hollywood celebrates the art of the Cinema with a 13-day feast of fine films, conferences and special events

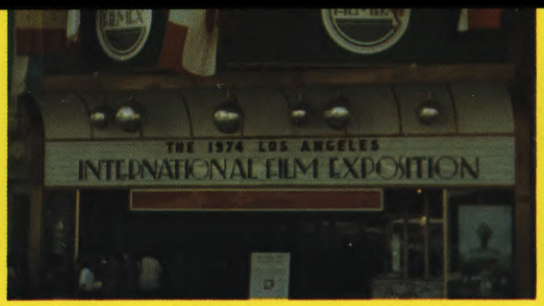
If record attendance, a varied roster of top-notch films and an extremely interesting International Cinematographers Conference can be regarded as reliable criteria, then FILMEX 1974, the recently concluded Los Angeles International Film Exposition, held in Hollywood, can truly be said to have been a smashing success.

This was the third time around for FILMEX. The last time it was held was in the fall of 1972, but since that period of the year is one that is crowded up with many film events (including several international film festivals). With approval of the International Federation of Film Producers Assns., it was decided to "relocate" FILMEX on the calendar and hold it in conjunction with the annual Academy Awards Presentation. This has proved to be a wise decision, since the rescheduling of the event places FILMEX first in the international film festival calendar and makes possible the premiere presentations of many films not previously shown at other festivals.

The ways in which FILMEX, a non-

(LEFT) Gary Essert, Director of the Los Angeles International Film Exposition (FILMEX) welcomes the Opening Night black-tie audience to the 1974 Exposition from the stage of the Hollywood Paramount Theatre. (CENTER) Right in the middle of Essert's speech, the Masked Streaker strikes, setting the slightly zany tone of excitement which persisted throughout the run of FILMEX. No Hollywood function is now complete without its streaker—including the Academy Awards Presentation. (RIGHT) Los Angeles Mayor Tom Bradley (Honorary Chairman of the 1974 Exposition) arrives for the Opening Night festivities.

(LEFT) Members of the Renaissance Pleasure Faire entertain the Opening Night audience with their antics on Hollywood Boulevard outside the Paramount Theatre. (CENTER) Two appropriately costumed members of the UCLA Fencing Team engage in a duel before the presentation of THE THREE MUSKETEERS, the opening film of the exposition. (RIGHT) The magnificent "major domo" who greeted the more than 1,500 celebrities and guests attending the Opening Night of the 1974 Los Angeles International Film Festival.



The Hollywood Paramount Theatre, which served as the site of all of the major film presentations for FILMEX 1974. The theatre was built during the boom period of the 1920's and was designed by G. Albert Lansburgh, who also designed Grauman's Chinese Theatre, the Hollywood Bowl, the Hollywood Roosevelt Hotel and the Egyptian Theatre—all Hollywood landmarks. This theatre was first known as the El Capitan, a playhouse for legitimate stage productions. It became a movie house in the early 1940's, presenting as its first film Orson Welles' CITIZEN KANE. (BOTTOM OF PAGE) The E-type Jaguar with its (for real) MOVIE license plates, served as the motif for the official FILMEX 1974 poster.

Raquel Welch, one of the cluster of stars in Richard Lester's new film version of THE THREE MUSKETEERS, which was the film that opened FILMEX 1974, receives a loud and cordial welcome from fans lining Hollywood Blvd. The benefit premiere performance of the 20th Century-Fox release was carried off with festivities reminiscent of the "Golden Age" of Hollywood.

competitive exposition, differs from other film festivals is summed up by FILMEX Director Gary Essert as follows:

"Most film festivals are commercial affairs, designed for buying and selling film distribution rights, for setting up production deals, for all-around wheeling and dealing. The Los Angeles International Film Exposition is not a festival in this sense; rather it is a concentrated showcase of world film wares—not a specific number from each nation, but a representative number indicating attitudes and activity in each area of the world. Filmex does not seek "premieres" or the work of well-known filmmakers as a first priority, but instead attempts to search out films which are important to the art form, are cinematically unique, document extraordinary events in a creative manner, and/or require assistance to surface above the mundane . . .

"Filmex dares to be different. We believe in the motion picture as a dynamic art form—indeed, *the* dynamic art form. And, in striving to extend the film tastes of Los Angeles and to inspire new creative energy in our own film community, we search out the best in new and vintage films for the city where all the magic first came out of the hat. . . .

"The staff and corps of volunteers who put the Exposition together every year deeply love movies. Only this kind of passion could motivate a group of people to endure the hardship and chaos seemingly necessary to stage the Exposition. It is these individuals who are responsible for whatever success Filmex enjoys."

If Essert sounds proud of that success he has every right to be, for it was he and his associate, Gary Abrahams, who first awakened the Hollywood community to the realization that the "film capitol of the world" really ought to offer some sort of meaningful tribute to the great art form that grew and flourished right in its own back yard, as it were.

It was an uphill fight, strangely enough, but they were ably assisted by Philip Chamberlin, director of special projects for the Academy of Motion Picture Arts and Sciences, and a small nucleus of volunteers, which included director George Cukor and Rosalind Russell. Somehow they pulled it off and FILMEX became a reality in 1971 at the Chinese Theatre in Hollywood. It played that same house in 1972, but this year the Chinese was unavailable because of prior bookings, so FILMEX moved across the street to the Paramount Theatre, another venerable Hollywood landmark, originally called the El Capitan.

This year FILMEX came of age with programs attracting audiences that represented an average of 80% of the theatre's capacity—an extremely high average for any film festival. This overwhelming public response seems to confirm the widely growing conviction that FILMEX has become a permanent part of the Los Angeles cultural scene.

The non-competitive 13-day event was attended by more than 60,000 people. Three world premieres included the 3-D version of FLESH FOR FRANKENSTEIN, a USA/France/Italy co-production directed by Paul Morrissey; LE COUSIN JULES, written and directed by Dominique Benicheti, from France; and DARK STAR, from the USA, written, produced and directed by John Carpenter. There were 17 American premieres: THE THREE MUSKETEERS, which opened the Exposition, a USA/Great Britain co-production directed by Richard Lester; HOME SWEET HOME, from Belgium, directed by Benoit Lamy; PHOTOGRAPHY, directed by Pal Zolnay from Hungary; the British rock feature THAT'LL BE THE DAY, directed by Claude Whatham; Orson Welles' FAKE?, a USA/France co-production; LUDWIG: REQUIEM FOR A VIRGIN KING, the experimental German film written and directed by Hans-Jurgen Syberberg; THE HOLY MOUNTAIN, the new Alexandro Jodorowsky film, a USA/Mexico co-production; CASTLE OF PURITY, a film from Mexico directed by Arturo Ripstein; THE THIRD, from the German Democratic Republic by Egon Gunther; SING SING THANKSGIVING, a USA music documentary directed by David Hoffman and Harry Wiland; SLIPSTREAM, the first feature for Canada's David Acomba; TURKISH DELIGHT, Paul Verhoeven's sexually explicit film from the Netherlands; A PAGE OF MADNESS, recently discovered Japanese silent film directed by Teinosuke Kinugasa; RUSLAN AND LUDMILA, a Russian fantasy directed by Alexandre Ptouchko; LES VIOLONS DU BAL, a film-within-a-film from France directed by Michel Drach; THE STOLEN AIRSHIP, Czechoslovakian director Karel Zeman's innovative, exotic, fantasy film; and THE WEDDING, directed by Andrzej Wajda from Poland.

Among the unique features of the Exposition were the special closing night presentation of the 1921 Douglas Fairbanks silent version of THE THREE MUSKETEERS which was accompanied by a live 20 piece orchestra under the direction of Albert Sendre; the Preston Sturges Movie Marathon, coordinated by Bob Epstein and presented in association with the UCLA Film Archive; and the 4-day International Cinematographers Conference which included an extensive series of workshops, discussions and seminars.

Participants in the conference included Marc Champion (Canada); Carlo di Palma (Italy); Subrata Mitra (India); Beta Batka (Czechoslovakia) and Con-

rad Hall, ASC; James Wong Howe, ASC; Ernest Laszlo, ASC; Stanley Cortez, ASC; and Lee Garmes, ASC; from the USA. The conference was highlighted by a sold-out presentation of "Special Photographic Effects" coordinated by Linwood Dunn, ASC. As a "Tribute to the Art of Cinematography", a series of free morning screenings drew capacity audiences to a variety of film classics.

Other special presentations included an in-person tribute to Rosalind Russell, a midnight showing of the rediscovered Merian C. Cooper classic, SHE; and five special programs of short films (The Art of Animation, Student Films, The Experimental Underground, Long Shorts, and Multi-Screen/Multi-Image).

Some of the 118 celebrity participants in attendance, most of whom had films presented at Filmex, were: Richard Beymer; Jean-Luc Bideau; Buck Henry; Alexandro Jodorowsky; Henri Langlois; Roddy McDowall; Derek Malcolm; Paul Morrissey; Karl Struss, ASC; Donald Sutherland; Raquel Welch; John Whitney; and William Wyler.

Filmex is presented annually in association with the City of Los Angeles and with the cooperation of The Academy of Motion Picture Arts and Sciences, The American Film Institute, The Los Angeles County Museum of Art, The film schools of UCLA, USC, Cal-Arts and Loyola.

Although space limitations preclude individual comment on each of the FILMEX programs, certain of the films shown rate special mention.

It was a stroke of genius on the part of the Program Selection Committee to start and end FILMEX 1974 with new and old film versions of THE THREE MUSKETEERS. The Festival opened with the American Premiere of Richard Lester's brand new reincarnation of the Alexandre Dumas classic, a wild blend of slapstick, swashbuckling and social satire. Released by 20th Century-Fox, the film stars Raquel Welch (on hand, very much in the flesh, for the opening), Charlton Heston, Faye Dunaway, Oliver Reed, Richard Chamberlain and Michael York. For the more artistically perceptive, the real star of this film would be the superlative camerawork of Cinematographer David Watkin, a master of the use of soft light.

As it turned out, the Opening Night audience saw only half of the Dumas story on the screen—and so will the general release audiences. We're told that the final cut ran some four hours long, so it was decided to chop it in half and release it as two features. This version ends with a tag urging filmgoers not to miss the sequel.

Closing FILMEX was the original (1921) silent version of THE THREE MUSKETEERS, starring Douglas Fairbanks, Sr., a dude who really knew how to swash and buckle. Shown with appropriate musical accompaniment provided by a live orchestra, the film was given a rousing reception by the predominantly young capacity audience.

A real "sleeper" of the Festival was THAT'LL BE THE DAY, a very skillfully realized import from Great Britain featuring British rock star David Essex and former Beatle Ringo Starr. Recreating with precise authenticity the atmosphere of England in the restless late 1950's, it is an incisive character study of a seemingly very ordinary young man who, alienated from family by an oversolicitous mother and a runaway father, drops out of school, wanders aimlessly in the fascinating and frightening outside world and returns to help Mum in her little shop. Trying desperately to conform to his predestined "station in life", he marries a local girl, spawns a child and settles in to a humdrum existence. But in the end, like his father before him, he chucks it all and takes off. With guitar in hand, he ambles out into an uncertain future, sustained by his dreams of becoming a rock star.

Screenwriter Ray Connolly and Director Claude Waltham (aided considerably by the moody camera of Peter Suschitzky) have taken these pedestrian elements and woven them into a very human film story that deeply involves the audience. David Essex reveals a formidable acting talent, delivering a performance of great warmth and sensitivity. Already a popular rock star, he becomes an important dramatic star in this well-made film.

Orson Welles' FAKE? certainly lives up to its title, in that it employs skilled montage to put together people and events that were never really together. It obviously started out as a rather ordinary 16mm color documentary by Francois Reichenbach featuring Elmyr de Hory, the notorious art forger, with on-camera commentary by his biographer, Clifford Irving, who was later to become famous (infamous?) as author of the bogus book on the life of Howard Hughes. Apparently, along the way, someone (Welles?) said something like, "It's got no pizazz. Let's take this footage and shoot some more in 35mm and cobble it all together into a feature." The result looks like exactly that, but Welles, appearing on camera with a cynical candor, proves once more that he is a fascinating performer and a unique personality.

DARK STAR, a wonderfully whimsical spoof on space epics (such as Kubrick's monumental 2001: A SPACE ODYSSEY) was one of the triumphant hits of FILMEX—and deservedly so. An absolutely zany romp through outer space in the 22nd century, it features a klutzy spaceship, four bored long-haired astronauts, a peevish talking Exponential Thermostellar Bomb, a creature (kept on board as a pet) that looks like a beach ball with claws and carries on something hilarious, and a deep-frozen former commander of the spaceship who thought-voices philosophy from the Beyond in a manner that places halfway between the Oracle of Delphi and a Popsicle.

Producer/director/writer John Carpenter and writer/art director/editor Dan O'Bannon (both former USC Cine-

Continued on Page 704

In the foyer of the Hollywood Paramount Theatre, crowds wait to be admitted for the next screening. Films were shown almost continuously from 11 a.m. (free screenings) until 2 a.m. the following morning, with the Preston Sturges retrospective continuing for a solid 24 hours. The predominately young audience was enthusiastically (and vocally) most responsive to the films, backing their approval with an incredible 80% average attendance.

FILMING WILDLIFE AROUND THE WORLD

Shooting everything from aardvarks to zebras with a movie camera all over the globe calls for being at home in -30° Arctic climes, as well as keeping a cool head in the middle of a steaming jungle

By WOLFGANG BAYER

Few things in life are as challenging and rewarding as tracking and photographing the wild animals of the world, provided one enjoys nature and the outdoors and has the necessary prerequisites for this specialized field. Besides knowing how to handle a camera, I consider patience, stamina, and versatility most important. Patience, because one may have to hide in a blind for endless hours waiting for the "actors" to appear. In addition, one has to accept filming what the animal wants to do, which is not necessarily the same as what the cameraman has in mind. It is this sort of situation where patience often winds up in frustration.

Stamina is important because the habitat of some of the most spectacular wildlife is away from roads and civilization. Four-wheel drive vehicles and helicopters can be of great help, but terrain may not allow a vehicle, and the budget may not allow a helicopter. Then it's back to the old muscle power.

I also consider versatility of importance, since animals don't come to the photographer; the photographer has

(ABOVE RIGHT) With comely "soundperson" in tow, wildlife cinematographer Wolfgang Bayer sneaks up on a tranquilized elephant somewhere in Africa to shoot a scene for a film on poaching. (BELOW LEFT) The author, filming coyote-elk relationship for National Geographic Special in Wyoming with Arriflex 16BL and 25mm-250mm Angenieux lens. (CENTER) In search of some waterborne "dolly" shots of hippos in Kenya. (RIGHT) Surrounded by thousands of noisy terns and gulls, while filming on Raza Island in the sea of Cortez.

(LEFT) Following a herd of horses in deep snow is almost impossible, so Bayer uses a Sno-cat to explore remote regions of the Pryor Mountains in Montana, filming for a one-hour National Geographic TV Special. (CENTER) Hiding behind snow-encrusted trees to film scenes of buffalo in Yellowstone Park. (RIGHT) Making friends with a young Bighorn sheep. These animals are not frightened by noisy cameras. Thus, the Arri-M is a bit lighter than the BL, and has the advantage over the Beaulieu of the convenient 400-foot magazine.

to get to the animals. This means he may be a mountain climber one day, going after the elusive wild goats high up in the Rocky Mountains, or become a scuba diver capturing the creatures under the sea on film. He may become a spelunker, exploring eerie caves in search of vampire bats, or climb tall trees in the forests of Borneo for a glimpse of the rare Orangutans.

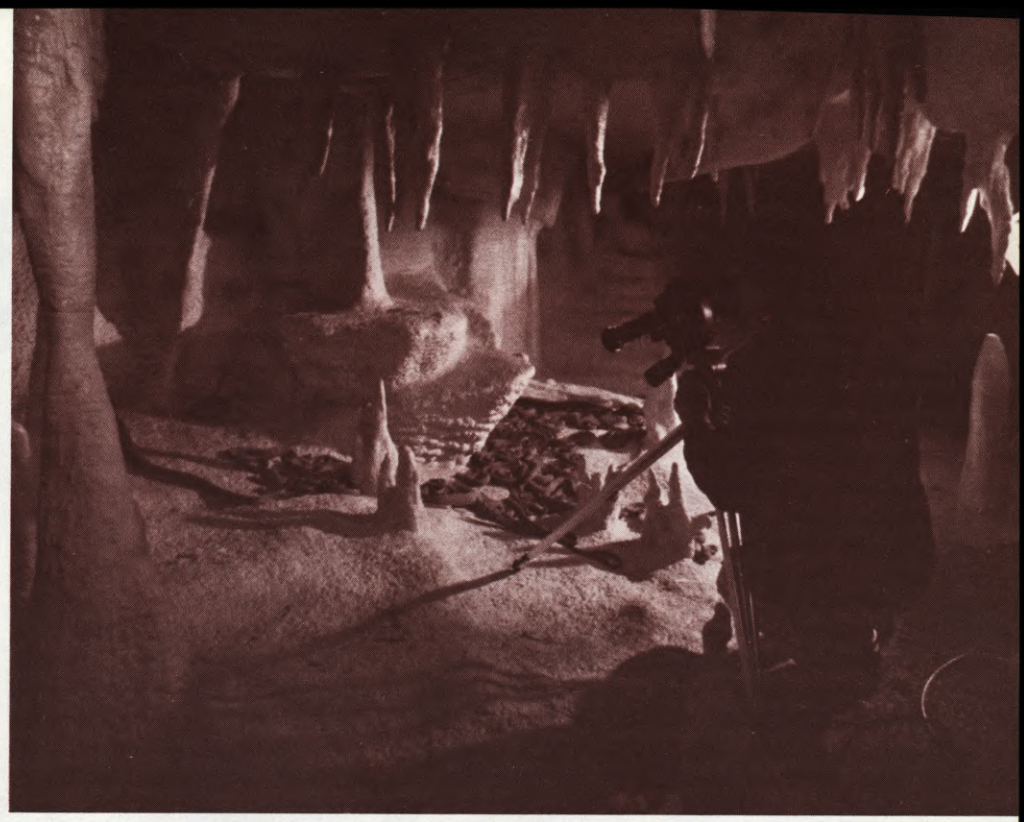
One of my most rewarding experiences was in the hot and wet forests of Borneo where I filmed the Orangutans, the "red apes". I spent six weeks with these amazing creatures in the steaming jungle where the temperature, as well as the humidity, stayed close to the one hundred mark. Where loading a 400-foot magazine in a changing bag became a difficult operation. Yet, one overcomes these obstacles somehow and gets down to, or in this case, I should say, gets *up* to his film work, since a great portion of the Orangutan show was filmed in their own environment: up in tall trees.

I specifically remember a very amusing incident. It's amusing now, it wasn't then. I was filming some POV shots of the apes swinging in the vines. I had enough trouble swinging in the trees by myself, with one hand hanging onto the vine for dear life, in the other hand a Bolex with a 10mm lens. But when one of the apes above me decided to go to the bathroom, with no escape for me from this sudden precipitation, I seriously questioned the fun of filming wild creatures in their own environment.

In the past ten years as producer of wildlife films, I have visited some strange places and tried some crazy stunts to get the unusual on film. I have learned to be at home in the -30° winter filming Arctic wildlife, as well as keeping a "cool head" in the steaming jungle.

One prerequisite that I left out, and one that is more important than all the talent and stamina, is the assignment that allows one to do all of this in the first place, unless, of course, one is independently rich. As far as I am concerned, I don't fall into that category, but fortunately, I kept busy in the last ten years on various assignments for several film production companies.

By far the greatest number of wildlife films on a worldwide basis I was involved with was producing the network television series ANIMAL WORLD for Bill Burrud Productions. In my position as executive producer, I was not only responsible for the creation and production of 125 half-hour episodes, but was able to go on location to film a great number of these shows



More fun than a cave full of rattlesnakes. Bayer calmly sets up lights and camera deep in a cavern to film scores of the deadly reptiles. There has been no end to the variety of wildlife subjects he has filmed during the past ten years, including a stint of producing 125 half-hour episodes for Bill Burrud's ANIMAL WORLD television series.

myself. Producing a half-hour series is a challenge in itself, since one has rarely the luxury of unlimited time or budget.

Our standard crew was a director/cameraman and an assistant camera/sound combination. I say director/cameraman because it was up to the cameraman to create a story in the field. A shooting script was unheard of, since we hardly knew what our crews could expect on distant locations. This is "what separates the men from the boys", and the cameraman becomes a writer, director, production manager, all in one.

The assistant cameraman was primarily a back-up to shoot a second camera which was usually a wide angle coverage when the first camera was on some tight action. Also, some limited location sound recording was done, and last, but not least, research material and notes were collected, helpful later on for writing the narrative script. In many cases the assistant was of the fair sex, often a husband and wife team, and this sort of situation worked out quite well—besides it saved paying for a second hotel room!

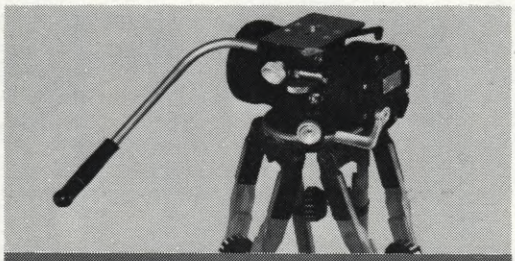
It was not uncommon to hand our two-man team round trip tickets to a remote corner of the globe together with 10,000 feet of raw stock (mainly 7252 plus some 7242 hi-speed for special applications), money for expenses, and a very limited research folder, which many times was nothing more than a newspaper or magazine article of the suggested story idea.

I recall one specific episode on the Japanese snow monkeys. After seeing the front cover of *Life Magazine* one day with a monkey sitting in a hot pool, his head covered with snow, I wanted to do a show on these unusual hardy primates in Japan. After some brief correspondence with the Japanese, I took off for the rugged Hakusan Mountains in northern Honshu, not knowing what to expect, except perhaps some monkeys sitting in a hot pool. As it turned out, the monkeys on the magazine cover were a tame group in a tourist hot pool area and were of little value for a half-hour film. Instead we had to hire a dozen porters and track through deep snow and steep valleys into the habitat of the true Japanese snow monkeys. Filming the real ones up high in the snow covered mountains was one of the highlights in my wildlife career and the result was a delightful program on these creatures.

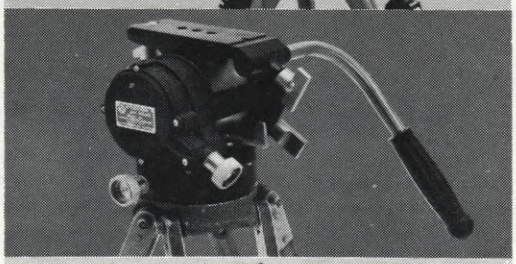
Frequently we suggested to our field team one idea for a program and, for some uncontrollable reasons, wound up with a different and sometimes better story. Since our sponsor, in this case Kal Kan Pet Foods, allowed us complete freedom in subject matter, we had no problem in this respect. Due to the nature of wildlife films, we also had projects backfire, mainly due to bad weather. Even though I consider a certain amount of bad weather such as

Continued on Page 719

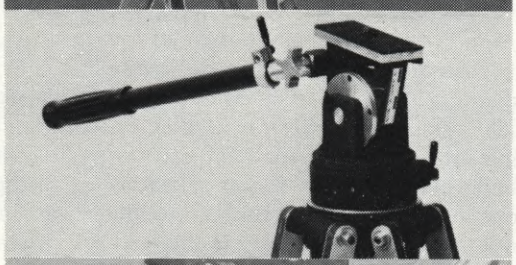
If you want smoother footage, use our heads.



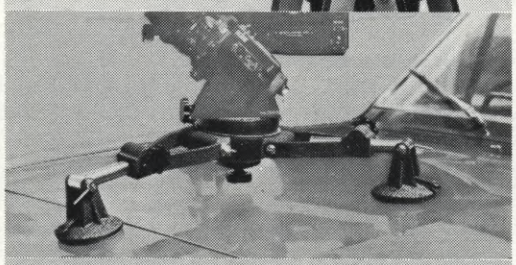
O'CONNOR MODEL 100-C.
Capacity: 100 lbs. Weight: 16 lbs.
360° Pan. Tilt: +60° to −60°.



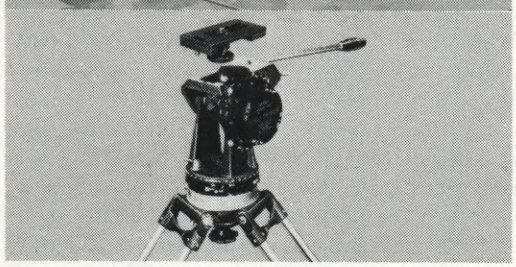
O'CONNOR MODEL 50-B.
Capacity: 50 lbs. Weight: 7 lbs.
360° Pan. Tilt: +450° to −45°.
Fully adjustable pan and tilt drag.
Camera Quick-Release Plate.



NATIONAL CINE SUPER MINI.
Capacity: 20 lbs. Weight: 4½ lbs.
360° Pan. Tilt: ±90° from center.
Right or left hand operation.
Positive pan and tilt locks.



RONFORD LOW-ANGLE TRIPOD.
Weight: 51 lbs. 360° Pan.
Height: Low Angle 7½". Stub Legs 13½". Telescopic Legs 2 ft. 11". Additional attachments available for mounting on cars, etc.



RONFORD FLUID 15 HEAD.
Capacity: 15 lbs. Weight: 21 lbs.
360° Pan. Tilt: 90° Forward; 70° Backward. Lightweight aluminum construction. Damping may be switched from light to firm.

Camera Mart has the steadiest heads in the business: National Cine . . . Ronford . . . O'Connor. Fluid heads that move smoothly and iron out the bumps, jerks and jolts.

Use them for every kind of camera and every kind of shooting. There are lightweight models and heavy duty models. Tripods that can take blistering heat or bitter cold. And if you prefer other makes or types, we have them, too.

Come to Camera Mart to buy or rent. And let us "head up" your next filming.

CAMERA MART
456 West 55 Street
New York, N.Y. 10019

Send me your catalog which includes complete details of your entire line of tripod equipment.

NAME .....

TITLE .....

FIRM .....

ADDRESS .....

CITY .....

STATE .....ZIP .....

The more equipment you need, the more you need Camera Mart.

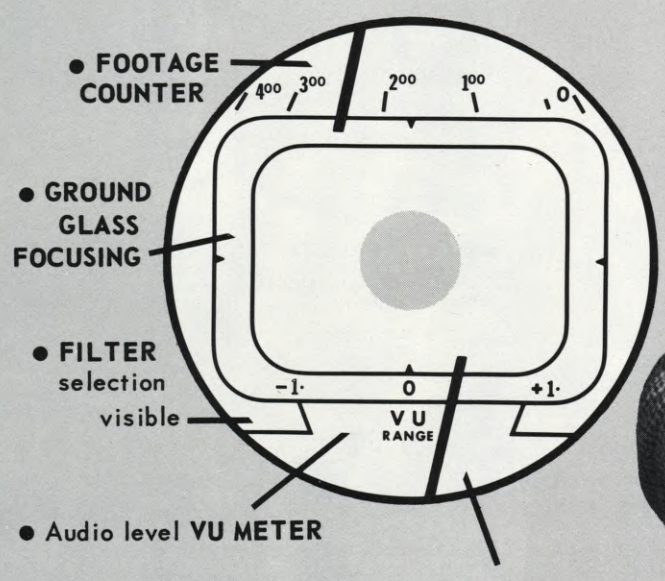
Camera Mart
456 West 55th Street, New York, N.Y. 10019
(212) 757-6977

SALES SERVICE RENTALS

"Here is a news camera that lets me concentrate on what I am shooting!"

"A good news cameraman should be able to handle his equipment as naturally as he does his hands and feet, without having to take his attention away from the action he is filming to make adjustments in exposure, change filters, or check the footage he has left," says veteran news cameraman Harry Watson. "In my opinion the new **MITCHELL-WILCAM** makes this kind of operating freedom a reality for the first time. I can **concentrate** on what I am shooting because **all** of the information I need is right before my eyes at all times. This is a 'news cameraman's camera,' and it has been long overdue in our industry."

It's ALL in the VIEW FINDER



After many years as a news cameraman at Metromedia Channel 11 in Los Angeles, Harry Watson is now an independent news-film and documentary producer.

Designed with the working news and news/documentary cameraman in mind, the new MITCHELL-WILCAM is a brand new concept in 16 mm single system sound cameras. Equipped with either an attached, removable amplifier or a separate amplifier system, the WILCAM has a ROTATING MIRROR SHUTTER that always stops closed. It features single frame INCHING CONTROL, plus CRYSTAL CONTROL at 24 or 25 FPS and variable speeds from 12 to 40 FPS. An internal, fingertip controlled FILTER SLIDE allows instant change to any of four filters. The camera takes MITCHELL type 400 and 1200 ft. magazines or the WILCAM 200 ft. magazine. The bayonet lens mount accepts a variety of lenses.

For further details contact your nearest Mitchell representative.

MITCHELL
WILCAM

COMPLETE SYSTEM AS ILLUSTRATED

$8,885.00

Includes camera, 12-120 Canon F-2.2 Macro Zoom lens, 2-channel amplifier, two batteries, magnetic sound head, one 400 ft. magazine, charger and AC adapter. MITCHELL QUALITY THROUGHOUT!

Eastern U.S.A.
MOBIUS CINE LTD.
565 Fifth Avenue
New York, N.Y. 10017
(212) 697-8620

Canada
PHOTOGRAPHIC ANALYSIS LTD.
8 Brian Cliff Drive
Don Mills, Ontario
(416) 445-6410

Western U.S.A.
SAWYER CAMERA CO.
6820 Santa Monica Blvd.
Hollywood, Ca. 90038
(213) 466-6113

And Mitchell foreign representatives

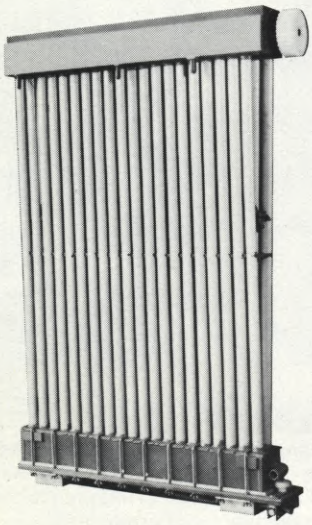
MITCHELL
CAMERA CORPORATION

666 W. Harvard Street, Glendale, California 91209 (213) 245-1085

Jamieson film processors because...

...they're lower priced, operate more economically, and have proved themselves in 100s of installations in 23 countries.

We offer three basic groups or series of processors, and our patented, small reservoir tube tank is the key to them all. It combines the transport rack and solution tank in one small unit, which results in several major advantages:



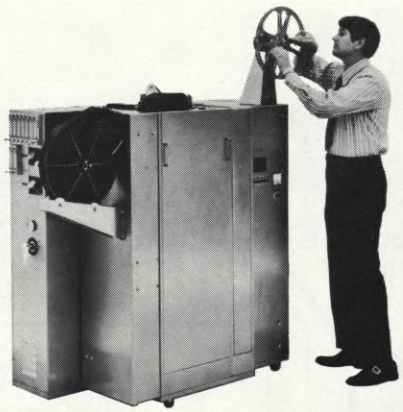
- ► Film advances virtually tension-free. The demand top-overdrive film transport uses no clutches, floating rollers or film sprockets.
- ► Smaller machines take only half the floor space.
- ► Solution volume is reduced 15 times over open-tank designs.
- ► Temperature in primary solutions is controlled to an accuracy of a few hundredths of a degree.
- ► The elliptical shape of the tubes protects the film and provides high induced turbulation.

JAMIESON COMPAC 16/8
Conducts standard ME-4 at 20 FPM. Runs 16mm and 8mm interchangeably. Models available for 35mm/16mm, B&W reversal and negative/positive.

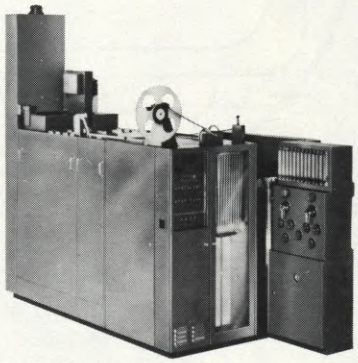
Other important features include: Lower maintenance and labor costs, and less power and water usage. The small volume of solution in the machine gives long-term stability and improved cleanliness. And film threading is both easier and faster, accomplished without removing the tank.

Because of our equipment's modularity and flexibility, we can custom design processors for combination processes or for special requirements.

Write for our new brochure and data sheets on all our models. And give us an opportunity to quote on your processor requirements.



JAMIESON MARK IV, Model A
Runs 16mm and 8mm Ektachrome at 30 FPM. Model B for ECO-3 and ME-4 with silver track. Other models for 35mm processes, including CRI.



JAMIESON MARK IX, Model B
Conducts ECO-3 and ME-4 for all 16mm, 8mm Ektachrome camera and print films at 65 to 75 FPM. Other models run Eastman Color and other processes in 16mm and 35mm.

☐ Yes, I'd like to see your new brochure and data sheets on your color and B&W film processors for 8mm, 16mm and 35mm film.

Name_____ Title_____

Firm_____ Division_____

Address_____

City_____ State_____ Zip_____

JAMIESON FILM COMPANY

EQUIPMENT DIVISION 6911 Forest Park Road, Dallas, Texas 75235 **(214) 350-1283**

Represented in Europe, The Middle East and South Africa by **W. Vinten Limited.**

THE STAR BEHIND THE CAMERA

That silent man behind the camera, long uncredited for his enormous contribution to the art of the cinema, is finally being recognized and receiving the credit he so richly deserves

By DAVID CHIERICHETTI

At the conception of cinema, before there were actors, directors or screenwriters, there were cameramen. Although the cinematographer has been of elemental importance to every American film of the past eighty years, and has contributed enormously to both the technique and the art of film, he has only recently been accorded well-deserved recognition by film critics and scholars.

An exact assessment of how much of any given film's visual quality was created by the director, and how much came from his cinematographer, is difficult to determine. It depends on which director and which cinematographer, and it varies from film to film.

The first filmmakers, such as Edwin S. Porter, had to do their own camerawork, their own direction and their own everything else. The medium was primitive, confined by the limitations of the camera. But progress was incredibly fast. If D. W. Griffith conceived the grammar of the film, Billy Bitzer, Karl Struss, Arthur Miller, Charles Rosher and dozens of other cinematographers supplied the alphabet.

In the 1920's the art of the silent film was in full bloom, and cinematographic techniques had become precise and sophisticated. Crude panchromatic and infra-red films appeared and were used in special cases, but the standard was orthochromatic film, sensitive only to the blue end of the spectrum. It distorted reality. It washed skies white and made blue eyes disappear, but cameramen learned to correct this effect with filters and tricks, such as having blue-eyed actresses stare at black velvet for close-ups. (The black was reflected in their eyes and caused the pupils to dilate, producing very satisfactory results.) Orthochromatic film also made reds and yellows appear darker—Mary Pickford's blonde hair always photographed dark until her cameraman, Charles Rosher, devised a method of shining a spotlight on the back of her head.

The Technicolor Company offered constantly improving variations on its two-color process. Although the resulting hues, dull red, blue-green and varying shades of brown, were usually not pleasing to the eye, several full-length films, as well as brief sequences in many others, had been produced in Technicolor by the end of the decade. Monochromatic films were often enhanced by the use of tinted film stock and color-toned images. Color combinations, such as a pale blue base with a sepia image, often produced stunning results.

Even on major productions the cinematographer routinely operated the camera himself, took his own stills and processed his own camera negatives at the end of each day's shooting. This allowed for far greater control of the negative than would be possible when lab work was all left to the machines. Karl Struss and Hal Mohr, collaborating on Mary Pickford's SPARROWS (1926), drastically overexposed the negative in a swamp sequence, then underdeveloped it to achieve an eerie effect.

In silent films directors could not rely on music and sound effects to convey moods. The burden fell almost entirely on the cinematographer. Films became highly stylized and trends developed. In the early 1920's, diffusion and complex lighting schemes came into vogue; by the end of the decade, the dark influence of the German cinema was very evident in many films.

The coming of sound initially interfered with the cinematographer's art. The camera lost its mobility when it had to be enclosed in a soundproof booth to prevent its noises from registering on the soundtrack. Moreover, the carbon arc lamps which were necessary to light orthochromatic film made a hissing sound that was picked up on the track. It became necessary to substitute a grainy, low-contrast panchromatic stock which could be photographed with quiet incandescent lamps.

The addition of the soundtrack on the left side of the picture changed the proportions of the frame and, for a couple of years, cameramen had to compose in a strange aspect ratio that was higher than it was wide. There were some experiments with wider films of 65 and 70mm, but in 1931 the industry decided to retain 35mm and adopt the Academy ratio of 1.33 to 1.

Rapid improvements were made in panchromatic stock and the 30's became the era of incredible glamour cinematography. At MGM, William Daniels and Karl Freund photographed Garbo, and Olive Marsh created Joan Crawford's most stunning image. At Paramount, Ted Tetzlaff glorified Carole Lombard, Lee Garmes and Lucien Ballard photographed Marlene Dietrich, and Claudette Colbert insisted on Charles Lang. Tony Gaudio and Sol Polito presided at Warners. It was an era of brilliant blacks and whites, high-key lighting and needle sharpness. Diffusion was used when an aging face demanded it, but the cameramen strove to make it imperceptible.

Although a few sound films, such as ONE HOUR WITH YOU (1932) and BIRD OF PARADISE (1932), were printed on faintly tinted stock, the practice was soon discarded. Film tints deep enough to be effective dramatically interfered with the reproduction of the soundtrack. Occasional features, such as THE FIREFLY (1937) and STORMY WEATHER (1943), were released in sepia tone, but that too was a dying technique. Use of natural color, however, was becoming widespread. Two-color Technicolor, used widely in 1929 and '30, stopped almost entirely in 1931, '32 and '33 as producers tired of its limited chromatic range and enormous costs. Under the direction of Dr. Herbert Kalmus, Technicolor developed a vastly superior three-color system, which was introduced with Disney's animated FLOWERS AND TREES (1933), the live-action short LA CUCARACHA (1934) and the feature BECKY SHARP (1935).

At first, three-color Technicolor had some limitations in terms of what colors it could reproduce, but it was constantly being improved. Technicolor supplied

a consultant (often Dr. Kalmus' wife, Natalie) for every picture and, after many complaints about the brilliant reds in BECKY SHARP, these consultants tried to convince art directors to restrict themselves to greys, browns and pastels. Brilliant greens and occasional reds were permitted when the story dictated, as in the cases of ROBIN HOOD (1938) and THE WIZARD OF OZ (1939), but the muted shades of TRAIL OF THE LONESOME PINE (1936) and GARDEN OF ALLAH (1937) were more typical of the period. Technicolor also supplied expert color cinematographers, including Ray Rennahan and Winton Hoch, who collaborated with each studio's staff cameramen, teaching them how to use the process.

Like the stars, directors often found certain cinematographers who suited their purposes best, and they would work together frequently. John Ford used Gregg Toland and Arthur Miller whenever he could. Josef von Sternberg had very precise ideas of what image he wanted and how best it could be achieved; Bert Glennon and Lee Garmes understood his concepts fully and were able to achieve them on the screen, adding a few embellishments of their own. Lucien Ballard, who had served on the crews of both Glennon and Garmes, was Sternberg's chief cinematographer for DEVIL IS A WOMAN. His work with Sternberg is reminiscent of the Sternberg-Glennon and Sternberg-Garmes pictures, but there are some notable differences (i.e. greater depth of focus and less diffusion).

Other directors, such as George Cukor, gave their cameramen specific ideas of what they wanted but, at the same time, a much freer hand with which to create them. Thus, what Karl Freund did on CAMILLE is quite different from Charles Lang's ZAZA, yet both are lushly romantic in keeping with their similar stories and backgrounds. Joseph Ruttenberg's photography of THE WOMEN is again different, but all three films display the same pervading sense of elegance and taste evident in every Cukor film.

The 40's brought new styles in cinematography. Black and white became softer and more natural, with less emphasis on the extremes and more on varying shades of grey. Color, on the other hand, became more brilliant. Leon Shamroy used brighter, more contrasty colors in SPRINGTIME IN THE ROCKIES than Technicolor had ever before allowed, creating a "look" indigenous to all Fox musicals. At Universal, Hal Mohr made horror movie history with his carefully chosen but brilliantly saturated hues in THE PHANTOM OF THE OPERA and THE CLIMAX, while George Folsey and Joseph Ruttenberg carried out the lavish color schemes of Vincente Minnelli's musicals at MGM.

The end of World War II brought a new emphasis on adult reality in the subject matter of films, for example, THE BEST YEARS OF OUR LIVES and GENTLEMEN'S AGREEMENT, and in the pervasive influence of Italian Neo-Realism evident in the surrealistic darkness of many *films noir.* Leo Tovar's lighting of William Wyler's THE HEIRESS reflects the Italian influence, while his photography allowed Wyler to indulge a fascination for staging action in depth. Depth of focus, which caused a sensation when Orson Welles' CITIZEN KANE and Howard Hawks' BALL OF FIRE (both photographed by Gregg Toland), were released at the beginning of the decade, was another major trend of the 40's.

Television was making major inroads on the film audience, and producers began looking for things movies could do that television couldn't. Use of color increased and three-dimensional films enjoyed a brief flurry of popularity in 1952 and '53. But the public soon tired of 3-D—it caused eyestrain and, at best, the novelty was inconsequential. By early 1954, films like KISS ME KATE and DIAL M FOR MURDER which had been shot in 3-D were released flat. 3-D was forgotten.

Cinerama, introduced by THIS IS CINERAMA (1952), combined a feeling of the third dimension with a picture three times the usual width by simply projecting three films simultaneously side by side. THIS IS CINERAMA, with its roller coaster rides and stereophonic sound, caused a sensation. Soon thereafter, Darryl Zanuck announced that 20th Century-Fox would launch CinemaScope, a sort of poor man's Cinerama combining a screen double the standard width and stereo sound. Although CinemaScope lacked the depth of Cinerama, it had the advantage of being contained on one standard 35mm film. With the installation of wider screens and new sound equipment, existing theatres could all be converted to 'Scope.

CinemaScope was an anamorphic process which compressed double the width of the 35mm frame into the negative. When projected, the lens compensated for the compression, spreading out the picture to an aspect ratio of 2.55 to 1. Early CinemaScope was a nightmare for cinematographers; the lenses permitted no depth of focus and distorted faces so badly that close-ups were out of the question. Nonetheless, the first CinemaScope films, THE ROBE and HOW TO MARRY A MILLIONAIRE, enjoyed enormous success. All the major studios, except Paramount, began turning out most of their films in CinemaScope.

Paramount did not join in the rush because it was developing its own wide-screen process, VistaVision. Introduced in 1954 with WHITE CHRISTMAS and STRATEGIC AIR COMMAND, the process involved 35mm film moving horizontally through the camera, and projector, producing a larger, brighter, sharper image. Later VistaVision was shot in 70mm and then reduced to 35mm, cropping the top and bottom of the frame to 1.66 to 1, achieving an image wider than the Academy standard. VistaVision had none of CinemaScope's distortions and the image was clearly sharper than standard 35mm.

Continued on Page 736

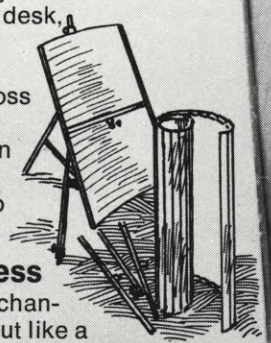
FILMEX Director Gary Essert introduces famed cinematographer James Wong Howe, ASC to the enthusiastic audience at Hollywood Paramount Theatre, following a screening of THE ADVENTURES OF TOM SAWYER, which Howe photographed in 1938 using the rich 3-strip Technicolor process. Having been a "star behind the camera" for almost six decades, Mr. Howe is currently Director of Photography on the new Barbra Streisand film, FUNNY LADY.

Introducing Vari-flector II

We've made a good product even better!

More versatile than any other reflector. More rugged and easy to use than ever before.
The only reflector that rolls up into a compact case for storage and travel is *also* the only reflector on the market with a flood control: the Lowel Vari-flector And now, we've improved it!

New ease of assembly
If you're familiar with the Vari-flector, you already know it unrolls like a roll-top desk, becoming rigid by attaching two side channels and a cross bar. But now, the side channels open wide, making the reflector a cinch to insert.

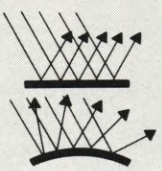


New ruggedness
The Vari-flector's channels now clamp shut like a vise. Which, with the added protection of a new cross bar locking lever, increases structural integrity . . . even in high winds.

As compact as ever
The large Vari-flector II (model 404) and stand fit into a 42 x 7" case. And the smaller unit without stand (model 202) fits into a case only 24 x 4½". Both units are compact enough to take to the most remote locations.

Superior stand-mounting
Rugged, lightweight Vari-flector stand (model VS) assures positive tilting, panning and height adjustment, providing horizontal, vertical and diagonal reflection and flooding. Center spike can be forced into soft ground for added wind stability. Extendable leg levels stand on uneven ground. (Incidentally, many gaffers have taken to using our VS stand for large lights, cutters, etc.)

Exclusive flood control
Vari-flector's brilliant, extremely even light pattern can be instantly softened and spread out (as much as 3:1) with its finger-operated cam lever.



You can continuously adjust the degree of flood to prevent "washing out" subjects as they approach the camera.

Works indoors, too
Vari-flector is an excellent studio or location "source", reflecting artifical or window light. And it's especially useful where space and/or power restrictions exist.

Cleans with soap and water
The aluminized surface resists stains and scratches; eliminates frequent, expensive resurfacing.

Choose from two sizes
Model 404, measuring 42 x 27" opened, and model 202, 24 x 18".

For more information
. . . visit your Lowel dealer, and try the Vari-flector II for yourself. For his name, or further information, contact us.

lowel

Lowel-Light Manufacturing, Inc.
421 West 54th Street,
New York 10019 (212) 245-6744

U.S. Patent No. 3,254,207

MOVIOLA

When it comes to flatbeds, nobody else cuts it.

Because nobody else in the world knows your film cutting needs like Moviola. That's why our new six-plate, four-plate and two-plate flatbed editors can save you time and money in a way nobody else can match.

They're simple, fast, flexible and precise. With solid, practical features you won't find all together anywhere else. Like picture/sound interlock at ten times sound speed • Electronically controlled picture/sound inching and single-frame viewing • Immediate stop on a precise frame at sound speed with no spillage or tension loss • Frame/footage or second/minute display • Clear and sharp 8½" x 11½" viewer that provides full viewer brightness with no film damage • Integrated circuit audio system • And more.

Remember, we've been a basic, everyday part of the American motion picture industry for more than fifty years. And that kind of on-the-job experience is the reason why our new flatbeds will outperform anything put up against them. Why take a chance on anything else, when you can get a Moviola?

magnasync moviola **magnasync/moviola corporation**

A Subsidiary of Craig Corporation

5539 RIVERTON AVENUE/NORTH HOLLYWOOD, CALIFORNIA 91601/(213) 877-2791

THE YEAR OF THE CINEMATOGRAPHER

FILMEX honors the men behind the camera, by inviting cinematographers from many countries, screening superbly photographed films, and presenting cinematography workshops

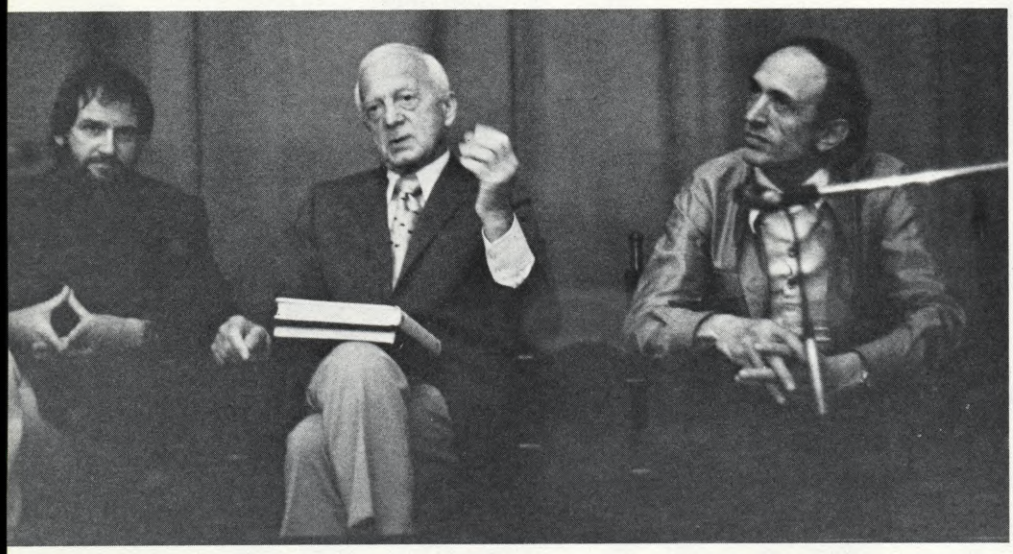
Past editions of FILMEX have honored the Director and the Writer by arranging a series of seminars, conferences and workshops concurrent with the Exposition itself. At FILMEX 1974, this was the year of the Cinematographer.

It had been decided early on to cast the FILMEX spotlight on the Director of Photography, that often-unsung hero behind the camera whose artistry can contribute so much to the impact of a successful film and, with that in mind, FILMEX Director Gary Essert and Associate Director Gary Abrahams requested that the American Society of Cinematographers co-sponsor and aid in coordinating the International Cinematographers Conference this year.

The A.S.C. Board of Governors enthusiastically accepted the suggestion and formed a committee to work closely with Conference Coordinator I. William Stalew in lining up an interesting program that would include screenings of outstanding films (with their respective cinematographers present to discuss them) and cinematography workshops for serious film students, with panels including some of the most famous cameramen in the world on hand to discuss techniques and answer questions.

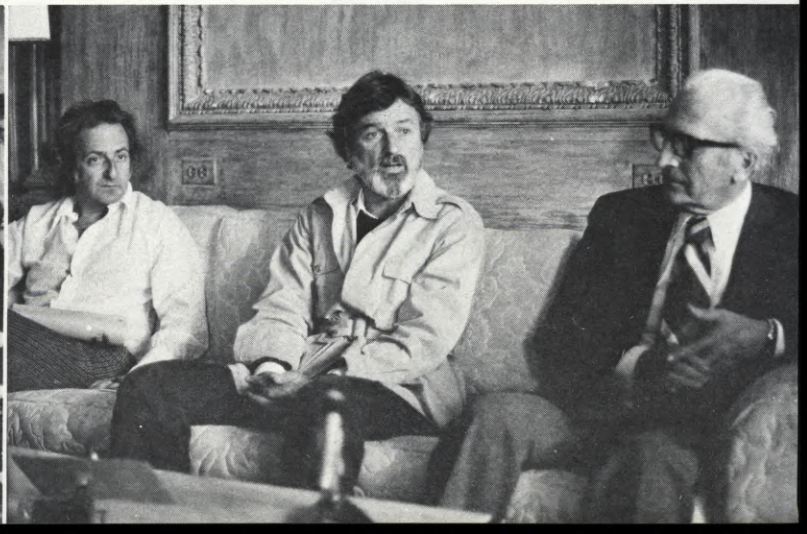
The film program consisted of free morning screenings of pictures of the past which are now regarded as classics of distinguished cinematography.

The first on the list was the 1932 version of DR. JEKYLL AND MR. HYDE. While the film itself has, through the years, become high camp because of its dated script and acting style, it is amazing to note that, after more than 40 years, the photography still holds up magnificently. Its Director of Photography, Karl Struss, ASC, (who, together with the late Charles Rosher, ASC, won the first Academy Award for Cinematography in 1928) was on hand to discuss his work with the audience. Though the fact is totally unrelated, it is interesting to note that



Ernest Laszlo, President of the American Society of Cinematographers, leads a discussion with two of the outstanding cinematographers from abroad who were invited guests of FILMEX. At left is Australian Director of Photography Robin Copping. At right is famed Italian cinematographer Carlo DiPalma, best known to American film buffs for his exceptional photography of such Antonioni films as RED DESERT and BLOW-UP.

(LEFT) Serious students of Cinema and visiting cinematographers crowd lecture room of The American Film Institute in Beverly Hills to attend a workshop on the subject CINEMATOGRAPHY; INFLUENCES FROM OTHER MEDIA. (RIGHT) Panelists for the workshop include Mexican Cinematographer Rafael Corkidi (Jodorowsky's THE HOLY MOUNTAIN and EL TOPO), Conrad Hall, ASC (IN COLD BLOOD, BUTCH CASSIDY AND THE SUNDANCE KID) and three-time Academy Award-winning cinematographer Winton Hoch, ASC.



(LEFT) At a cocktail and buffet reception held at the A.S.C. Clubhouse in Hollywood to welcome visiting cinematographers, A.S.C. President Ernest Laszlo (at microphone) introduces some of the guests. They include (left to right) Rafael Corkidi (Mexico), Adeem Mellick (India), Heikki Katajisto (Finland), I.W. Stalew (International Cinematographers Conference coordinator), and Marc Champion (Canada). (RIGHT) Director of Photography Subrata Mitra (India) discusses techniques at workshop. At right are Heikki Katajisto (Finland) and Rafael Corkidi (Mexico).

Mr. Struss, 88 years young, is a current tennis champion.

The next film program was a double feature which included the Errol Flynn ADVENTURES OF ROBIN HOOD and the 1938 David O. Selznick production of THE ADVENTURES OF TOM SAWYER, both filmed in glorious Technicolor and the latter photographed by James Wong Howe, ASC. Mr. Howe was present at the theatre after the screening to tell about the filming of TOM SAWYER (his first color assignment), but a subsequent conference with him, which had been scheduled far in advance, had to be cancelled because of his assignment to photograph the new Barbra Streisand film, FUNNY LADY.

On the third morning, the audience was treated to a screening of THE RED SHOES, an absolutely stunning film which is as beautiful now as the day it was completed in 1948. Superb photography by Jack Cardiff, BSC, adds tremendously to the cinematic art of this memorable production.

Next on the program was Bunuel's LOS OLVIDADOS (THE YOUNG AND THE DAMNED), made in Mexico (1950) and photographed in graphic black and white by Mexico's greatest cinematographer, the legendary Gabriel Figueroa.

On the following morning the capacity audience sat spellbound as David Lean's monumental LAWRENCE OF ARABIA surged across the screen. A magnificent film in every respect, what stays in the mind long after the final fadeout is the incomparable cinematography of three-time Academy Award winner Freddie Young, BSC.

The next film to be shown in this series entitled "A Tribute to the Art of Cinematography" was Akira Kurosawa's Japanese free-form adaptation of Shakespeare's Macbeth, THRONE OF BLOOD. In this film, the stunning bravura performance of Toshiro Mifune is perfectly complemented by the mood-drenched black and white cinematography of Azakazu Nakai.

On the following day, THE NIGHT OF THE HUNTER was shown. The only film ever directed by Charles Laughton, it features a strange, off-beat performance by Robert Mitchum and richly textured mood-drenched photography in black and white by Stanley Cortez, ASC. The genial Mr. Cortez was present to discuss the photography of this film and, at his suggestion, the audience joined him in standing for a moment of silence in tribute to the late Charles Laughton.

The next program was entitled: THE CAMERAMAN and it led off with an introduction to the subject by Ernest Laszlo, ASC, President of the American Society of Cinematographers and one of the top Directors of Photography in the industry (FANTASTIC VOYAGE, AIRPORT). His short and witty talk was followed by screening of the ASC presentation, MILESTONES OF CINEMA, which traces the art of cinematography from its very beginnings. This was followed by another short film about the historic cameras and film artifacts on display in the A.S.C. Museum.

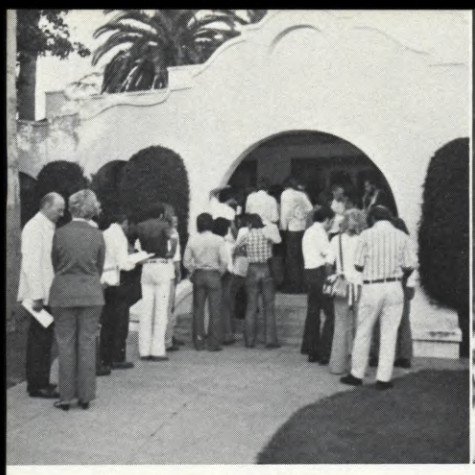
On the following morning, the series of screenings resumed with ZOO IN BUDAPEST (1933), beautifully photographed by Lee Garmes, ASC. Mr. Garmes was present to talk to the audience following the screening.

The next film of the series was Antonioni's greatest popular success, BLOW-UP, photographed in glowing, highly-stylized color by the noted Italian cinematographer, Carlo DiPalma. Mr. DiPalma was present and, after the screening, discussed his work and answered questions with the aid of an interpreter.

The final event of this series was the screening of MARGIE (1946), a nostalgic film about the carryings-on of high school kids in the 1920's. It was expertly photographed in the very rich Technicolor of the time by Charles Clarke, ASC, and Mr. Clarke was at the theatre "in person" to tell about the use of the cumbersome three-strip Technicolor camera and the huge amount of light needed to shoot color with the process in those days.

Meanwhile, the American Society of Cinematographers had hosted a cocktail and buffet reception at its Hollywood clubhouse to welcome the many cinematographers from foreign countries who were attending FILMEX. It was a wonderful opportunity for these men and their Hollywood counterparts to meet informally and discuss their subject of mutual interest, the art of cinematography.

Genial Director of Photography Stanley Cortez, ASC, discusses his work on Charles Laughton's THE NIGHT OF THE HUNTER, following screening.



(LEFT) Crowd outside of American Society of Cinematographers Clubhouse in Hollywood awaits start of one of the several cinematography workshops held there. (RIGHT) Inside the clubhouse, every available space is filled. Unfortunately, due to space limitations, attendance at workshops had to be restricted to those who had registered in advance, but smaller groups permitted freer discussion.

Where the International Cinematographers Conference came sharply into focus was in the several Workshops involving three or four top cinematographers discussing and answering questions on a number of specific phases of their work. These workshop sessions were held variously at the Paramount Theatre, the Hollywood Masonic Temple, the A.S.C. Clubhouse and the American Film Institute, and they were restricted (because of seating capacity) to a limited number of people who had signed up for them in advance.

The first Workshop, held at the A.S.C. Clubhouse was on the subject of LIGHTING STYLE AND TECHNIQUE. The moderator was Lee Garmes, ASC (USA), and the panel members were: Laszlo Kovacs, ASC (USA), Soumendu Ray (India), and Marc Champion (Canada).

The second Workshop, held at the American Film Institute, was entitled: CINEMATOGRAPHY: INFLUENCES FROM OTHER MEDIA. The moderator was Conrad Hall, ASC (USA), Winton Hoch, ASC (USA), and Rafael Corkidi (Mexico).

The third Workshop, held at the A.S.C. Clubhouse, was on the subject of CINEMATOGRAPHY FOR TELEVISION. The moderator was George Schaefer (USA), and it included Howard Schwartz, ASC (USA), Heikki Katajisto (Finland) and Jan Kalis (Czechoslovakia).

The fourth Workshop, also at the A.S.C. Clubhouse, was devoted to THE MOVING CAMERA. The moderator was Vilmos Zsigmond, ASC (USA), and the panel included Charles Clarke, ASC (USA), and Marc Champion (Canada).

The fifth Workshop was actually an informal discussion, held at the Hollywood Masonic Temple (right next door to the Paramount Theatre) and it included Rafael Corkidi, Subrata Mitra, Soumendu Roy, Robin Copping, David Sanderson, Marc Champion, and Heikki Katajisto.

Informal discussion of MOTION PICTURE SPECIAL EFFECTS at Hollywood Masonic Temple brought together a distinguished group of experts on the subject. (Left to right) James Danforth, Wally Gentleman, CSC, Linwood Dunn, ASC, Howard Anderson, ASC, Bill Hansard, Jack Kinney, and Art Cruickshank, ASC. This panel followed SPECIAL EFFECTS program at Hollywood Paramount Theatre in which these "screen magicians" held the audience spellbound for four hours.

Without a doubt, the most popular event of the International Cinematographers Conference was the session entitled SPECIAL EFFECTS PHOTOGRAPHY. It was open to the public, held at the Paramount Theatre and was sold out far in advance.

The moderator for this session was Linwood Dunn, ASC, President of Film Effects of Hollywood and, for many years, one of the top "movie magicians" in the industry. It is this element of seeming "magic" that fascinates the layman when he is exposed to the subject of special effects.

Lin Dunn is to be congratulated for assembling a monumental program which illustrated, by means of film clips, just about every kind of special effect ever used in production. For four solid hours, he and his fellow special effects experts held the capacity crowd spellbound and the time seemed to fly.

Starting off the program, Dunn showed several examples of his own work, which included the WEST SIDE STORY overture sequence, multiple matte shot sequences from ANDROCLES AND THE LION, and the famous sequence from KING KONG in which Kong climbs to the top of the Empire State Building.

Next was shown the earthquake sequence from SAN FRANCISCO, directed by John Hoffman and photographed by Loyal Griggs, ASC. This was followed by the intricate parting of the Red Sea sequence from DeMille's TEN COMMANDMENTS, created by John Fulton, ASC and Paul Lerpae.

Dunn next called upon Farciot Edouart, ASC to show and comment on shots demonstrating the use of rear-projection. Next on the program was the horrendous train wreck sequence from THE GREATEST SHOW ON EARTH, created by Gordon Jennings, ASC and Paul Lerpae. A delightful sequence by Ub Iwerks followed from Disney's SONG OF THE SOUTH, which featured a smooth blend of live action and animation.

Returning to his own work for a bit, Dunn showed the classic fire engine ladder sequence from IT'S A MAD MAD MAD MAD WORLD, followed by the collapse of the Eiffel Tower final scene for THE GREAT RACE. As an example of blue screen matting, he showed the storm in the Straits of Magellan sequence from HAWAII.

Dunn next called upon Art Cruickshank, ASC to comment on a sequence

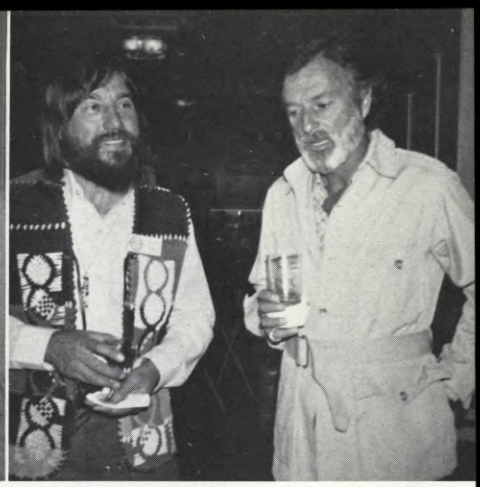
which he created for FANTASTIC VOYAGE, after which Danny Lee of Walt Disney Studios showed and described a spectacular sequence from the Academy Award-winning BEDKNOBS AND BROOMSTICKS.

Next on the program was L.B. "Bill" Abbott, ASC showing his awesome ship capsizing sequence from THE POSEIDON ADVENTURE. This was followed by Jim Danforth showing one of his sequences from WHEN DINOSAURS RULED THE EARTH.

Dunn wound up the program with a showing of the Academy Award-winning short, A PLACE TO STAND, which had been created for the Ontario Pavilion at EXPO 70. It had been directed by Chris Chapman, and photographed by Barry Gordon, with multiple-image matting by Dunn's company.

Still fascinated after sitting through four hours of movie magic, there were those in the audience who wanted to stay and discuss the effects, but since this was impossible (because of another program scheduled into the theatre), they were invited to meet with the experts on the following morning at the Masonic Temple, where an informal discussion was held and many of the matte paintings and miniatures used in the sequences shown were available for examination.

Looking back, it can be said that the International Cinematographers Conference of FILMEX 1974 was a great success on many levels. For the laymen who attended, it provided a fascinating peek behind the scenes of the most glamorous industry in the world. For cinema students and serious film buffs, it was a chance to talk informally with the top expert cinematographers and special effects technicians and ask them specific questions about various techniques. And for the members of the American Society of Cinematographers, it was a golden opportunity to get to know and exchange ideas with their colleagues in cinematography from all over the world. ■



At A.S.C. reception for visiting cinematographers and other guests from abroad, some of the A.S.C. members who had not seen each other for a long time had a chance to get together again. (LEFT) Howard Anderson, ASC chats with Stanley Cortez, ASC. (RIGHT) Vilmos Zsigmond, ASC discusses techniques with Conrad Hall, ASC. These gentlemen meet only occasionally because they are almost always on location.

Panelists at a workshop on LIGHTING STYLE AND TECHNIQUE, held at the A.S.C. Clubhouse, listen to a question from the audience. They are (left to right) Subrata Mitra (India), Laszlo Kovacs, ASC and Lee Garmes, ASC. At these workshops, cinematographers usually screened examples of their work to illustrate points of subject under discussion. Questions from those attending stimulated further discussion.

On display at the informal discussion of SPECIAL EFFECTS were some of the "tools of the trade" used by specialists in this field. (LEFT) A matte painting used by Film Effects of Hollywood to add five vintage sailing ships (inexpensively) to the scope of the film HAWAII. (RIGHT) In background, a matte painting used by Film Effects to aid in filming the extremely intricate fire engine ladder sequence from IT'S A MAD, MAD, MAD, MAD WORLD. In front, miniature monsters from WHEN DINOSAURS RULED THE EARTH.

CINEMATOGRAPHERS FROM ABROAD SPEAK OUT

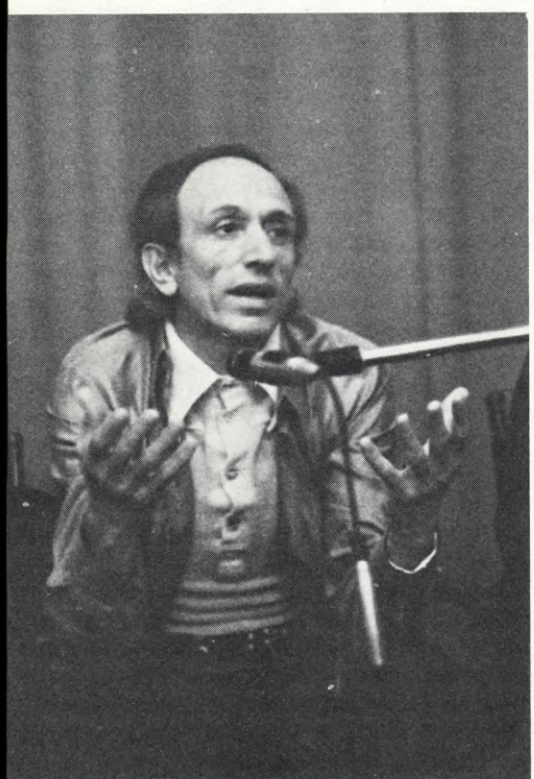
Cinematographers from far-off lands meet at FILMEX to discuss their working methods and compare them with those of Hollywood

The high point of the Cinematographers Conference at FILMEX 1974 was the presence of a group of highly talented Directors of Photography from a number of foreign countries.

During their visit to Hollywood, they were guests at a series of seminars and panel discussions which attracted capacity attendance in every case.

The following interviews were conducted on assignment by Nicholas Pasquariello, so that *American Cinematographer* readers might share in some of the ideas exchanged during the seminars of the Cinematographers Conference. Mr. Pasquariello asked essentially the same questions of the four cinematographers whom he interviewed, with the aim of finding out how the equipment and methods used in the film industries of their native countries differ from those prevalent in Hollywood.

Italian cinematographer Carlo DiPalma, who photographed RED DESERT and BLOWUP, describes working techniques at FILMEX seminar.



ROBIN COPPING—Australia

Director of Photography

A native of England, Robin Copping has for more than ten years been working as a Director of Photography in Australia, shooting primarily TV commercials, documentaries, and TV drama. Since 1971, he has been devoting nearly all of his working hours to lensing Australian features: STORK (1971), ALVIN PURPLE (1973), and PETERSEN (1973), the latter soon to get international release. Mr. Copping is a partner in the firm of Bilcock and Copping Film Production Limited, which, since 1968, has produced numerous TV spots, and, to date, has completed two theatrical features.

QUESTION: Can you tell me what cameras you work with in Australia?

COPPING: Almost exclusively Arriflexes on feature work; we have a Cameflex but if we're using our own camera equipment we stick mostly to Arriflexes.

QUESTION: What model is that?

COPPING: Model 2C with sync-pulse, and we work with a 120S blimp.

We've actually had an Arriflex 35BL on order for about eight months in Australia, and I tried to pick one up here for our next film, and, although they can supply it very much quicker than I could hope to get one in Australia, it still wouldn't be in time for the next production.

QUESTION: What kinds of lighting equipment do you use?

COPPING: It depends on the kind of set-up. If I'm doing studio shooting I use a lot of standard incandescent lamps from 5K's down to inkie-dinkies. I use inkie-dinkies an awful lot, actually.

I would think I would tend to use a heavy complement of 2K's in the studio and pops [a 750-watt globe] more often than 5K's. Those would be the occasions [in the studio] where I'd mostly use incandescent lighting, but on location I use quartz lighting much more, especially the small ianebanes [in the laniro line of lights]. We use a tremendous number of these lights [laniros]: you can get them from 5K to 2K to 800-watts.

Apart from these, one of my favorite lights is the ColorTran Soft-lite. I use those a tremendous amount.

We have about five of those altogether, ranging from the big four-kilowatt to the two-kilowatt. I also have a couple of the American Mole-Richardson soft-lites, the little babies, which are very useful. I like those very much.

We have quite a variety of different makes: we use a local make (Barton), we have ColorTran, we have Mole-Richardson American, Mole-Richardson England, plus a lot of the various laniro makes. So, we've got a very mixed bunch of lighting.

I usually carry [on location] a lot of lights, but not many heavy-duty lights. The heaviest-duty lights that I would normally carry would be MiniBrutes, and I'd take usually only four or five of those. Occasionally you might get a very big job where you need half a dozen or more—that's usually only for a fairly extensive night shoot—and, since we're usually trying to work quickly, we will compromise our shots and limit our shots in order that we can make a time schedule. We're not, at this stage, able to indulge ourselves in sort of doing very, very complex night shots, covering large areas, for that reason. It's not that we don't want to or we don't know how to; it's purely a matter of time and cost and the number of crew we employ.

QUESTION: What are the types of films you usually work on?

COPPING: I used to work mostly on TV commercials. I actually spend more shooting days a year on features than I do on TV commercials. I direct TV commercials; I very seldom photograph them; whereas, so far, I have been just Director of Photography on features,

although on the next film that we do I'll be Director of Photography, and Co-Director.

QUESTION: Is there any one line of lighting equipment you tend to depend on more than others?

COPPING: I'd hate to be in that position, really. For TV commercials, I could say yes, I'd probably use the big Mole-Richardson Soft-lites a lot, because you often do work in a rather stylized way. But, no, I'd hate to be restricted to just one type of lighting; it's just not the way that I work or I've been brought up to work, if you like.

I use inkies an awful lot and I tend to use very low-power lighting most of the time, especially on night interiors. So, I very seldom use zoom lenses, for instance, on night interiors or exteriors, simply because I'm usually lighting to anything from about f/2.3 and 2.8. You've got to have control. You can't control a soft-lite, and you can control an inkie-dinky or a pup (Junior) or a 2K.

QUESTION: How large are the crews you generally work with on features?

COPPING: We believe that it's not really economical to work with fewer than twenty people on 35 mil. If you're carrying a ColorTran dolly all the time and a 120S blimp, plus a standby camera and lighting, then, apart from a director, you've got to have a first assistant and a four-man camera crew. We also have a gaffer, a best boy, key grip and, usually, an assistant grip. This is so the bulky work can be done really quickly, and, sure, a lot of the time they sit around, but, at the same time, we still feel it's much better to get a set-up immediately and get stuck into the day's shooting quickly, than it is to sort of have everybody really stuffed before you begin shooting. (Other than the people I've mentioned, we use: continuity, the art department is usually three people: art director, set dresser, prop buyer; lately we've been using a hairdresser, as well.)

QUESTION: How about the size of crews for TV spots?

COPPING: Depends. We can work anything from a three-man crew to an eight-or nine-man crew. We don't often get above that, though.

QUESTION: What kinds of lenses do you use?

COPPING: I like to use standard lenses. If we had a complete set of Series III, Taylor Hobsons—this is for shooting on standard 35 mil.—I'd choose Series III Cookes every time. We use a combination of lenses—which would be frowned on by a lot of cameramen—because it ranges from Zenan to Schneider to Series II Cooke, to even, in some cases, Series I Cooke. I've carried out tests on these and they balance reasonably. I would much prefer, obviously, to shoot with just one set of matched lenses, but, at this stage, we haven't got ourselves in the position where we're able to.

We use the 10-to-1 Angenieux zoom, which we have two of, and, for the next film we're going to have a Canon Macro-Zoom, the 25-to-120. This is a T/2.8 lens, which is much faster than the Angenieux. Also, it means that you can put it in the blimp and focus very, very close on a face and still dolly back and pull focus, which you can't do on the Angenieux. You can't actually start in very close [with the Angenieux] and pull back. You've got to be at least seven feet away from the subject, which is fine if you can use the 250mm end of the zoom, but if you're in a room like this [a medium-sized hotel room] and you have your subject five feet from the wall, you just can't focus without supplementary lenses, which means that if you then start dollying sideways and you get more than five feet away you can't pull focus, but you can do this with the Canon zoom.

QUESTION: Do you think that your style of lighting is affected or molded, as it were, by the equipment you use?

COPPING: Not the style of lighting, no; the effects you get must be controlled, and you can only control with certain types of equipment. You have to choose incandescent or quartz lights for the right reasons, but the style of lighting is something which is entirely different—that is something which is really a personal thing. What has affected my style most of all has come about through watching other people's films and trying to emulate what I've seen and liked. We had a seminar the other day where people were talking [at the Filmex Cinematographer's Conference] about the effects of the media on film lighting or filmmaking, and Connie Hall came out with the statement that, really, it's a superfluous subject, because most cinematographers are really affected in style of lighting by other work that they see on film, and certainly this would be true for me.

QUESTION: Do you use post-flashing in your work?

Robin Copping, cinematographer from Australia, listens attentively during cinematography workshop held at the American Film Institute.

Cinematographer David Sanderson, also from Australia, believes that the cameraman should function as the director's "right-hand-man".

An Australian film crew on location moves the camera into position for a dolly shot, while Director of Photography Robin Copping (in dark sweater, with arms folded) surveys the scene. He believes that it is not really economical to work with a crew of less than 20 on a 35mm feature production, though much smaller crews are used for TV commercials.

COPPING: No, I've carried out a few tests, but at this stage I'm not confident enough in the labs to use it for a major project. If I could do two weeks of testing that would be fine, but to do one day's testing, that's not enough.

QUESTION: Are you generally pretty confident with what the labs do?

COPPING: I have reservations, although, from what I've heard, so do most cameramen in Hollywood—so, if they do, it's pretty natural that we should, too.

QUESTION: In my conversation with Carlo DiPalma, he expressed nothing but the highest praise for the labs in Rome.

COPPING: Well, I had some black and white processed in Rome last year and there's an English lab contact there by the name of Roy Logan who is absolutely incredible. I wish Australia had a few Roy Logans because he is so conscientious—followed through every phase of postproduction in terms of lab work. I think if you have the right contact he can give you full reports on everything that happens. Logan goes out of his way to do so, including dropping by at your hotel on the way home and spending an hour with you, if necessary. Half the thing is contact and keeping something on a personal basis, which, I think, is a cameraman's job.

QUESTION: But don't you think it's the lab's job as well?

COPPING: It is indeed. A lot of laboratories don't recognize this, especially in Australia. I think English labs are pretty good in this respect, but a long way from perfect.

QUESTION: What labs are available to you in Melbourne?

COPPING: There's only one lab handling 35 mil. color work, in Melbourne, which is Victorian Film Labs. They're a very good bunch of people. They've only been in 35 mil. color for about a year. (I still have my feature work done in Sydney: There are two labs that produce good quality work in Sydney.) I'm not really likely to change to the Victorian lab for feature work—I use them now for commercials—until I feel they're a little more experienced. They still have neg breaks, and I consider neg breaks just unthinkable on feature production. You can bear with it occasionally on commercials, but on features, no way.

QUESTION: How does the lab in Sydney that does your feature work manage to keep its doors open for features since last year, for instance, only six features were made in Australia?

COPPING: Well, they do a lot of work, in addition, from Indonesia, and a tremendous volume of TV commercials. Our company alone, which is only one of several dozen, would make about 200 commercials a year, at least—maybe 300. There's a complete protection: all Australian commercials have to be made by Australians, and processed by Australian labs, unless you pay very high duty rates. It is the one protection the industry has, enough to have kept the major labs going for a number of years. There are also a lot of documentaries made. There are a lot of films by Film Australia (what used to be called the Commonwealth Film Unit).

QUESTION: Do you tend to shoot more often in a studio or on location?

COPPING: We try to shoot on location but in the last two films—they've both been basically six-week schedules—we've had two weeks in the studio and four weeks on location. The only reason we've chosen the studio there is because we had as much as a week at one time on one set, so obviously it's much more convenient to stay in the studio then. But, in general, it does put our art direction costs up quite a lot, as well as our lighting costs, because we're using rather a lot more light in the studio than we would on location.

QUESTION: Is this equally true of location interiors?

COPPING: Very much more so, especially because the only thing we have to do it for is, let's say, actual house locations. Sometimes [we] supplement the power with a generator, and bring in props, and a little bit of art direction. It gets pretty expensive by the time we build the sets and hire the studios.

QUESTION: What is the biggest studio in Australia?

COPPING: The biggest one would be in Sydney. I guess the Porter studio probably is the biggest feature stage, and I'm not too sure that that hasn't been solved now. In Melbourne, Crawford's have three air-conditioned sound stages, but they're making TV series exclusively. And other than that, the previous biggest studio suitable for feature work has now closed down.

We've actually bought a large block of land and we are in the process of building a whole studio complex. I'd say it's at least a year away; it will take that long just to get the building done.

QUESTION: Could you describe the projected facilities?

COPPING: Basically, we're aiming at three studios: one, which would be something in the region of about eighty-by-sixty; a much smaller one, say, fifty-by-forty; and, then, a very small one, say, twenty-by-twenty. These are working thoughts, at the moment, because we haven't gone into architect's designs or anything like that. In addition to that, we're going to have a complete administrative block, which will house three separate companies: Hexagon, which is the main film production company; the commercial company, which is Bilcock and Copping, that's myself and my partner's own company; and Video Tape Corporation, which is the largest independent video tape organization in Australia—they have moved into Melbourne, they're working in conjuction with us.

QUESTION: How many features are made in Australia each year?

COPPING: Last year, I would think, there were in the order of about six. This year, I think, there will be anything between twelve and sixteen, altogether.

QUESTION: Does that include low-budget features?

COPPING: They're all low-budget features. The highest-budget feature this year would be in the region of $400,000 (Australian), so that's a little over half-a-million American dollars.

QUESTION: Why the tremendous increase over last year?

COPPING: There's been a lot of political pressure, apart from anything else. The previous Liberal government undertook to encourage and promote Australian film production, and one of the ways they did this was by forming an Australian Film Development Corporation. It was set up, initially, with one million dollars' worth of funds to finance Australian production. Now, this doesn't sound like an awful lot, but it was enough to enable quite a few producers to get things off the ground, which they wouldn't have done otherwise. Also, political pressure has been brought to bear on the major distributors to release quite a few of these films. Until last year or the year before last, it was virtually impossible to obtain a proper release through a legitimate exhibition chain, so this situation has been changed now.

CARLO DI PALMA—ITALY

Director of Photography

Carlo DiPalma began his work behind the motion picture camera as an assistant and camera operator on the early feature films of Luchino Visconti. In 1954, he became a Lighting Cameraman, and since then he has shot more than twenty features in his native Italy.

Today, Carlo DiPalma is generally recognized as one of Italy's finest cinematographers—some would say he is the finest artist/technician at any cinematographic helm in Italy. Among the best examples of his work are: RED DESERT and BLOW-UP, two color features he shot for Michelangelo Antonioni. He recently directed his first feature (shot by his nephew, Dario DiPalma) in Italy.

QUESTION: What types of film stocks do you shoot with in Italy?

DI PALMA: Eastman Color 5254. I believe there's no better stock in the world. I've made tests [on other stocks as well as Eastman] but I've found that no other film is yet complete.

QUESTION: Have you done tests on Agfa stocks?

DI PALMA: I've made my own tests and it isn't that I want to talk badly of Agfa type film, but it's just that in my country we don't yet have the knowledge to use it properly. In Germany they probably have the laboratory facilities to completely handle that type of film, but in Italy they don't yet have them. And what I myself personally know is that in almost all of Europe most of the people that I associate with only use Eastman Kodak film. I myself have used Eastman Color for all of the features on which I have been the Director of Photography.

QUESTION: What cameras do you use?

DI PALMA: Mitchell cameras and the Arriflex.

QUESTION: Under what circumstances would you use each type?

DI PALMA: The Arriflex I like to use myself, with my own hands, to get particular details, but it's only used as a backup camera (a second camera) to the Mitchell. For instance, I use the Arriflex when I'm sitting in an automobile when I'm following with a zoom lens, or in an intimate love scene, or in a fight scene, where you have to go to look for the faces, following them in rapid movements. I take almost all of my retake shots in crowd scenes or in automobiles with an Arriflex.

I use the Mitchell for master shots. Of course, compared to the Mitchell, the Arriflex is a much noisier camera.

Continued on Page 726

A scene from THE MOMMILA MURDERS, a feature made in Finland and photographed by cinematographer Heikki Katajisto. Since the Finnish film industry produces few features—only six during the past year—Katajisto averages one feature a year and divides his time between that and directing TV commercials.

A.S.C. MOURNS HAL MOHR

"Never do any job purely for the money you may receive for it because it's better to have a few dollars less and retain your self-respect than to compromise your profession."

With Hal Mohr's "retirement" from the motion picture industry, he threw himself into the image of the cameraman. Mr. Mohr has served for four different terms as president of the American Society of Cinematographers and since 1929 on its Board of Directors. At the time of his demise he was the President of the Hollywood cameramen's local and in that capacity had traveled throughout the country promoting cameramen and contributing to the history and greater knowledge of the industry.

Hal Mohr began his career as a cameraman because of an inquisitive mind and a desire to find out how to make his pictures move. He managed to turn an Optagraph projector into a camera and later a printer when he found that he had developed a negative and still had to produce a positive in order to see the film he had shot.

He sold his "unauthorized" film of the Panama-Pacific Exposition groundbreaking ceremony by President Taft for enough to pay for the film, with a few cents left over.

Although his first love was moving pictures he took a job in a still photo lab as a photo finisher to perfect his knowledge.

At 19, he produced and photographed his first feature film called PAM'S DAUGHTER which was never made public due to the problems of motion picture distribution.

His move to Hollywood in 1915 found him working at Universal City during its first year of existence.

At the outbreak of World War I he got a job with Harold Lloyd Comedies as a director.

Shortly thereafter he became a doughboy and the end of World War I found him back in San Francisco and later Portland. Since he felt there was a greater future for him in Hollywood, he returned to work on "Poverty Row" and if he was lucky enough he got paid for the job he was doing.

He photographed the first talkie, THE JAZZ SINGER, in 1927 for Warner Brothers and in 1933 received an Academy Award for his filming of MIDSUMMER NIGHT'S DREAM at Warners. In 1943 he received another Oscar for THE PHANTOM OF THE OPERA filmed for Universal. THE FOUR POSTER won Mohr a nomination in 1952.

Mohr was a pioneer member of the Academy of Motion Picture Arts and Sciences, and a senior member of the Academy's Board of Directors. He represented the Academy's Cinematography Branch for more than half of the organization's 46 years. He was also a member of the Academy of Television Arts and Sciences.

Mr. Mohr is survived by his wife, the former Evelyn Venable, one son, four daughters, seven grandchildren and 17 great-grandchildren. ■

You don't have to have an academy nominee to get release prints by DeLuxe.

Doing business with the biggest film lab in the world doesn't mean you have to be one of the majors. You can be who you are. And your film can be any size. From 70mm to Super 8.

We handle full-length features like "Cinderella Liberty" and "Last Tango in Paris." We handle advertising commercials. And, we handle industrial and educational films like those we've done for North American Rockwell and the Long Beach school system.

You want the best quality release prints at the right price. At DeLuxe General, that's what you get. Everytime.

de luxe general INCORPORATED

color by de luxe®

Hollywood, 1546 North Argyle Avenue, Hollywood, Ca. 90028 (213) 462-6171
New York, 630 Ninth Avenue, New York, New York 10036 (212) 489-8800
Chicago, 1000 Nicholas Boulevard, Elk Grove Village, Ill. 60007 (312) 569-2250

Get the newest edition of the bible.

Almost Free.

We'd like you to have our newest catalog as a gift. But there's so much in it and it's so expensive to organize and print, we're forced to charge a nominal $5.00 for it.

Yet we'll return that $5.00 with your first purchase or rental of $50.00 or more from SOS. So it's almost free. Send for your catalog now. It's actually a reference for the industry containing every kind of item used in motion pictures. You shouldn't be without it.

The new SOS catalog has over 300 information-packed pages. Over 7,000 pieces of equipment described in detail. Hundreds of illustrations. Latest models of motion picture cameras; production accessories; VTR and closed circuit TV; editing; theater and projection; printing and processing; sound gear; animation; lighting; technical books.

SOS
SOS PHOTO-CINE-OPTICS, INC
A DIVISION OF F&B/CECO INDUSTRIES, INC.

315 West 43rd St., New York, N.Y. 10036
Phone: (212) 586-1420

7051 Santa Monica Blvd., Hollywood, Calif. 90038
(213) 466-9361

SOS Photo-Cine-Optics

Here's my check for $5.00. Please send me the newest edition of the SOS catalog and a certificate worth $5.00 toward rental or purchase of $50.00 or more.

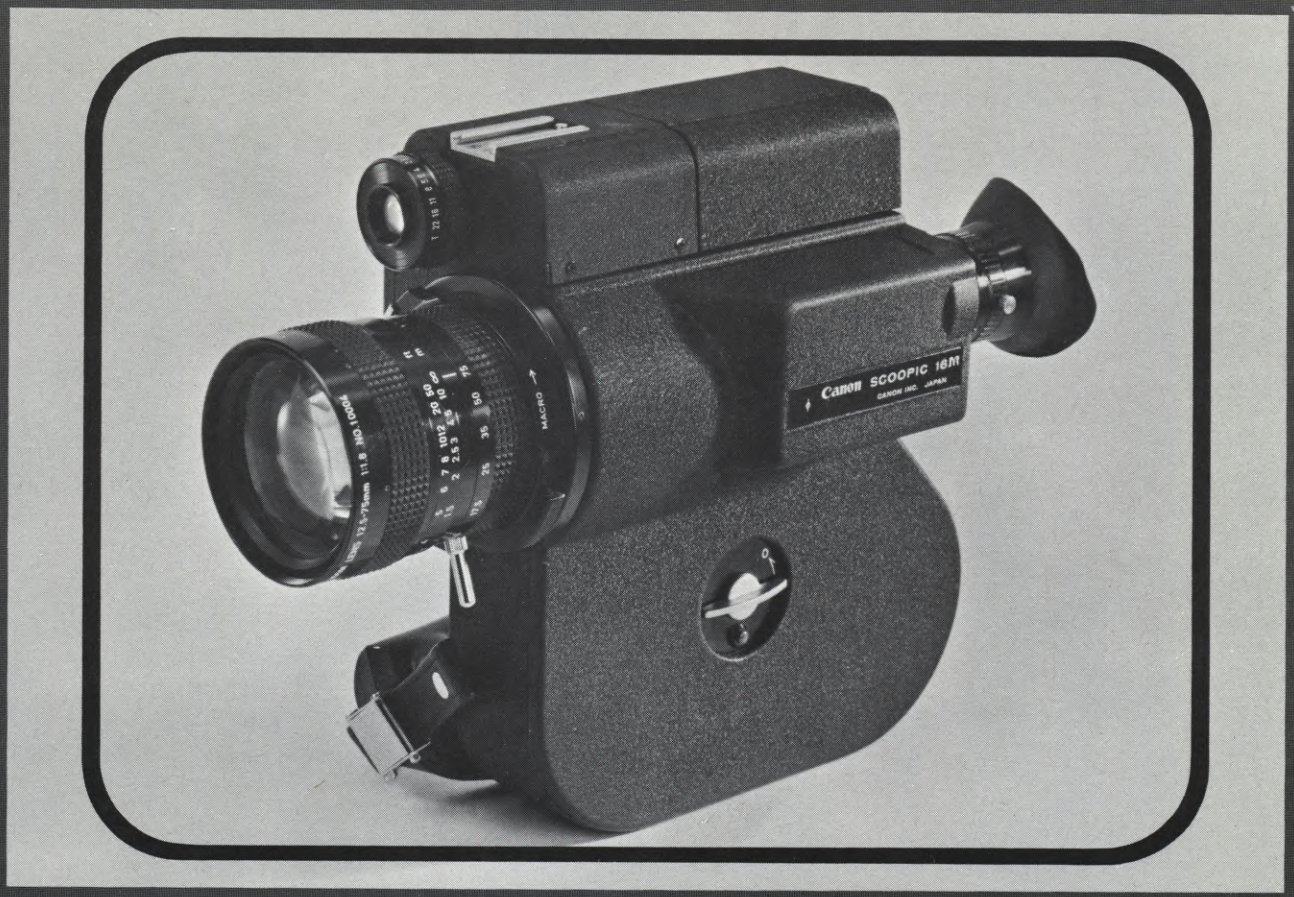
Name _____

Firm Name _____

Address _____

City _____ State _____ Zip _____

Good news for news.



There are times when only the new Canon Scoopic 16M can bring back the footage. Because it's the truly professional 16mm reporter that goes anywhere you go.

For such a newsworthy camera, the Scoopic 16M is surprisingly light — less than 7½ lbs. And thoughtfully designed, so it's completely natural to hold, to handle, to control. Yet, with all its compactness and maneuverability, the new Scoopic 16m is rock-stable, even on the run.

No wonder it's the unique camera that's perfect for television news and documentary work. Take a look through the viewfinder up above and you'll see for yourself what we mean.

The TV frameline is clearly defined. So, even as you shoot the raw stuff, the end is always in sight. That means shooting remains under control in the fastest-moving circumstances. And you're on the air sooner, with less editing or wasted footage.

The reflex viewfinder is offset to the side of the camera body, and the view through it is now brighter than ever. An all-matte screen makes for faster focusing anywhere in the frame, and also lets you check out multiple focusing points in advance, for faster and more accurate zooming once the action starts.

The eyepiece can be closed to prevent light backflow from altering your readings, and to maintain perfect exposures. The eyepiece is also optically adjustable, so you can work without eyeglasses, if you wish.

A servo-controlled automatic exposure system (ASA 20 to 640) frees you for fast-changing situations, especially where light varies unavoidably and unexpectedly. But you can still work your exposures manually when you prefer. And you see your T-stop in the finder, along with under- and over-exposure warnings. So you know where you are at all times.

The new built-in battery system helps to keep you going, too — through 1600 feet of film at 24 frames per second on a single charge! The 12-volt NiCd is fully rechargeable in about 3½ hours, and external power supplies can also be used .

Filming speeds now include single frame as well as a range of 16 to 64 frames per second, bringing with them the potential for imaginative special effects — plus the ability to handle rough-motion filming without losing projection quality.

The Scoopic 16M comes with a fast new f:1.8 Canon Macro Zoom lens. In addition to Canon's unsurpassed reputation for sharpness, contrast and color accuracy, it has built-in macro capability. Focusing begins at 3½ inches from the front of the lens, and goes from here—to eternity. Focal length ranges from 12.5 to 75mm, so you'll go in and out of the action with unparalleled smoothness at a zoom ratio of 6 to 1.

Working professional or serious filmmaker, you'll find the new Scoopic 16M a rugged, versatile, utterly dependable camera of high precision. It's the sweet 16, now sweeter.

See your local authorized Canon dealer for a demonstration, or write directly to Canon for more information.

Canon®

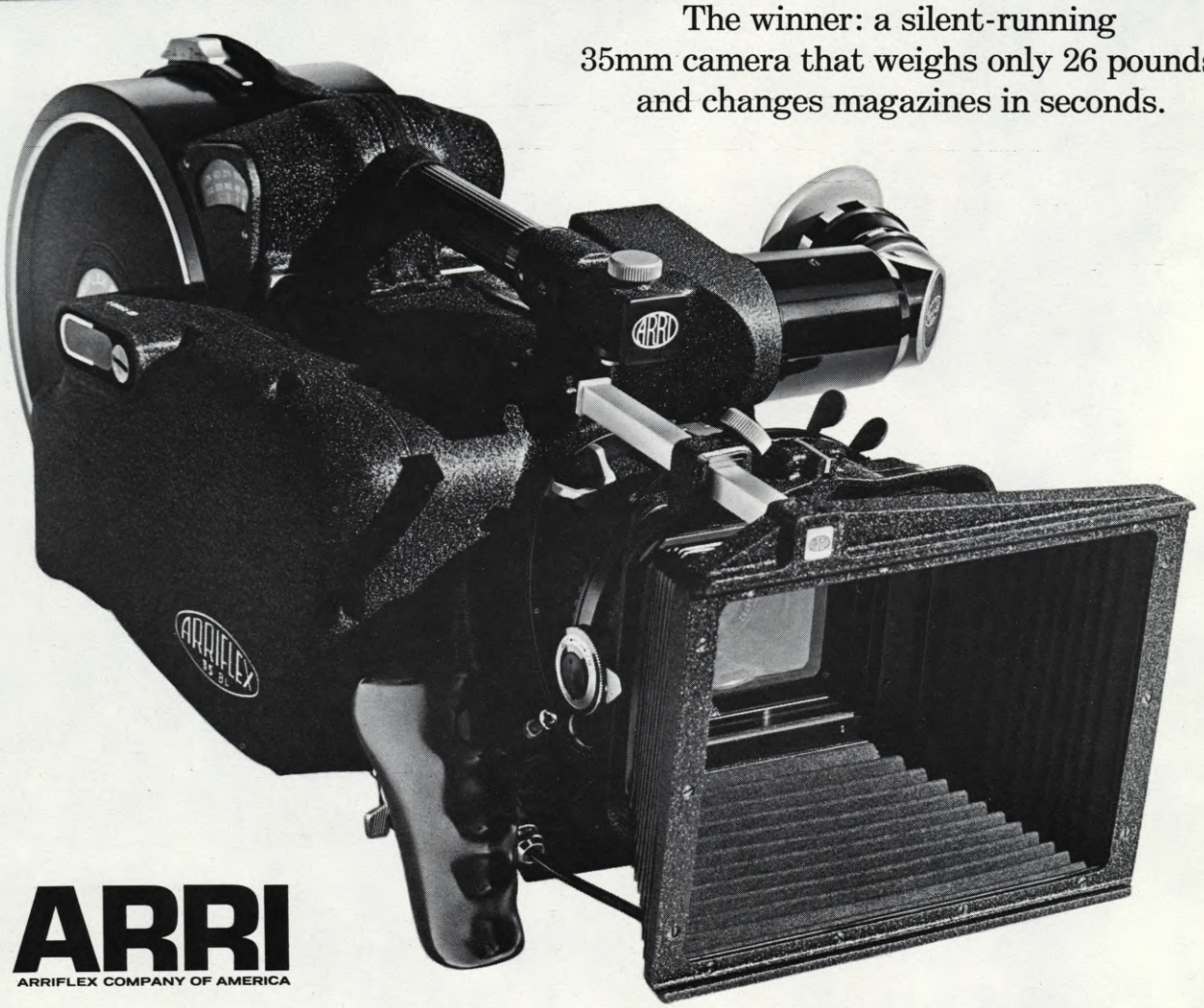
Canon USA, Inc., 10 Nevada Drive, Lake Success, N.Y. 11040
Canon USA, Inc., 123 East Paularino Avenue, Costa Mesa, California 92626
Canon Optics & Business Machines Canada, Ltd., 3245 American Drive, Mississauga, Ontario

LEPKE

TITLE DESIGN
DAN PERRI

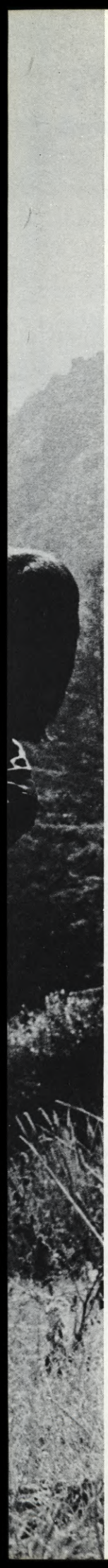
We're proud and honored to announce that the Arriflex 35BL has won an Academy Award.

The winner: a silent-running 35mm camera that weighs only 26 pounds and changes magazines in seconds.



ARRI
ARRIFLEX COMPANY OF AMERICA

Arriflex Company of America: P.O. Box 1050, Woodside, N.Y. 11377; and 1011 Chestnut St., Burbank, Calif. 91502



"Slash! Kick! Chop! Violence galore! That's the kind of Saturday afternoon movie action contained in the original 'Kung Fu' script.

"I was lucky enough to be the cinematographer on the 'Kung Fu' episode that eventually won several Emmys. I relied heavily on Jerry Thorpe's already established cinemagraphic style. Like the use of long lenses in flash-back sequences for a two-dimensional effect, and slow-motion in the fight scenes to get a kind of lyricism. You know, working with Jerry really does make film the artist's medium.

"'Kung Fu' was intended only for Asian distribution, when Jerry was asked to make a television pilot out of it. The first thing he did was have it rewritten.

"His creative influence helped make it the success it is today.

"We just finished doing a picture together. It's a detective story shot almost entirely on location. In bars, outdoors in the street, in courtrooms. Because we're on location where the lighting's usually difficult and considering the rapid pace Jerry sets to give himself more time for experimental shots, it's good that I can rely on the quality of Eastman film.

"There was one sequence where Jerry wanted a stunt man to jump off a building because he thought a dummy falling just wouldn't look right. OK, but ten floors? Anyhow, the stunt man did it and I'm sure he's just as glad as I was that we were using Eastman film.

"I mean, that's not the kind of thing you like to do over and over."

Up on the crane, two Emmy award winners: (left) Jack Woolf, cinematographer; (right) Jerry Thorpe, producer/director.

THE MOVING CAMERA

Excerpts from one of several workshops that highlighted the recent International Cinematographers Conference at FILMEX

One of the workshops of the International Cinematographers Conference, held during FILMEX, was devoted to *The Moving Camera.* It took place at the A.S.C. Clubhouse and the panelists were: Charles Clarke, ASC; Vilmos Zsigmond, ASC; and Marc Champion (Canada).

Projected on the screen was a scene from the Universal film SUGARLAND EXPRESS, which was photographed by Vilmos Zsigmond. The scene selected was an example of a most unusual type of moving camera shot. In it, the car containing the fugitive young couple and their captive state trooper is speeding down the highway. The commander of the state troopers pursues them and Goldie Hawn, sitting in the back seat of the car, first catches sight of him through the rear window. As he pulls abreast of them on the left and engages in some dialogue, she threatens him with a shotgun, whereupon he speeds up and gets ahead of them. After more dialogue on the radio, he falls back on their right and remains there until finally letting them pull ahead.

This entire sequence was actually filmed in one continuous scene, without any cuts. The camera operator was located in the back seat of the car with Goldie Hawn and, during the course of the shot, actually rotated the camera in a 360° arc—although this is not noticeable, due to the fact that the movement was not one continuous pan, but a series of shorter moves. The following are excerpts from the discussion which took place during the screening of this scene.

QUESTION: What camera and lens did you use to photograph that scene?

ZSIGMOND: I used the Panaflex, with a 30mm lens. This lens has a tremendous depth of field and we shot, as I recall, at F/16, which was the aperture opening I felt was safe to use while following the focus blindly. We didn't use any lights inside the car on that shot because there was no place to put a light. There were three actors, myself, a tripod and camera inside the car—so there was no room left for any lights at all. The light outside was something like F/32 and we would have needed something like four 10K's to light the faces to balance. The only way to get the shot was to expose it in the middle and flash it, which helped a lot. You figure your highlights at F/32, shoot it at F/16, flash 25%—and pray for it to come out all right.

QUESTION: But don't you think it would have helped to have more light on the faces—assuming that there was a way to light them?

ZSIGMOND: Certainly. You would like to see more light on the faces and I would like to see more light on the faces, but you just can't do it. You have to decide which is more important: a nice light on the faces or the excitement of such a shot. The director was going for the excitement, and I had to agree with him. Basically, I think like that. I would give up lighting, I would give up anything if the director thinks we are going to get a good result and an exciting shot.

QUESTION: All of that action takes place in one continuous shot. Wouldn't it have been easier to shoot it in a series of separate cuts?

ZSIGMOND: It surely would have, but we were aiming at getting it in one continuous shot. I had to do my best and hope that it would come out all right, so that the director could use it in one shot. It happens many times that the director wants a shot like this that is very difficult to get. You manage to get it and everybody is happy and, at the dailies, you get great applause. Then, when the picture comes out, that shot is chopped into five pieces and intercut with other shots. You ask the director what happened to the shot and he says, "Well, it didn't work. It slowed down

Cinematographers Marc Champion (left), who alternates assignments between Canada and France, and Vilmos Zsigmond, ASC shown during workshop on THE MOVING CAMERA, held at the Clubhouse of the American Society of Cinematographers in Hollywood during the International Cinematographers Conference of FILMEX. Zsigmond discusses a tricky 360° shot from his work on THE SUGARLAND EXPRESS.

the rhythm of the picture." So you have to be sure that the director gets his best out of the actors, also. Otherwise, your great scene may end up on the cutting room floor.

QUESTION: How do you decide whether or not to shoot a scene like that hand-held?

ZSIGMOND: Well, the Panaflex is a lightweight camera, but it still tires you a bit when you hand-hold it for rehearsal after rehearsal and take after take. I think that for a shot like this it's best to put the camera on a tripod—if that's possible. In this way you would at least have a good steady shot at the beginning and a steady shot at the end. If you shoot it hand-held, chances are that you will have too much vibration at the beginning and at the end, which will limit the use of the shot. In my opinion, you should use a hand-held shot only when there is a need for it, only if it adds to the excitement of the shot. If you want a documentary look, that is when you should use the hand-held shot. Otherwise, I feel that the camera should always be on a tripod.

CHARLES CLARKE, ASC: I'd like to make a comment, although maybe I shouldn't. That scene that Vilmos did in the car was extremely effective. It had meaning and it really helped tell the story. But I think there is now a tendency to dream up tricky, complicated shots that do not always, necessarily, further the story. They are done as a gimmick, to see how tricky you can get with the shot. Then, as Vilmos pointed out, you have to sacrifice on the lighting. I think that there are situations—especially when important lines of dialogue are being delivered—when you ought to be able to see the people. Now, a tossed-away line you can do in silhouette or backlighting, but when you've got plot lines that are important to the story, I think it's safer to see the people, as well as hear them. I can remember that at our studio, 20th Century-Fox, they were doing the PEYTON PLACE television series. Every week they would change the director and every director would try to outdo the others with some kind of tricky shot. They were wandering all over the place and demanding that actors hit marks to a quarter of an inch—and they were sacrificing performance in order to get a complicated shot. Bear in mind that this was a dialogue vehicle, not a stunt picture where you had to hoke it up with trick angles and such. It was the story line that counted and you didn't have to do those tricky things. There is now a great vogue to see how tricky you can get and to do a shot that nobody else ever did before. This may make you great, but it doesn't necessarily further the story. I'm speaking now as an old-time cameraman, of course.

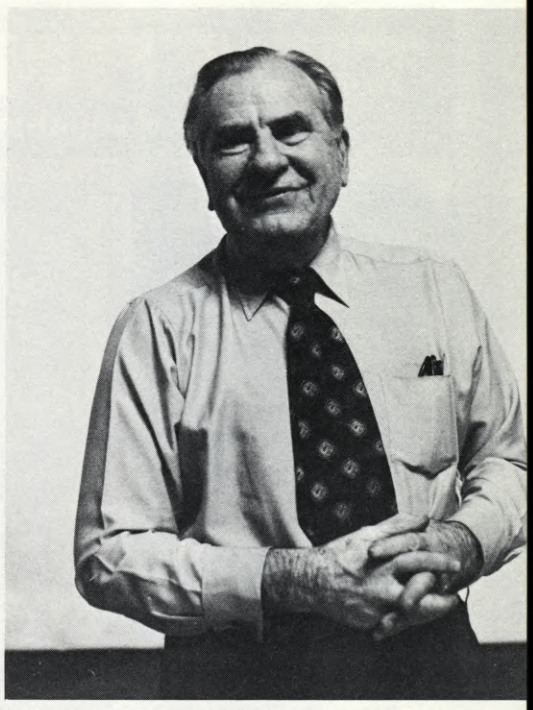
QUESTION: Don't you think that, because of the influence of documentary films and newsreels on TV, people have gotten a certain idea of how reality looks? Obviously, when you shoot documentaries and newsreels, you can't always stage things—so people have gotten used to this and certain things, like lens flare, are now acceptable. They're acceptable because it's important to capture a certain event, rather than the clarity of someone's face. Don't you think this has had a strong influence on the changing of styles?

CLARKE: No, I don't. I can't agree with that, because, in my day, the idea was to tell a story on the screen with the least mechanical reminder by a moving camera. If we moved the camera at all, we moved with the movement of the actors, so that the audience was never aware that we were using a moving camera. It was considered bad technique to call attention to the movement of the camera. Now, you spoke of lens flares. These happen with the use of zoom lenses, because you can't put matte boxes on them, as you can on fixed-focal-length lenses, to screen off the flare. In a realistic situation you never get flare in your eyes. It's not natural. It's not "cinema verité" to have a flare in your eyes, because if that did happen you would shut your eyes or change your angle. So, it is absolutely foreign to have a flare in the lens—but, because they haven't been able to avoid it when using zoom lenses, they've invented an excuse for it and said: "This is the new film; this is 'cinema verité'; this is something great!" They've made up an alibi to cover a thing that never occurs in nature. I can't help but feel that the audience is distracted by these things and that they defeat the story. When you're telling a story, the story is the thing—not how you did it with the cameras, or what film stocks you used, or who was pushing the dolly. Putting that story on the screen is what used to be important. I see films now and I don't know what they're all about—and I'm sure you've had the experience, too.

QUESTION (TO ZSIGMOND): What do you think about the directors of Hollywood?

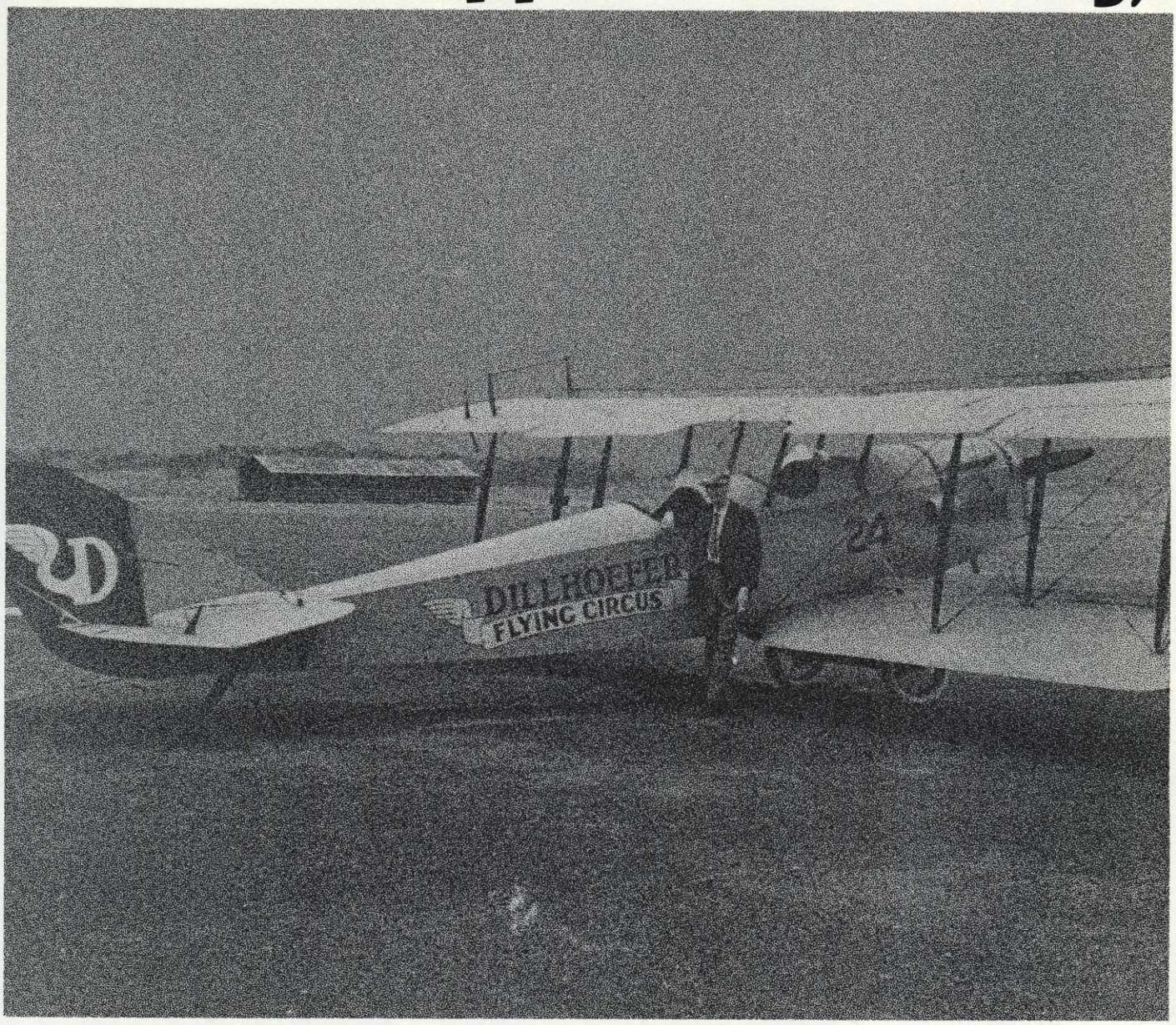
ZSIGMOND: I think that Hollywood has as many good directors as other countries have. Of course, I've been lucky enough to always work with good directors, and this has resulted in good photography. You cannot do good photography with a director who doesn't know how to tell a story on the screen. Charles is completely right when he says that the object is to tell a story with your camera. You cannot simply show your techniques and your lens flares for no reason. You cannot get away with it. I'm sure that today there are fifty cameramen in Hollywood who can get excellent lens flares, but that's not enough. I do think that sometimes you can use a lens flare in a way that has meaning. For example, in SUGARLAND EXPRESS there is a scene after a big shoot-out when the boy has been shot and he's dying in the car. Goldie has just gone through a terrible experience and she's in shock, completely out of her mind. The next scene is a shot that starts on an extreme closeup of her face. As we pull back, that light blonde hair of hers is in complete backlight, and as the camera pulls back even more, you have lens flares like you've never seen in your life—not even in EASY RIDER. I think it was a terrific moment for such a shot. There were those who wanted to cut the scene out or re-shoot it, but the director, Steve Spielberg, was very strong and he said, "I love it." From that point on everybody loved it. Luckily, it's in the film, and I'm proud of that particular lens flare.

Continued on Page 702



Veteran Director of Photography Charles Clarke, ASC, discusses a "dolly shot on ice" from the 1946 production of MARGIE, which he photographed.

For a fresh approach to filming,



barnstorm Texas.

To shoot the unshot.

Get a warmhearted welcome. And the friendliest of help on whatever you want. A computer, even, for finding your most unlikely shots. A videotape library for previewing photogenic spots. Like fresh-scrubbed skylines. Towns with foreign accents. Plus black forests, high sierras, and barren beaches for backdrops.

The tools of the trade are also stocked. The studios, film labs, and videohouses. Equipment for lighting, for sound, and sight.

Plus experienced artists and technicians. Prolific and talented. Either union or not.

Our number is really all you need to know. 512/475-3785. To turn globe-trotting into hedge-hopping for shooting the unshot.

Your central source for film production service

Texas Film Commission
Diane Booker, Director
Drawer P, Capitol Station
Austin, Texas 78711
512/475-3785

THERE'S ALWAYS SOMETHING NEW AND EXCITING AT SAMUELSONS

STAND EASY!

When we at Samuelson's first went into the Mobile business we were unable to find a range of lighting stands that would satisfy the special requirements of lightness, speed and ease of erection and folding coupled with an ability to accept all types of lamp spigots - so we designed our own which have proved so successful that our clients now prefer them, even though they may not be using one of the Sam - Mobiles.

Ⓐ SAMCINE WIND-UP STAND
Maximum height 8 ft. 9 in. Minimum height 4 ft. 11 in. Weight 24 Kilos. Maximum diameter 6 in. folded Features locking wheels and folding wind-up crank. Suitable for lamps up to lightweight Brute or 10 Kw.

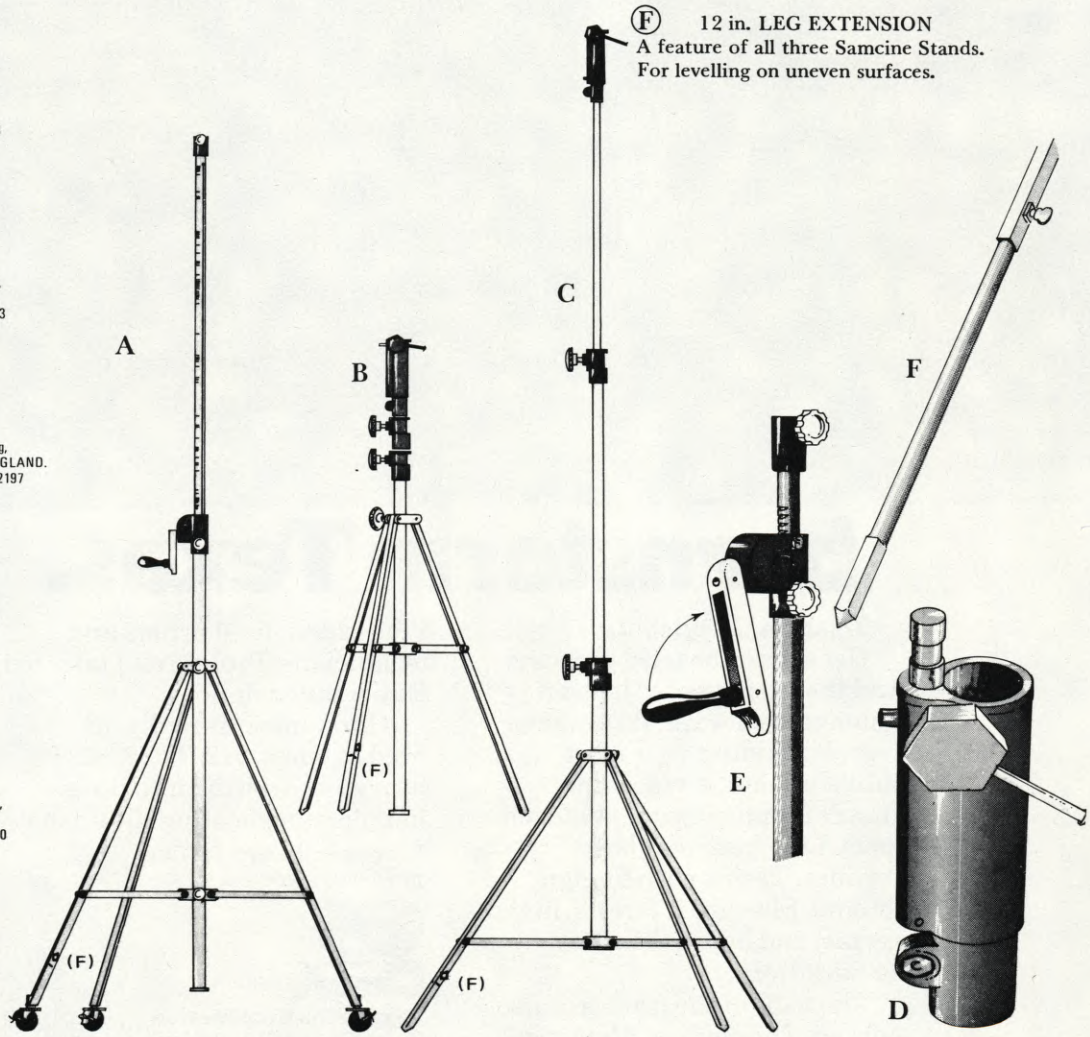
Ⓑ SAMCINE LIGHTWEIGHT STAND
Maximum height 9 ft. 8 in. Minimum height 3 ft. 4 in. Weight 4 Kilos. Maximum diameter 4½ in. folded Features ultra-light construction, universal spigot adaptor and leg levelling extension. Suitable for lamps up to 2 Kw. size.

Ⓒ SAMCINE UNIVERSAL STAND
Maximum height 11 ft. Minimum height 4 ft. Weight 10 Kilos. Maximum diameter 5 in. folded. Features universal spigot adaptor and leg levelling extension. Suitable for lamps up to 5 Kw. or Mini-Brute size.

Ⓓ UNIVERSAL SPIGOT ADAPTOR
Accepts 1 in. male or 5/8 in. male or female spigots.

Ⓔ FOLDING CRANK
(on Wind-Up Stand only)

Ⓕ 12 in. LEG EXTENSION
A feature of all three Samcine Stands. For levelling on uneven surfaces.



SAMUELSON FILM SERVICE LIMITED
303/315 Cricklewood Broadway, London NW2 6PQ, ENGLAND.
Tel: (01) 452 8090. Telex: 21430
Cables: Samcine London.

SAMUELSON ALGA-CINEMA SARL
24/26 Rue Jean Moulin, 94 Vincennes, Nr. Paris, FRANCE.
Tel: 328 58 30. Telex: 67260 F
Cables: Samcine Paris.

SAMUELSON FILM SERVICE AUSTRALIA (Pty) LIMITED
166 Willoughby Road, Sydney, N.S.W. 2065, AUSTRALIA.
Tel: 43 3243. Telex: 71 21588
Cables: Samsmeal Sydney.

SAMUELSON INTERNATIONAL B.V.
Oosteinderweg 261, Aalsmeer, Nr. Amsterdam, HOLLAND.
Tel: 02977 27701. Telex: 14613
Cables: Samcine Amsterdam.

SAM-MOBILE
303/315 Cricklewood Broadway, London NW2 6PQ, ENGLAND.
Tel: (01) 452 8090. Telex: 14613
Cables: Samcine London.

SAMFREIGHT
Room 65, Cargo Agent's Building, London (Heathrow) Airport, ENGLAND.
Tel: (01) 759 9969/70. Telex: 22197
Cables: Samfreight London.

SAMUELSON GENOP (Pty) LIMITED
Genop House, 15 Hulbert Road, New Centre, Johannesburg, SOUTH AFRICA.
Tel: 836 4275. Telex: 43 0057
Cables: Genop Johannesburg.

SAMCINE SALES LIMITED
303/315 Cricklewood Broadway, London NW2 6PQ, ENGLAND.
Tel: (01) 452 8090. Telex: 21430
Cables: Samcine London.

T.A.McGUINNESS & CO. LTD.
Temple House, Temple Road, London NW2 6PQ, ENGLAND.
Tel: (01) 450 4659 (2 lines)

PANAVISION®

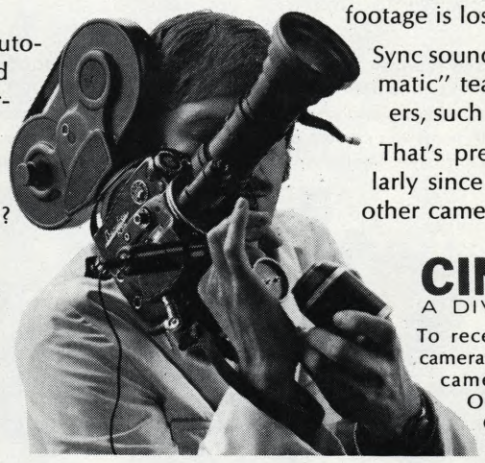
EUROPEAN MANAGING ASSOCIATES

Our cameraman isn't wearing it. He doesn't have to. Because Beaulieu's rechargeable nickel cadmium battery is built right into the camera handgrip. Powerful? The 1000 mA model will shoot eight 200 ft. magazine loads on a single charge. But just as important, you can replace the battery with a fully charged spare in seconds. With the Beaulieu 16mm, there's no need for batteries strapped around your waist or swinging from your shoulder.

Take another look at the R16B "Automatic". That's a 200 ft. daylight-load magazine on top, a sync pulse generator plugged into the side, and an Angenieux 12-120mm zoom lens out front. Now how much would you say the entire outfit weighs? Including the battery.

If you guessed as little as 12 pounds, you guessed too much. It's 10½ pounds! And the price is just a little over $2,650!

You don't have to give up critically important features, either.



Like rock steady pictures. Like a mirrored shutter, for reflex viewing with no prism between the lens and the film plane.

You also get the finest automatic exposure control system ever built. A Gossen light meter measures the light intensity coming directly through the lens. And it electronically controls a miniaturized motor that instantly rotates the Angenieux's diaphragm ring to the correct aperture setting. No footage is lost due to rapidly changing light conditions.

Sync sound is no problem. Your Beaulieu R16B "Automatic" teams up naturally with professional recorders, such as Nagra and Uher, for sync sound filming.

That's pretty good for a little over $2,650. Particularly since you couldn't get this combination in any other camera even if you spent twice as much.

CINEMA Beaulieu
A DIVISION OF HERVIC CORPORATION

To receive literature on Beaulieu 16mm and Super 8 cameras, or Heurtier projectors, please visit your finest camera store or write Cinema Beaulieu, General Office: 14225 Ventura Boulevard, Sherman Oaks, California 91403 or New York Office: 155 West 68th Street, New York City, New York 10023.

THE FILMING OF "DEEP SOUTH, DEEP NORTH"

Co-production of a public service documentary by the BBC and an American television station involves the use of 16mm color negative and sophisticated technology to solve the problems of location filming

By DAVID HUDSON

KOCE-TV Channel 50, Huntington Beach, California

The one-hour documentary TV film "DEEP SOUTH, DEEP NORTH" was produced by England's BBC network in cooperation with KOCE-TV Channel 50, Huntington Beach, California. It was shown in England on the BBC *"Man Alive"* omnibus series on May 15 and is scheduled for U.S. showing on the Public Broadcasting Service (PBS) in June. The film is a report on what has happened in both the South and the North in the 20 years since the Supreme Court's historic desegregation decision on May 17, 1954 *(Brown vs. Board of Education)*—as seen through the eyes of a British reporter. Location shooting for the film took place primarily in Montgomery, Alabama, and Detroit.

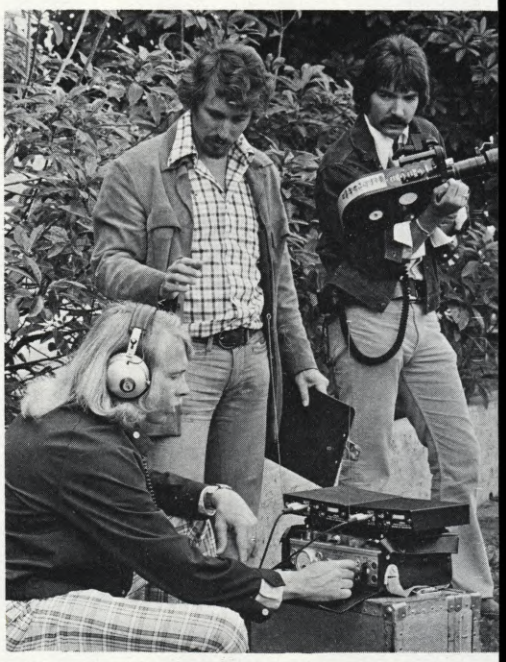
The idea for the film was originally conceived at BBC. BBC contacted David Fanning, a former staff member and now a producer for KOCE-TV, about the possibility of a co-production, since the available budget would not cover the cost of shooting on-location in the U.S. When KOCE-TV expressed interest, BBC assigned as producer-director Tim Slessor, who directed the award-winning pair of documentaries on the American West for the "ALISTAIR COOKE'S AMERICA" series last year.

A cost-sharing contract was worked out. BBC agreed to furnish the producer-director, the reporter, the researcher, their travel expenses, and all post-production work, which was to be done in London. KOCE-TV, through a private grant, would furnish the associate producer, cameraman and soundman, their travel expenses, the necessary equipment, and half of the processing costs. Cost of the film stock was to be shared equally. In return for its participation, KOCE-TV was to receive a final release print and all North American film rights.

Tim Slessor was assigned as producer-director and Dave Fanning as associate producer. Frank Keller and myself, both from KOCE-TV, were cameraman and soundman, respectively. The reporter-narrator was Jeremy James, an eight-year BBC veteran with a strong journalistic background. His last film in the U.S. was "Report from Engine Company 82", a fine documentary about the busiest fire station in the world. Jeremy wrote the narration for "DEEP SOUTH, DEEP NORTH" and also reports on camera—a technique originated by BBC, known as "piece to camera," and now widely used on U.S. news programs. Researcher was Sally Evans, also of BBC, who is based in Washington, D.C. Sally spent two years on the research for the "AMERICA" series and did a fine job on our film, too, under a very tight schedule.

Tim Slessor and David Fanning spent three weeks in the field researching locations, setting up shooting schedules, and writing the film in their heads. Then Frank Keller and I joined them for the actual filming, which covered a period of four weeks. No formal shooting script was used, only a general outline. Tim's feeling is that if you can't write it on the back of an envelope, you shouldn't be in the business. For Frank and me this was a new and exciting way to make a film—doubly so because of the nature of the subject. It meant keeping on our toes every minute, the chance to improvise, and—best of all—the ability to take advantage of spur-of-the-moment opportunities when they arose. All of this results in a feeling of spontaneity and immediacy in the finished product.

The film was to reflect the viewpoint of the man on the street rather than civic leaders and politicians, to show how the civil rights movement has affected the lives of the average man and woman, both black and white, South-



In Little Rock, Arkansas, soundman David Hudson adjusts level on Nagra IV.2 as sound is transmitted from miniature Vega Model 55 cordless mikes several hundred yards away, to Vega Model 57 Receivers, shown atop the Nagra. Associate producer David Fanning explains a point, as cameraman Frank Keller, hand-holding Eclair NPR, looks on.

(LEFT) Producer-director Tim Slessor (standing) and reporter-narrator Jeremy James, both of BBC-London, chat with Alabama Governor George Wallace prior to filming an on-camera interview for the BBC/PBS documentary "DEEP SOUTH, DEEP NORTH". (RIGHT) Searching for background footage, the crew found these six men relaxing and chatting on a front porch in Wilcox County, Alabama, and got them to agree to a spontaneous interview with Jeremy James. At right with the camera and sound equipment are Frank Keller, cinematographer, and soundman David Hudson, both of KOCE-TV in Huntington Beach, California. Seated on the stoop is Jeremy James, BBC reporter-narrator on the film.

(LEFT) The crew prepares to film and record an interview with a man and his wife in rural "antebellum" atmosphere of the deep South. Talking to the couple is Jeremy James, wearing the invisible Vega cordless microphone and transmitter. Shotgun mike was used to pick up conversation of the couple. (RIGHT) Blimped Eclair photographs Jeremy James and newspaper editor Hollis Curl in his office in Camden, Alabama. "DEEP SOUTH, DEEP NORTH" examines 20 years of changes in the U.S. since the start of civil rights movement, through series of interviews with Southerners and Northerners, black and white, white collar and blue collar.

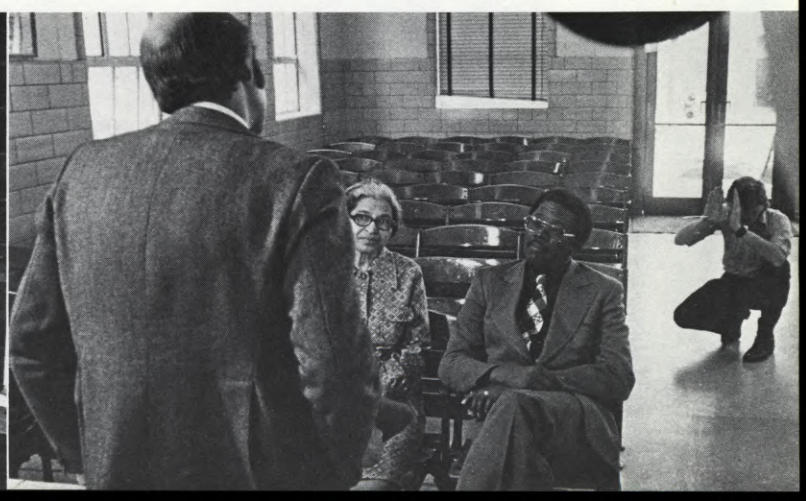
erner and Northerner. To do this, we needed to maintain a low profile—to be able to set up, shoot, and wrap as quickly as possible. We were also on a very tight shooting schedule. We exposed 36,000 feet of film in the four weeks we were on location. Needless to say, we selected our equipment so as to be able to travel as light and move as quickly as possible. But even more important than portability was *reliability,* because this kind of documentary is not much different from filming live action news—what you get on the first take is *all* you get.

We shot the film on 16mm Eastmancolor negative film, the standard for BBC documentaries. Frank Keller had never worked with this stock and he was a little concerned about that, since there was only time for a short 200-foot test before we went on location. We exposed the first 19,000 feet of film before we got to see a single foot of it, which is a little scary. But Dave Fanning had worked with it during his BBC days and was able to give Frank the pointers he needed in order to feel confident with it, particularly in spontaneous situations where there was no time for light meter readings. After he saw what could be

Continued on Page 741

The Vega cordless mike was used in scenes like this one, where Jeremy James interviews the principal of Wilcox Academy in Alabama, during a baseball game. The academy is one of many private all-white schools that have been founded in the South since the desegregation rulings. Mike and transmitter are easily hidden in clothing, and with total absence of cables, subjects have complete mobility during filming. Receiver and recorder can be conveniently located as far as several hundred yards away.

(LEFT) Jeremy James interviews Mrs. Virginia Durr, member of an old Southern family. Mrs. Durr talks about her childhood and the personal changes she went through, leading to her involvement in the early days of the civil rights struggle. (RIGHT) Mrs. Rosa Parks and her attorney, Fred Gray, in the courtroom where in 1955 Mrs. Parks was fined $10 for refusing to move to the back of a bus in Montgomery, Alabama. The famous case triggered a year-long bus boycott by blacks, led by a young minister named Martin Luther King. His back to the camera, Jeremy James discusses how the scene will be filmed, while Tim Slessor lines up the shot.



115th SMPTE TECHNICAL CONFERENCE AND EQUIPMENT EXHIBIT

Close to 900 registered participants attend Los Angeles Conference highlighted by interesting papers, panel discussions and exhibits

The 115th SMPTE Technical Conference and Equipment Exhibit, held at the Century Plaza Hotel in Los Angeles, was clearly one of the most successful events of its type ever sponsored by the Society.

Attendance was excellent and those present included a sizable group from Europe and other members and guests from as far away as Australia. The papers presented were generally excellent (about evenly divided between film and video subjects) and this time there were no concurrent sessions to compete with one another. The attendant social events (including the Get-Together Luncheon and black-tie Banquet) attracted capacity crowds. In the evenings, several of the commercial companies sponsored lively wine and cheese parties, and the A.S.C. Board of Governors and staff of *American Cinematographer* welcomed SMPTE equipment exhibitors to a cocktail and buffet reception at the A.S.C. Clubhouse in Hollywood.

Guest speaker at the Get-Together Luncheon was the much-honored veteran film director, Frank Capra, whose witty and nostalgic speech delighted those present. Mr. Capra's appearance at an SMPTE function is especially appropriate, since he is a Caltech graduate engineer and intended following an engineering career before almost accidentally getting involved in the motion picture industry.

As for the technical program itself, the papers covered a wide range of subject matter under the general headings of: Laboratory Practices, Energy Crisis and Conservation, Sound, Studio Production Practices, Small Format Film Systems (Super-8), Projection Practices & Theatre Presentation, Television, Videodisc Consumer Playing Systems, and Safety and the Motion Picture and Television Industry.

It is interesting to note that in the session devoted to Small Formats there was no longer any question raised as to whether Super-8 could be regarded as a professional format. On the contrary, all of the papers dealing with this format treated it on a highly sophisticated level, stressing Super-8 as a totally professional format for certain applications.

An event which promised to be of practical interest was the panel discussion entitled: *Re-evaluation of Existing Motion Picture Equipment to Meet New Needs.* Moderator of the panel was Milton Forman. Formerly the President of Berkey Colortran, and currently a technical consultant, as well as film producer (in association with Gregory Peck), Mr. Forman's varied career in relation to the motion picture industry places him in a unique position to evaluate it from several different, but complementary, viewpoints.

In his opening remarks, he said: "While considerable progress has been made in individual phases of motion picture technology, there has been no remarkable change toward achieving a total system of film production. One of the areas that has been underestimated —and, therefore, neglected—has been that of post-production. While considerable progress has been made in the technology of editing video tape, similar advances have not been made in film editing. The problems of post-production must be considered during the production phase of a film. This, therefore, requires the wedding of sound and the visual image in such a way that more efficient handling of these elements is made possible during the editing period."

Panelists at this session included: Edmund DiGiulio, President of Cinema Products; Joseph Tawil, President of Berkey Colortran; Robert Leonard, Universal Studios Sound Dept. and Chairman of the SMPTE Time-coding Committee; Wally Mills, Sales Manager of Moviola/Magnasync; and Wilton Holm, Vice President of the AMPTP and Executive Director of the Motion Picture and Television Research Center.

The question was posed: "Is there any likelihood that editing equipment for film could be generated to give the director and editor greater ease in handling and viewing film during the editing process, so that there would be greater facility in making creative decisions?"

Obviously, this question referred to some sort of electronic, computerized system, such as those used for video tape editing.

Wally Mills and Bob Leonard discussed this point and both said that they could not foresee any immediate progress in this area that would be significant. However, both felt that the adoption of a standardized time-coding system would help greatly in solving the problem.

Replying to the complaint that some of the new high-speed motion picture lenses now available have flare problems, especially when used for daylight exterior shooting, Edmund DiGiulio discussed the importance of the development of high-speed aspheric fixed-focal-length lenses that would tend to diminish the flare problem and increase the creative capability of cinematographers to shoot at very low light levels.

Joseph Tawil discussed the development of new daylight light sources of high efficiency (including the Metallogen sources referred to by Tom Lemons

The Century Plaza Hotel in Los Angeles served as headquarters for the recent 115th SMPTE Conference and Equipment Exhibit. A large number of attendees, many of them from overseas, helped to make the event one of the most successful ever sponsored by the Society of Motion Picture and Television Engineers.

in the preceding paper), but felt that there was currently no possibility of developing a uniform compatible system between daying daylight and tungsten.

Wilton Holm emphasized the great need for a systems approach to filmmaking.

A subject that was obviously of such great interest that it filled the large conference hall with an overflow crowd of more than 1,000 people was: *Videodisc Consumer Playing Systems.*

Keynote speaker of the session, Robert T. Kreiman, presented an overview of the current state of the art in the development of videodisc systems and stressed the point that this form of home entertainment offered enormous promise—provided that standardization could be achieved to insure compatibility of the various systems.

"Several ways of receiving the color TV pictures are being researched," said Kreiman, "but there is no standardization. We hope this conference will give us standardization, but we haven't had any proposals yet."

What followed did not augur well for Mr. Kreiman's hopes about standardization. Papers were presented describing the technology of four different videodisc systems, none of which were in any way compatible with the others.

Kent B. Broadbent presented: *A Review of the MCA Disco-Vision System.* Disco-Vision, an optical system which utilizes a laser, currently has a 40-minute capacity for the 12-inch disc, although MCA hopes to extend this to a 60-minute playing time. The player, which still does not have a manufacturer, is designed to sell for $400, with a player-changer model at $500. Discs will sell from $2 to $10 each. A demonstration of the MCA Disco-Vision system presented an excellent picture on multiple monitors scattered throughout the conference hall.

This was followed by Jonathon A. Jerome and Edward M. Kaczorowski (of I/O Metrics Corp.) in presentation of a paper called: *A Film-Based Video Disc System.* I/O Metrics is a research group, rather than a manufacturing or marketing organization. Its system utilizes an ordinary white light bulb and employs a film medium, rather than the metallized disc-laser combination of the Disco-Vision format. The player for this system will retail between $300 and $400.

Participants in interesting panel discussion on "Re-evaluation of Existing Motion Picture Equipment to Meet New Needs" included (left to right): Joseph Tawil, Edmund DiGiulio, Wilton Holm, Milton Forman (moderator), Robert Leonard and Wally Mills.

Explaining that they had produced only a laboratory model of their player to date, the gentlemen from I/O Metrics proceeded to demonstrate their system on stage, using this equipment—which turned out to be a sad mistake. The picture was pretty awful—blurred, off in color fidelity and with a great deal of jarring interference distorting the image. Obviously, something had gone wrong with the equipment—perhaps due to the conditions under which the demonstration was being presented—but the gentlemen made no apologies for their poor showing and the impression made by their system was certainly not favorable, especially when compared with the excellent MCA Disco-Vision picture.

Next, two gentlemen from Phillips Research Labs, K. Compaan and P. Kramer, presented a paper on their company's *Video Long Play Disc System "VLP".* This is an optical system which utilizes a laser. The estimated consumer cost of the player is $700, which no player-changer yet developed. Phillips will manufacture the device itself, with promised availability in 1975. The equipment was not demonstrated.

The last presentation of the session was that by George Hrbek of Zenith Radio Corp.'s research department, who reported that Zenith is at work on a system featuring a player that will cost $500. Current discs (involving an optical-laser system) have a 20-minute capacity, but the company is working toward a 90-minute-capacity disc. No demonstration of this equipment was offered.

In the ensuing panel discussion, the recurrent terms were "standardization" and "compatibility", without which this burgeoning industry might become stifled in the same way as Super-8 production systems and video cassette systems.

Judging purely from evidence available at the session, it would appear that MCA Disco-Vision is currently out in front with a player that presents an excellent picture, low-cost discs and a gigantic back-log of material (from Universal Studios film library) available for software.

The equipment exhibit at the 115th SMPTE Technical Conference was fully subscribed and drew large crowds. Aside from some interesting accessories, there were no new major pieces of equipment on view. It is reasonable to assume that manufacturers are holding back on introducing any such items until *PHOTOKINA,* the World Fair of Photography, to be held in Cologne in late September.

(LEFT) Representatives from all over the United States and many foreign countries crowd Los Angeles Room of the hotel for Get-Together Luncheon, which featured director Frank Capra as Guest Speaker. His appearance was appropriate at this Conference, since he is a Caltech graduate engineer. (RIGHT) The same room, lent a certain magic by candlelight, was scene of the elegant black-tie Banquet.

CUTTING COSTS IN THE CUTTING ROOM

Some very elementary suggestions for beginning film-makers and cinema students that will save time, trouble and money in the editing process

By W.W. WYPER

Volumes have been written on the aesthetics of film editing, but very little is devoted to the nitty-gritty short-cuts that can save money in the cutting room. Cinema students and industrial film-makers, who must work within minuscule budgets, can enhance their productions by spending money where it shows and not leave precious dollars on the cutting room floor. Some of these time and cost saving procedures may seem insignificant, but added together and multiplied by the number of takes and scenes in even a modest production, a substantial savings can be achieved.

When shooting sync-sound, if the old type of slate with clapper board is used, the cameraman can effect a time-saver in the editing room by always making sure that the clapper board is in the open position before rolling the camera. It then becomes an easy task for the film editor (or his assistant) to run the print down to the exact frame where the boards come together, to place his sync mark. It is time-wasting and frustrating for an editor to discover the clapper boards closed at the head end of a shot, when he backs up the film in his search for the point of closure and finds the slate coming into frame already closed, or closed at the point of camera start. He then has to run the film forward again, passing through the useless footage, find where the boards are opened, and then intentionally closed. This is a relatively minor item—true, but, if the clapper boards are always open before the camera is started, a few feet of film will be saved and whoever assembles the dailies will be much happier.

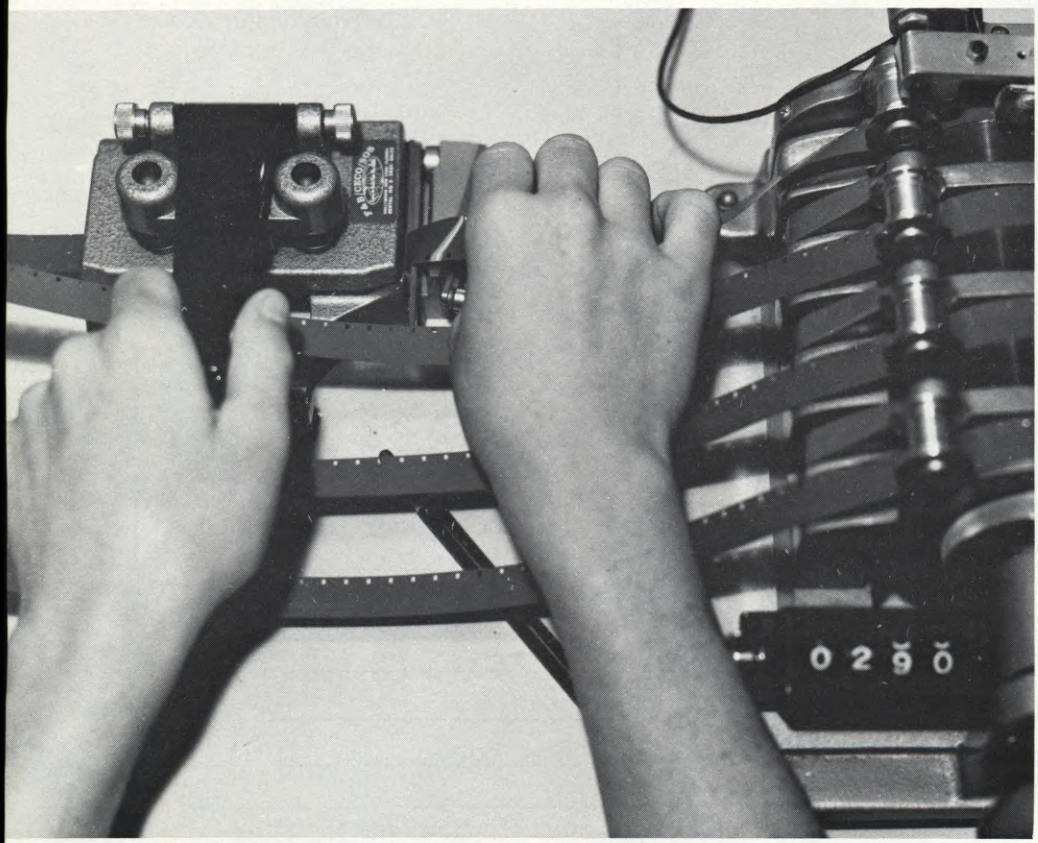
The importance of maintaining detailed camera sheets (reports) is obvious. Why waste money printing takes that you already know are worthless? In some instances, this is easier said than done, especially in documentary and industrial film making. A definitive choice between takes may be impossible until the film is processed and subsequently viewed. But, if the scenes are long and the budget short, what does one do? It is possible to carefully view the processed camera original and make a preliminary selection of scenes to be printed. (This, of course, does not apply to 35mm where the camera original is in negative form.)

Methods of handling 16mm camera original vary greatly. Some film-makers never touch their original once it is removed from their cameras. They leave it in a laboratory vault until the negative cutter assembles it into the final A and B printing rolls. Others, believe it or not, actually run their original on projectors to determine which takes to send to the lab for printing of dailies. An acceptable technique lies somewhere between these two extremes.

If accurate camera reports have been kept, it is a simple operation to pull the desired takes from the newly processed camera original. Using split reels to hold the core-mounted original, the film is placed on rewinds and passed over a light box, and the selected takes are channeled off onto another reel. If camera sheets do not provide sufficient information, the original can be more carefully scrutinized over the light box, using a magnifying glass. Sharpness of focus, exposure, cleanness of the gate and composition can be assessed this way, but not the action. If action is the determining factor, each shot being considered, must be viewed in motion. If two or three takes of the same scene are possible contenders, they can all be sent to the lab to be printed. If the budget will not permit this luxury, the original can very carefully be run through a bench type viewer—provided that the viewer has already been checked to verify that it does not scratch the film. A few types of viewers are acceptable to run original; others are not.

When testing a viewer to see if it scratches film, the test film strip should be of the same type as your original. A viewer might not scratch Kodachrome print stock but will scratch Ektachrome Commercial. In addition to using the

By using proper handling techniques, many dollars in print costs can be saved through culling worthless footage from the original before printing the dailies. Meticulous camera reports will show which takes are good, without having to run the original through projectors or viewers that might scratch it.

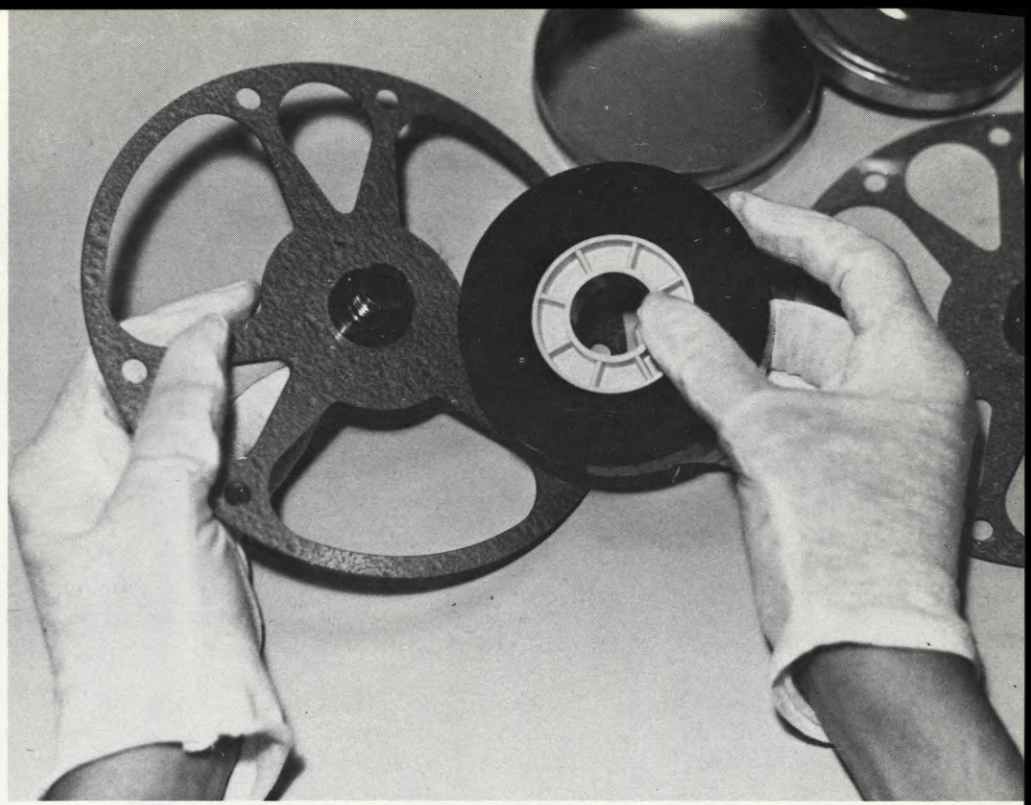


same type of film for the test, it is important to have the emulsion in the same position in the viewer. A viewer might not scratch the emulsion when it is facing down, while, on the other hand, it may scratch it when run in the up position. These checks are imperative because scratches on the film original, especially on the emulsion side, could spell disaster. There are scratch-removal processes which work quite well on the base side of film but no process is one-hundred percent successful on scratches in the emulsion.

Another pitfall to be wary of when checking the cinematic action on a manually operated bench-type viewer: Hand-cranking film through a viewer invariably produces speeds much greater than the normal twenty-four frames per second. A good trick here is to find a shot containing a recognizable type of action, such as a person walking, not running because running can be at a wide range of speeds. Adjust your cranking until the walking scene looks normal in the viewer. Mentally note the action required on the rewind handles. Then try to maintain this pace while viewing all of the footage in which action is important. Several manufacturers offer motor drives for synchronizers which move the film at the correct speed, but unfortunately, not all editing tables are so equipped.

Another big time saver in the life of a film production is to conform the original to the edited work print (cut the A's & B's) before the multiple sound tracks are mixed. There are several good reasons for this practice. Sound mixing costs money. Expensive equipment is required and skilled technicians are involved.

The sound mixing session is the culmination of many hours of hard work. The final result is a composite magnetic track containing the optimum blend of music, effects and dialogue. Once made and paid for, no producer wants to chop up his composite mag track. But, what happens when the negative cutter accidentally tears a frame of picture while splicing the original? If the picture is shortened by even one frame, the sound track must be shortened a corresponding amount. This is especially critical in films containing lip-sync dialogue and synchronized sound effects. If the separate tracks have already been mixed into one, removing a frame or two may be a problem and removing several feet may be virtually impossible. But, occasions do arise when several feet have to be changed; when a shot appearing in the edited work print cannot be found in its original form. This potential dilemma is ever-present in documentary and industrial film-making, where a single production may contain shots from numerous different sources.



When compensating for inadvertently shortened scenes, it is far better to shorten each separate dubbing track before the mix, rather than trying to remove frames smoothly from a composite magnetic track. That is why conforming the original before the mixing session is suggested. If any original turns up missing, adjustments can be made much more easily at this time.

Chances are, whatever picture is substituted for the missing scene, it will not fit the existing sound track. Track adjustments are usually inevitable. Having to remove a few frames from each individual track may be tedious, but the end product is well worth the effort. It's seldom when all of the tracks would be cut at the same point. Whenever this is the case, one might just as well cut the composite. But, more times than not, the cuts are staggered on the various tracks; between words on the dialogue track, at pauses in the music track, etc.■

Although the principle is so basic that it hardly bears mentioning, novice film-makers often run into trouble by rolling the camera with the clapsticks closed. This wastes film and there is a danger of moving the clapper board out of frame when opening the sticks on camera. Also, it is often confusing to the editor to have to search through lengthy footage for the sync frame.

THE MOVING CAMERA

Continued from Page 689

QUESTION: In SUGARLAND EXPRESS there is a very striking sunset shot in which two police cars pull alongside each other and the police talk to each other over their radios. Can you tell me how that shot was made?

ZSIGMOND: That shot actually took three nights to get. Theoretically, we should have been able to shoot it in one night. We tried to prepare it well before we shot it, but we didn't succeed. It was a sunset shot that had to be made within a very short space of time. By the time we were ready it was already late and something went wrong with the camera movement on the first take. The second take was too dark. On the second night we started well in advance and spent two hours setting up the shot. Everything was ready to go, except that the camera car didn't show up. By the time it got there it was too dark. On the third night we had to go again, and this time it worked. You only have about an hour to shoot such a scene and it has to be worked into the schedule. We would start at noon and shoot some daylight scenes. Then, after the sunset shot had been made, we'd shoot some night sequences.

QUESTION: What were some of the logistical problems of shooting such a film?

ZSIGMOND: We traveled a lot on this picture. We started to shoot in Houston and ended up in San Antonio, outside of which most of our shooting took place. There were about 50 different locations and we had a 48-day shooting schedule. The crew was a little bit larger than minimum size because we needed specialists for the stunts and car sequences. We had four electricians and three grips. Most of the budget was spent on cars. Those cars had to travel at 60 miles an hour or more, so we needed good cars. We couldn't just buy junk, because we needed speed and performance from those cars.

QUESTION: Wouldn't it have been easier to shoot that scene inside the car silent with something smaller, like an Arriflex, and dub in the sound later?

ZSIGMOND: Yes, it would have been much easier, but the director insisted on an original dialogue track. I operated that shot myself because I was the smallest person on the crew. I weigh 155 pounds and the operator weighs 190 pounds, so he didn't mind having me shoot it. We took the rear seat out of the car and put the little tripod right in the center. Even though I'm small, there was hardly enough room to operate the camera. I had to rehearse a lot because I had to push myself in between the tripod and the camera. Since there was no room for an assistant, I had to follow focus myself, but when you're using a wide-angle lens, you really don't see the focus that clearly through the viewfinder. I think that was probably the most difficult shot on the whole picture, but on the screen it doesn't look difficult at all. It just looks like a simple shot.

QUESTION: Did you use flashing on the rest of the picture and, if so, what percentage?

ZSIGMOND: We flashed this picture minimum. Usually 10% and averaging about 15%. Sometimes, when we had to intercut overcast with bright sunshine, we flashed it quite heavily—25% to 30%. You don't really get too much exposure increase in daylight shooting. You use flashing only to diminish the contrast between highlights and shadows, and I would say that you could count on a 1/3, or perhaps 1/2-stop increase in exposure because of the flashing. But for night shooting, interior or exterior, it's really remarkable how much more exposure you get. In many, many cases —such as that sunset sequence—we didn't have more than six foot-candles of light on the faces.

(EDITOR'S NOTE: At this point, *THE MOVING CAMERA* Workshop proceeded with the screening of a sequence from MARGIE, released in 1946 by 20th Century-Fox and photographed by Charles Clarke, ASC. The sequence selected involves a rather unique, and extremely well-executed, application of the "fluid" camera. It takes place in an indoor ice skating rink, with the camera moving freely about on the ice along with the actors, a not inconsiderable feat, considering that the picture was photographed with the heavy and cumbersome Technicolor three-strip camera.)

QUESTION: In that sequence we've just seen, it looked as though you had the camera right on the ice and did a 360° dolly shot with the actors as they skated around. Is that right?

CLARKE: Yes. That complete pan-around wasn't in the schedule originally, but the running gag of the film is that Margie, played by Jeanne Crain, is always losing her bloomers, and it happens at the skating rink, too. Well, I didn't see how she could drop her bloomers on a mark, so I suggested to the director that we do a complete pan-around to catch it wherever it happened. The set was an ice rink at the studio and, by adding benches and a few other things, we made a completely circular set out of it.

QUESTION: Were there any special problems in working with the ice?

CLARKE: You may have noticed that the back of the set was draped with a dark blue cloth. I had done that before, because one of the problems that goes with photographing on artificial ice is that you get a tremendous bounce off of the ice itself. Any key lights or fill lights used bounce up and light up the walls. I could foresee this problem, so I had them drape the walls, but no attempt was made to light the drape. We hung lanterns and practical incandescent (photoflood) lights all over the ice to provide points of light for the actors to move against, but that created certain problems, too. I knew that light from these fixtures would be reflected from the ice. It would bounce upward and result in that gruesome underneath lighting that is horrible on people's faces. So I had them paint the ice a dark green and freeze a quarter of an inch of water over it. This caused all kinds of trouble with the studio because of complaints from the wardrobe people. They were sure we'd ruin the costumes, but I had a good director and he said, "We'll paint it." So we painted it.

QUESTION: Why did you paint it green instead of blue?

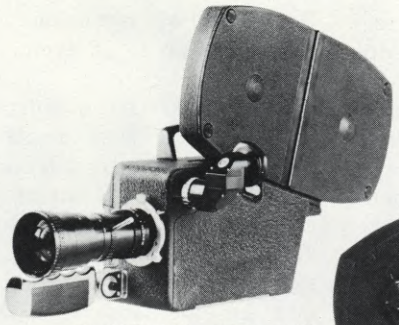
CLARKE: Because in the old Technicolor there was a tendency to get plus-blue into everything. The green was a complement to the orange light that was coming from the incandescent lamps overhead. Therefore, the ice came out looking white and it didn't look painted.

QUESTION: How did you get such a smooth dolly shot on the ice? Did you lay tracks?

CLARKE: No, we worked from a sled, dollying and pushing it to follow the actors. We also pushed in to get shots of the mother and father on the sidelines with their bits of conversation. We put an ordinary ice sled out in the middle of the rink and followed Margie around until she lost her bloomers. We twisted

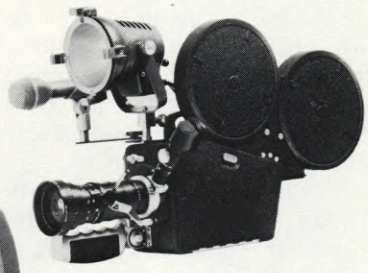
Continued on Page 745

you can't beat the system



CP-16R/A Reflex Camera with PLC-4 Magazine

CP-16/A Camera with PLC-4 Magazine, RE-50 and CP headset

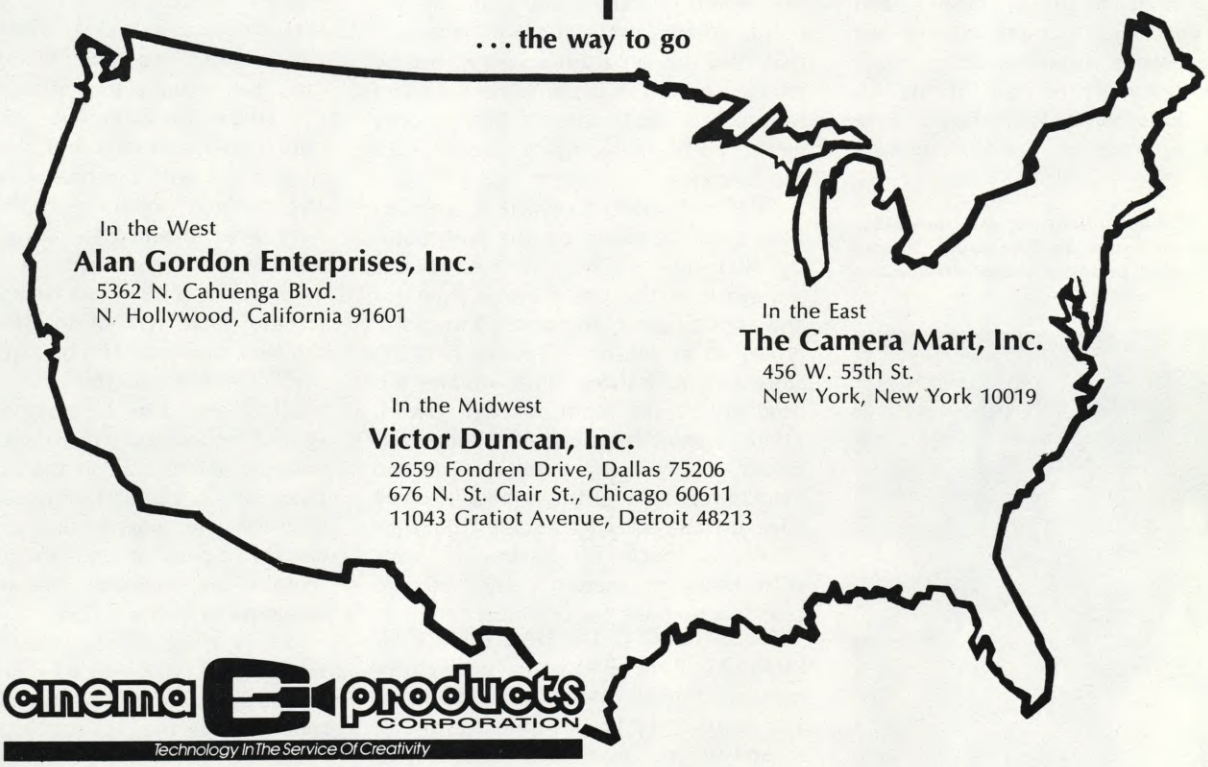


CP-16 Camera with Mike/Light Bracket and Mitchell Magazine

CP-16R Reflex Camera with PLC-4 Magazine

The CP-16 Camera System has become a legend in less than two years. Nearly 1500 cameras are out in the field performing with less down time than any cine camera ever developed. This motion picture equipment milestone has been achieved in no small way by the distribution system . . . a system of knowledgeable distributors like Alan Gordon Enterprises, Inc., Victor Duncan, Inc., and The Camera Mart with the **resources** and **service** to keep **you** in action. Why take a chance with anything less? Why suffer with a camera that can only be serviced at the factory? Why try to beat the system? Why not join it?

. . . the way to go



In the West
Alan Gordon Enterprises, Inc.
5362 N. Cahuenga Blvd.
N. Hollywood, California 91601

In the East
The Camera Mart, Inc.
456 W. 55th St.
New York, New York 10019

In the Midwest
Victor Duncan, Inc.
2659 Fondren Drive, Dallas 75206
676 N. St. Clair St., Chicago 60611
11043 Gratiot Avenue, Detroit 48213

cinema products CORPORATION
Technology In The Service Of Creativity

FILMEX 1974

Continued from Page 661

ma students, as is everyone else involved in the production) have created an extremely funny film by playing everything with dead-pan seriousness.

On the technical side, the cinematography of Douglas Knapp is outstanding. The intricate, almost wall-to-wall special effects (purposely executed in comic book hyperbole) are technically excellent and thoroughly professional.

Claude Chabrol's JUST BEFORE NIGHTFALL is another slick, sophisticated drama of murder and manners in the *genre* which is his forte. In this film he introduces well-delineated characters and gives the audience a glimpse behind the facades of the French affluent middle-class, but the film somehow lacks the excitement of his earlier efforts.

THE HOLY MOUNTAIN is the latest effort by Mexican screenwriter/director Alexandro Jodorowsky, creator of the controversial EL TOPO. Like that previous film, this one is a disjointed allegory awash with profound (?) symbolism, and one gets the distinct impression that the *auteur* made it with tongue in cheek to confound the Emperor's New Clothes crowd of pseudo-sophisticates. Nevertheless, he carries it off with stunning artistry, aided in no small measure by the superb cinematography of Rafael Corkidi. The images are alternately beautiful and repulsive, bizarre and saintly, dead serious and ridiculous—but they are always visually exciting. Playing the flashy central role of the Alchemist, Jodorowsky leads the audience through a maze of Freudian conundrums, consorting with a collection of freaks that would do Fellini proud. What does it all mean? Pay your nickel and take your choice.

Film star Donald Sutherland, with unfamiliar short haircut, enters the Paramount Theatre for the benefit premiere which drew many stars.

Perhaps the most stunning feature at FILMEX, in terms of its effect on the audience, was the Netherlands production of TURKISH DELIGHT, a hard-hitting, sexually explicit drama of sheer technical artistry by producer Rob Houwer and director Paul Verhoeven. Adapted from a best-selling Dutch novel and honored with an Academy nomination in the Best Foreign Film category, TURKISH DELIGHT works at the gut level to expose the psyche of a super-stud young artist in frenetic rebellion against the conformist world that would hem him in. His love-hate relationship with a young woman he meets casually, but who infects him with a kind of burning brain-fever, is at the core of this drama which is mellowed by lyrical passages and moments of raw comedy.

TURKISH DELIGHT is directed with inspiration, flawlessly acted and photographed with consummate artistry. Its erotic sequences are an integral element of the story line and character development and, as such, are inseparable from the structure of the work. But the film is flawed by its creators' inability to resist the temptation toward overkill—namely the inclusion of several scatological scenes obviously thrown in for sheer shock value. That they are in the worst possible taste is beside the point. What is vastly more important is that they detract from a film which, by its very nature, has tremendous impact legitimately built into it and is only weakened by the addition of gratuitous shock scenes.

RUSLAN AND LUDMILA, a Soviet film spectacle based on the epic poem by Alexander Pushkin, represents the last work of the late Russian animator and film director, Alexandre Ptouchko. Produced at Mosfilm Studios, it is the story of a warrior who rescues his beautiful bride from an evil dwarf. There is something for everybody: sorcerors, witches, enchanted forests and magic swords. All of this is made to come alive on the screen through a dazzling display of special effects that combine with beautiful costumes and magnificent sets to make a spectacular film.

LES VIOLONS DU BAL (THE VIOLINS AT THE BALL) is a carefully wrought French film that succeeds on just about every level. Produced, directed and written by Michael Drach, it is, in a sense, a film within a film. We first see Drach playing himself while trying to persuade a crass producer that his boyhood experiences (during the Occupation) can be made into a commercially successful film. When he gets a grudging go-ahead, Jean-Louis Trintignant takes over to play the adult Drach in the film, but the picture is stolen by Drach's own small son who plays him as a boy. The trials and tribulations of this boy, his mother and grandmother in trying to escape to Switzerland without being caught by the Nazis adds up to an exciting suspense-chase drama.

L'INVITATION, a Swiss/French co-production, is an example of expert ensemble playing by a group of actors so skilled that not a one of them seems anything less than real in his/her role. The plot, simplicity itself, concerns a shy, middle-aged bachelor who comes into an inheritance when his mother dies, and then buys a splendid country house outside of Geneva. On a Sunday he invites his office co-workers to a party at his new home. Caught up in the euphoria of the occasion, their defenses and inhibitions swept away by the alcohol they are drinking, the ten people strip themselves of their facades and begin to relate to each other in unimagined ways. The resultant action—part scripted, part improvised—is probably typical of what goes on at most office parties, but it reveals so much about human behavior that the film might well serve as a teaching aid for psychology students. With all of that, it is enormously entertaining.

THE WEDDING, a new Polish feature by Andrzej Wajda, is an extraordinary mood piece about a country wedding that actually took place in 1900 at the village of Bronowice on Poland's borders with Russia and Austria. The film is rife with political undercurrents and myths of folkloric significance that have great meaning to native Poles but are beyond comprehension by Americans, who lack the background to fathom such symbolism. Nevertheless, the film can stand and be enjoyed on its own cinematic merits. It has enormous vitality and the cinematography by Witold Sobocinski is little less than incredible. Almost all of the action takes place within a small farmhouse crowded with dancing, singing celebrants, but the camera moves among them with an incisive eye, involving the audience as participants in the action.

As is true of any and every film festival, FILMEX had its share of duds, although, in truth, the percentage was much smaller than is usually the case.

One of the worst on the program was THE INNERVIEW, a self-conscious ego trip by Richard Beymer—he of WEST SIDE STORY fame. Described pretentiously in the program notes as "an inward odyssey into the visions, struggles

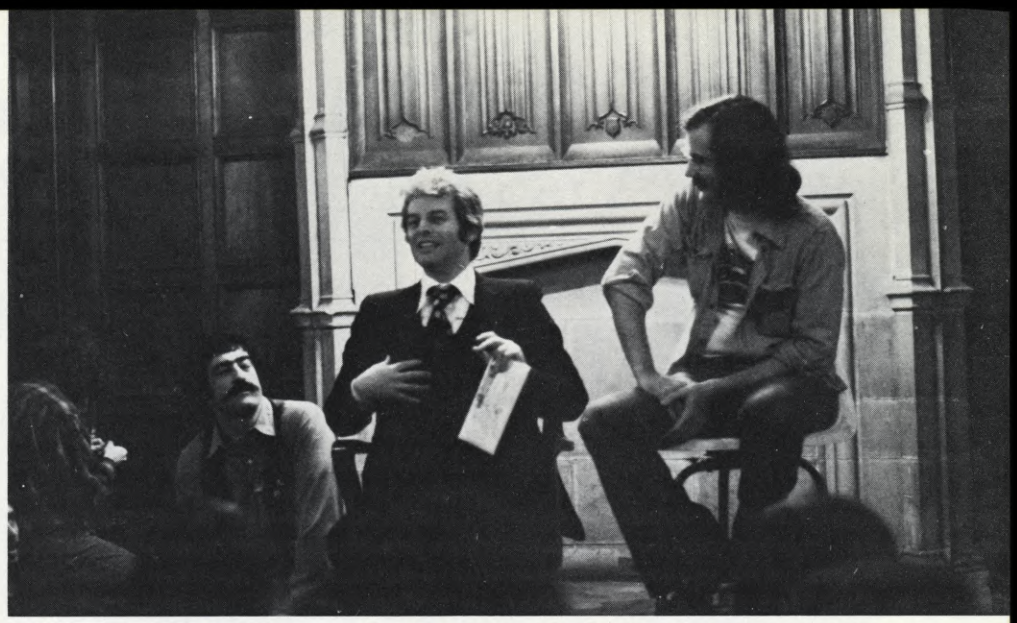
and joys of a spiritual awakening", this is an example of the kind of cinematic masturbation that goes on among first-year students in almost any film school —until they grow up and discover that the purpose of a mass medium is to communicate. Beymer's "intensely personal statement" is so God-awful "personal" that it communicates nothing but confusion, laced with boredom. Put together according to the clean-up-the-cutting-room school of montage, the resultant mish-mash is a collage of totally unrelated film clips, held together (tenuously) by an occasional shot of a bearded Beymer slaving over a hot Moviola. Technically it is not quite on the level of the average home movie. Better Beymer should have quit when he was a little bit ahead—with WEST SIDE STORY.

Running Beymer's epic a close second on the boredom scale was an overblown hunk of nonsense called LUDWIG: REQUIEM FOR A VIRGIN KING. The program notes read: "By fusing together elements of Wagnerian opera, underground film, and Bavarian kitsch (all filtered through Brecht), Hans-Jurgen Syberberg presents a surrealistic view of the inner world of Ludwig II, the mad king of Bavaria."

Ludwig, mad as he was, must be whirling in his grave, for what emerges on the screen is an exercise in high camp—which obviously wasn't meant to be that at all. The film—if it can be called that—is an interminable series of static *tableaux* played against stunning backgrounds (which appear to be rear-projected or, possibly, front projected) and it is beautifully photographed. But all the technical gloss in the world couldn't save this turkey. The actors, stationary as wax figures, for the most part, stand and declaim at the camera. Another ego trip—and *bad*.

The film which generated the most ambivalent feelings among those who saw it (at two sold-out performances) was Andy Warhol's FLESH FOR FRANKENSTEIN, presented in 3-D. Some loved it; just as many hated it. Directed by Paul Morrissey, who actually fancies himself to be a film director, the picture was made in Italy by a professional crew, so it is mercifully free of that home-made look characteristic of Warhol's other epics.

The plot (if you can find it) concerns the familiar mad scientist who stitches people together from an assortment of spare parts obtained by killing other people. This had to be the goriest picture ever made. There are endless scenes of ghouls reaching under flaps of skin into bodily cavities to pull forth handfuls of steaming entrails. These giblets are continually being thrown at you from the screen—in 3-D, yet! This is a picture that was *intended* to be high-camp, but it's about as funny as a double hernia.



Alexandro Jodorowsky, far-out Mexican director of THE HOLY MOUNTAIN (which had its American Premiere at FILMEX) and the equally controversial EL TOPO, swaps questions and comments with film buffs at informal conference in the lower lounge of the Hollywood Paramount Theatre. Such conferences with visiting celebrities from all over the world were held there each day at 5 p.m.

FLESH FOR FRANKENSTEIN has one saving grace: the 3-D effect (filmed in the *Spacevision* process) is technically excellent. There is one closeup of piranhas swimming in a tank and they seem to be about three inches from your nose. In another scene, dozens of startled bats come flying off the screen right into the audience—and that's a real mind-blower, but unless you have a strong stomach and a low threshold for being entertained, go see THE STING instead.

The individual programs devoted to Experimental/Underground Films, Long Shorts and Student Films (usually among the most entertaining) were, this time out, very disappointing indeed. There were, of course, a few specific exceptions, but not enough to make these programs worth sitting through. The Student Films were a particularly sorry lot (with the exception of HOT DOGS FOR GAUGUIN and THE BOARDED WINDOW) and this is surprising, because the roster included five selections from the Academy of Motion Picture Arts and Sciences First Annual Student Film Awards Program and nine films selected as outstanding by the FILMEX committee.

But with the exception of these few programs, which, in this writer's opinion, were below par, the films shown at FILMEX 1974 represented some of the very best of the new and the old, a varied cross-section of fascinating motion pictures from all over the world.

If one were inclined to search further for things to complain about, it could be said that many of the programs started late because running times were underestimated, and that the projection at the Paramount Theatre left something to be desired (during the Rosalind Russell tribute they actually started to run one film clip upside down), but these criticisms would amount to picking fly specks out of the pepper.

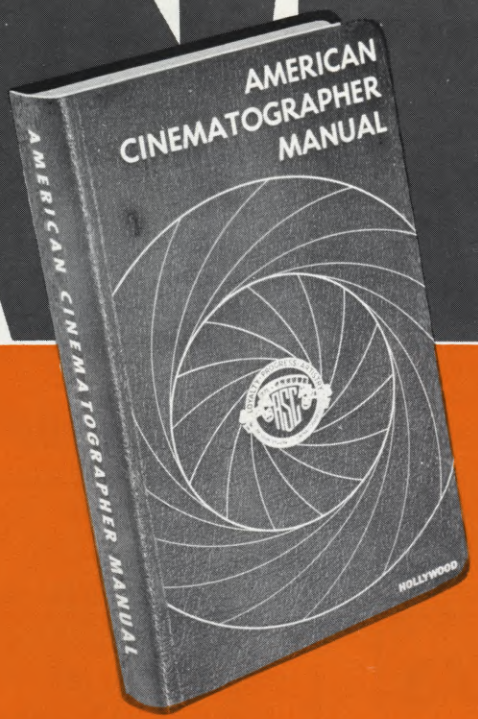
It is much more constructive to

Continued on Page 708

FILMEX PROGRESS REPORT

	1971	1972	1973/74
Duration (in days)	11	11	13
Participating Nations	13	17	19
Number of Programs	43	44	50
American Premieres	9	10	17
World Premieres	0	3	3
Participants	85	84	118
Features	53	58	60
Shorts	54	77	77
Sold Out Houses	9	10	17
Total Attendance	30,000	48,000	60,400
Budgeted	$150,000	$200,000	$230,000
Total Expenses to date	$115,000	$153,000	$202,000 (estimate)
Ticket Sales, Program Income	$49,000	$74,000	$119,000
Grants, Contributions	$19,000	$39,000	$57,000 (estimate)
Deficit	$47,000	$40,000	$26,000

NEW!



FOURTH EDITION

AMERICAN CINEMATOGRAPHER MANUAL

COMPILED AND EDITED BY TWO VETERAN CINEMATOGRAPHERS

CHARLES G. CLARKE, A.S.C.
and
WALTER STRENGE, A.S.C.

MOST COMPREHENSIVE COMPILATION OF CINEMATOGRAPHIC DATA EVER PUBLISHED !

This easy-to-carry, pocket-size, concise, book contains practical, informative text, tables, charts, diagrams, drawings and listings of all the latest production equipment and filming techniques in use today!

Key word printed on the edge of every right-hand page provides INSTANT INDEX for quickly locating desired data!

Completely updated Filter, Lighting and Lens sections. Data on most recent camera developments. Complete shooting data for Theatrical, Non-theatrical and Television cinematographers filming 16mm, 35mm or 65mm anamorphic or spherical motion pictures in any aspect ratio, in color or black and white, silent or sync-sound, in the studio or on location.

An Official Publication of the

AMERICAN SOCIETY OF CINEMATOGRAPHERS

Dealers are invited to write for quantity discounts.

THE AMERICAN CINEMATOGRAPHER MANUAL
P.O. BOX 2230 **4TH EDITION**
HOLLYWOOD, CALIFORNIA 90028

Please send_____copies of the AMERICAN CINEMATOGRAPHER MANUAL @ $17.50 each, postpaid. No C.O.D.s'

NAME.....

STREET.....

CITY.....STATE.....ZIP.....

FILMEX 1974

Continued from Page 705

emphasize what was *good* about FILMEX 1974—and there was a great deal of that. Gary Essert, Gary Abrahams, Executive Coordinator Temperance Parker and their relatively small but dedicated staff did an almost superhuman job of getting it all together and keeping it that way. They are to be heartily congratulated.

Looking back at FILMEX 1974, it can be said that the real stars of this festival were the audiences that turned out in force to support it with the greatest enthusiasm. Never has this writer witnessed such fantastic audience reaction. For example, when Errol Flynn's ADVENTURES OF ROBIN HOOD and the original ADVENTURES OF TOM SAWYER were shown, the spectators (most of whom had not even been born when these pictures were made) reacted audibly and enthusiastically to every nuance that came across from the screen.

This is the proof of the film festival pudding. The audiences loved FILMEX and proved it with their solid support and record attendance. The films communicated and the audiences responded.

And that's what film is all about. ■

HERB A. LIGHTMAN

PROGRAM AND GENERAL ATTENDANCE FACTS FILMEX 1974

The following nineteen nations and their one hundred and eighteen representatives participated in the 1974 Los Angeles International Film Exposition:

ARGENTINA
JUAN MOREIRA

BELGIUM
HOME SWEET HOME
Benoit Lamy, Director

CANADA
SLIPSTREAM
David Acomba, Director
Luke Askew, Actor
Marc Champion, Cinematographer
Brian Ahern, Musician

CUBA
POR PRIMERA VEZ (FOR THE FIRST TIME)

CZECHOSLOVAKIA
UKRADENÁ VZDUCHOLOĎ (THE STOLEN AIRSHIP)

FRANCE
LE COUSIN JULES
Dominique Benicheti, Director

JUSTE AVANT LA NUIT (JUST BEFORE NIGHTFALL)

"TREASURES OF THE CINEMATHEQUE FRANCAISE"
Henri Langlois, Secretary General, Cinémathèque Française
Eugene Stavis, New York Cinémathèque Curator

LES VIOLONS DU BAL (THE VIOLINS AT THE BALL)

Jean-Louis de Turenne, Unifrancefilm
Yvette Mallet, French Embassy
Roger Garroudy, Philosopher/Filmmaker

GERMAN DEMOCRATIC REPUBLIC
DER DRITTE (THE THIRD)

GERMANY
LUDWIG: REQUIEM FÜR EINEN JUNGFRÄULICHEN KÖNIG (LUDWIG: REQUIEM FOR A VIRGIN KING)
Dr. R. F. Goldschmidt, German Export Union

GREAT BRITAIN
AND NOW FOR SOMETHING COMPLETELY DIFFERENT

BLOW-UP
Carlo di Palma, Cinematographer

LAWRENCE OF ARABIA

THAT'LL BE THE DAY
Derek Malcolm, Film Critic

HUNGARY
FOTOGRÁFIA (PHOTOGRAPHY)

ITALY
LA LINEA (THE LINE)

SOTTACETI (PICKLES)

SCENOTECNICA

JAPAN
KURUTTA IPPEIJI (A PAGE OF MADNESS)

KUMONOSU-JO (THRONE OF BLOOD)

MEXICO
EL CASTILLO DE LA PUREZA (CASTLE OF PURITY)
Auturo Ripstein, Director

LOS OLVIDADOS (THE YOUNG AND THE DAMNED)

NETHERLANDS
TURKS FRUIT (TURKISH DELIGHT)

POLAND
WESELE (THE WEDDING)

SWITZERLAND
L'INVITATION (Switzerland/France co-production)
Jean-Luc Bideau, Actor

USA
THE ABDICATION (Special Sneak Preview)

THE ADVENTURES OF ROBIN HOOD and
THE ADVENTURES OF TOM SAWYER
James Wong Howe, Cinematographer

"THE CAMERAMAN"
Ernest Laszlo, Cinematographer

DARK STAR
John Carpenter, Producer/Director
Dan O'Bannon, Screenwriter/Actor

DODSWORTH
William Wyler, Director

DR. JEKYLL AND MR. HYDE
Rouben Mamoulian, Director
Karl Struss, Cinematographer

"THE EXPERIMENTAL UNDERGROUND"
Morgan Fisher, Filmmaker
Pat O'Neill, Filmmaker
Jo Carson, Filmmaker
Peggy Wolff, Filmmaker
Roberta Friedman, Filmmaker
Adam Beckett, Filmmaker
Thom Anderson, Filmmaker

Continued on Page 738

"CHILDREN OF THE MORNING"

Continued from Page 657

ABC crew includes a couple of cameramen, Joe Longo and Mike Chevalier, with whom I had shared an adventure in Steamboat Springs, Colorado just a few weeks before (See *American Cinematographer,* May 1974) and there is a jolly reunion.

Before the competition begins I notice several skiers practicing on the slopes. I'm puzzled by the fact that they're wearing headphones. It turns out that the headphones are connected to tiny cassette recorders which they carry in belt pouches. During the actual event, each competitor will perform to his own selected music played over the p.a. system. Now they are wired for sound, practicing to their own private music.

To photograph this event Mike Marvin is using his trusty Bolex Rex V camera fitted with a 400-foot magazine. His lens complement includes an Angenieux 12mm-120mm zoom, a Nikon 80mm-200mm zoom, a Nikon 300mm and a Nikon 500mm. He seems to like to use telephoto lenses to capture head-on skiing shots and a look at "EARTH RIDER" proves that he's very skilled at holding composition and focus with these long lenses.

Halfway up the hill, Roy Tremoureux is shooting the Locam camera, with an Angenieux 12mm-120mm zoom mounted. This is a piece of equipment that I know very little about, other than the fact that it's a high-speed camera primarily designed for instrumentation work.

"It's a camera manufactured by the Redlake Corporation for instrumentation filming," Mike tells me when I ask him about it. "It's really not meant to be used for field work the way we're using it. I first started shooting high-speed with the Milliken and then I found out about the Locam. It not only rents for less, but it has a 'C' mount, which means that you can use just about any kind of lens on it. It has a special Eclair-type viewing system that moves around in every direction, the same as the one on the NPR. I first started using the Locam as an instrumentation camera, shooting thousands of feet of film for an analysis of the Spademan Release System, a unique type of ski binding. Shooting at high speed, we could show exactly how the binding released. The Locam shoots from one to 500 frames per second and has a pin registration movement. It's quite easy to load and it takes 400-foot daylight spools. The only drawback the camera has is that it's really quite heavy and hard for a cameraman to hand-hold. Otherwise, it's perfect for ski photography."

The Stunt Ballet competition proceeds without a hitch and if the term "poetry in motion" hadn't long since been run into the ground, I would consider it the perfect phrase to describe what takes place. The way these skiers twirl and spin while wearing those long staves on their feet is a source of wonder to someone like myself who is a bit of a *klutz* even without skis.

That night, as the guest of Mike and his wife at their wilderness home on the banks of the Truckee River, I'm shown some of the rushes of footage already shot for "CHILDREN OF THE MORNING" and it looks beautiful. Not only is the skiing action great, but there is a uniform technical quality to the footage. I ask Mike what method of exposure he uses in the snow.

"Gauging the light correctly is the major problem for anyone shooting on snow," he tells me. "Everything is distorted by the snow. Everything is so much brighter. There are several ways of judging your exposure, as I found out on the last shoot when I asked some of the other cameramen how they were taking their light meter readings. I found that some cameramen take them against the sun, while others do incident light readings off the person's face and don't think about anything else. I prefer to take the reading off the sky on any well-lighted slope. If I'm in the trees I'll take an incident reading and average it all together, the sunlight and the shadows, because the shadows are very harsh on the snow. When it gets very cold, cameras have a tendency to slow down. For that reason I usually stop down a bit on a really cold day. I'll listen to the camera to see if it seems to be running slow. If it is, I'll make adjustments in the f-stop. Of course, to keep a camera running well in snow country you must keep the batteries warm. One of the best ways I've found to do that is to wrap the batteries in a down parka and put them in a knapsack when out in the field. I'm certain that's the best way, other than taking along electronic gear to keep the camera warm. I found one camera crew on the hill that had gone a step further. They had taken material used for making diving suits and wrapped it around their Eclair in order to keep it warm."

The next morning is beautiful and sunny, just like the day before, and it's time for the Aerial Acrobatics competition. This is my favorite event because it's the most spectacular to watch—and probably, also, because it involves the most danger.

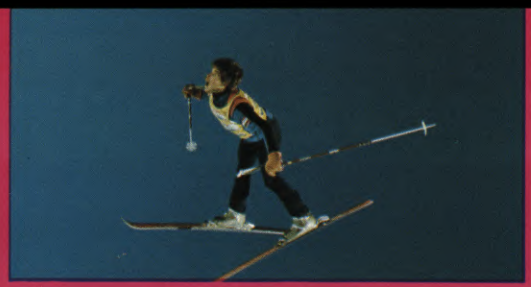
The run that has been laid out for this event is far over on the Nevada side of the mountain and it takes a real cross-country marathon to get there. We ride the tram and ski over, taking four different chairlifts. Once more the crew is loaded down like pack burros, carrying all of the equipment. When we take a short breather I realize that we must be standing directly on top of the state line, because there's a sign with arrows pointing to California on the right and Nevada on the left.

We finally reach the Aerial Acrobatics run, which is laid out with three steep snow jumps. A competitor will shoot off each of these jumps in turn, executing a flip, somersault, gaynor or layout on each. The Mobius Flip, a

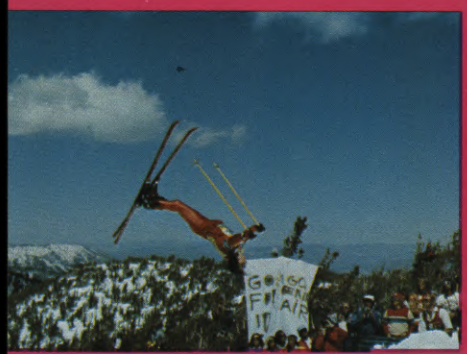
Continued on Page 720

(LEFT) Jon Ericson gets ready to flip the switch as Roy Tremoureux balances the Locam on his shoulder to film a skier coming down the course. (RIGHT) Larry Lapkin is one of four skiers featured in the film. When not in front of the camera he doubles as grip. (OPPOSITE PAGE) A collage of airborne skiers doing their thing in the Freestyle competition. (Photographs by HERB A. LIGHTMAN.)

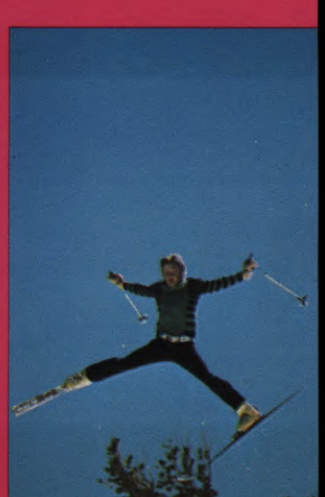

GO BIG OR GO HOME
FLY IT
AIR IT

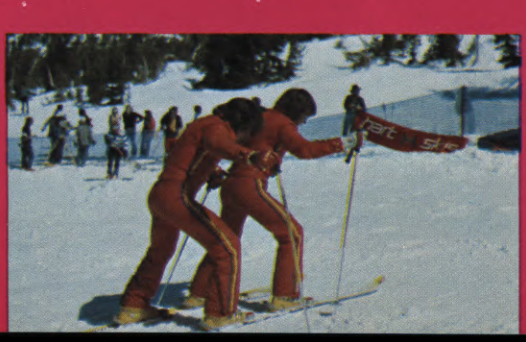


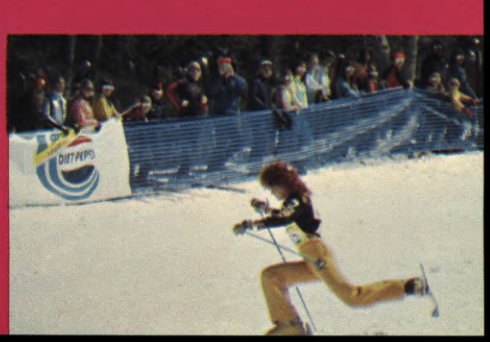

GO BIG OR GO HOME
FLY IT
AIR IT


GO BIG OR GO HOME
FLY IT
AIR IT


GO BIG OR GO HOME
FLY IT
AIR IT






DIET PEPSI

TO ZOOM OR NOT TO ZOOM

By KARL MALKAMES, ASC

Any discussion of motion picture technique is bound to parallel the discussion of painting, music or literary expression.

We find ourselves with an endless variety of opinions concerning style, tempo, composition and what purpose or "message" is to be served. From the practical standpoint, one can hardly argue with success if a film or work of art is rewarding financially. Using the monetary yardstick, "DEEP THROAT" compares favorably with "SNOW WHITE AND THE SEVEN DWARFS" and "THE EXORCIST" is proving to be more valuable at the box office than "BIRTH OF A NATION" and "GONE WITH THE WIND" combined.

To study and judge the merits of photographic and editorial cinema technique, therefore, without becoming hopelessly mired in a sea of conflicting interests, it is helpful to confine attention to specific devices, one at a time.

If, from the average film production of this past year, we were to remove every wobbly hand-held shot, every zoom, freeze-frame, slow motion and jump-cut, the remaining footage would be indeed meager. This is not to suggest that there is not, in many cases, an intelligent reason for such devices, but let up ponder for a moment a comment from one of the most respected masters of the art.

In his autobiography, Charles Chaplin tells us, "Personally, I loathe tricky effects, photographing or traveling with an actor through a hotel lobby as though escorting him on a bicycle; to me they are facile and obvious. As long as an audience is familiar with the set, it does not want the tedium of a traveling smear across the screen to see an actor move from one place to another. Such pompous effects slow up action, are boring and unpleasant, and have been mistaken for that tiresome word 'art'. My own camera setup is based on facilitating choreography for the actor's movements. When a camera is placed on the floor or moves about the player's nostrils, it is the camera that is giving the performance and not the actor. The camera should not obtrude.

"Time-saving in films is still the basic virtue. Both Eisenstein and Griffith knew it. Quick cutting and dissolving from one scene to another are the dynamics of film technique.

"I am surprised that some critics say my camera technique is old-fashioned,

that I have not kept up with the times. What times?

"My technique is the outcome of thinking for myself, of my own logic and approach; it is not borrowed from what others are doing. If in art one must keep up with the times, then Rembrandt would be a back number compared with Van Gogh."

Because the audience *accepts* the unnecessary camera exercises and gimmicks doesn't mean that it wouldn't enjoy a greater feeling of participation if spared these diversions. Any move or device that reminds the viewer that he is looking through a camera lens (unless the purpose is to establish a *subjective* camera), shatters the illusion of participation which is what we are usually striving to create. Nor can we alternate abruptly between an objective and subjective camera without effecting the same negative result. The sense of involvement enjoyed unconsciously by the spectator is jeopardized or destroyed each time we introduce an obtrusive element.

Let us contemplate for a moment the much used and abused *zoom.* It may surprise many to learn that the zoom lens (albeit a slow, low-quality ancestor) was available to Roy Totheroh while he was shooting "MODERN TIMES" in 1935. Even if the excellent variable focal length lenses of today had existed during the 20's and 30's it is doubtful that many of the top cameramen or directors would have employed the zoom while the camera was rolling. It would have remained a time-saving convenience to have but one lens for all angles. The most disturbing effect of the zoom is the *flattening* of the image or destruction of the third-dimension illusion. The feeling of depth suggested by parallax interplay and shifting planes when the *camera* moves is instantly cancelled if replaced by a *zoom.*

The value of the zoom in news or documentary filming, however, speaks for itself.

The case being made here is simply for a reappraisal of the use and misuse of the zoom lens today. ■

ECO, EF AND COLOR NEGATIVE WHAT'S THE DIFFERENCE?

The results of meticulous comparative testing of 16mm color reversal and negative stocks—and some surprising conclusions arrived at

By BARRY HAMPE

The trouble with being an independent film-maker is that all too often, there's no one else to talk to. And that leaves you stuck with whatever information about film-making you brought with you from wherever you started.

For many of us. these days, that isn't a lot of information, because there's no place to go to learn the fine points of film-making—especially 16mm film-making. The big production companies, with their apprentice programs, are being replaced by one- and two-man independents. The film schools teach the basics, but don't have the time or money to provide the practical experience that leads to real craftsmanship. And the literature is inadequate, particularly for good information about color film stocks and final processing and printing.

Besides, when you're just starting out, all you want to know about a film stock is its ASA rating. For a beginner, there's a tendency to believe that movies are made with good equipment, fast film, and something called "content"—which is probably the result of brilliant directing. As far as you're concerned, film is either daylight or tungsten; printing is something the lab does in the dark (and will foul up if you don't keep after them); and lighting is what you have to have enough of to get a reading on your meter.

At least that's more or less how we started. We were doing a lot of documentary filming, on location, with few lights. The rushes would look O.K.—not great, but O.K., after all we were doing documentary—but by the time we went through an internegative to a release print, a lot of the scenes in the picture would look "strange."

Naturally, there's only one thing to do in a case like that: blame the lab!

But we realized we'd have a very uncertain future if we kept telling clients their pictures looked "strange" because the lab was incompetent. The first thing we had to do was get over the idea that a film is something you shoot. It isn't. It's what you show. *A film is what the audience sees on the screen.*

We decided that if we were going to

TEST 1—EFFECTS OF ECO LIGHTING: Foreground lit to 400 FC; background at 65 FC. 1A: Color Negative 7254 at T/5.6, 1B: EFB 7242 at T/6.3, 1C: EFB 7242 (post flashed) at T/6.3, 1D: ECO 7252 at T/2.8. With the foreground lit to 400 foot-candles (the minimum acceptable for ECO), the background is three stops darker, and would require several additional lights to bring it closer to the foreground. Note the loss of detail due to contrast build-up on EFB (1B) and even post flashed EFB (1C)

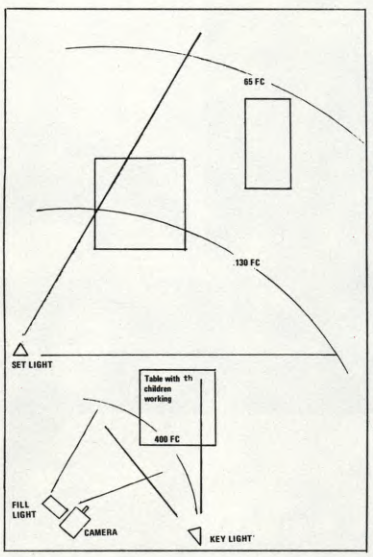


FIGURE 1. Test under ECO conditions—400 FC at subject

1A

1B

1C

1D

TEST 2—FAST EMULSION LIGHTING: Foreground lit to 100 FC; background at 65 FC. 2A: Color Negative 7254 at T/2.8, 2B: EFB 7242 at T/3.2, 2C: EFB 7242 (post flashed) at T/3.2, 2D: ECO 7252 at T/1.4. Location lighting problems diminish when a faster film stock is used. Less than a half stop difference between foreground and background makes the room look bright and natural, except with EFB (2B) where contrast build-up darkens the shadows and causes loss of detail. ECO (2D) requires such a wide aperture that depth of field is diminished and much of the scene is out of focus.

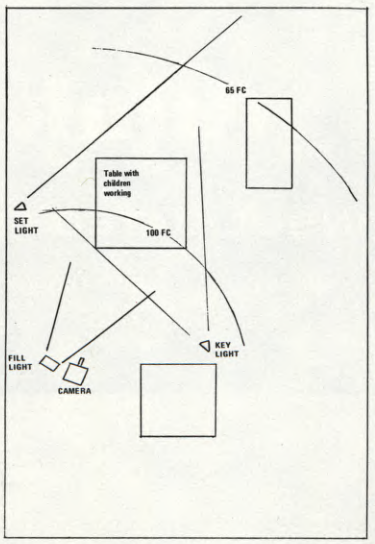


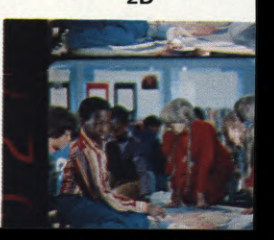
FIGURE 2. Test under fast film conditions—100 FC at subject

2A

2B

2C

2D



be judged *by* the release print, we'd better learn how to shoot *for* the release print. And a lot happens to a film on its way from camera original through internegative to a color positive release print.

With 16mm color reversal film, the most significant change is a tremendous increase in contrast—the apparent difference between the highlights and shadows.

For example, 7242 Ektachrome EFB camera original is made for direct projection. This means that the film has projection contrast in the developed original, and will add more contrast with each generation. When you compare EFB original with a color positive release print of the same scene made from an internegative, the *print* looks quite different from the original. It seems grainier, and the color has changed dramatically. The highlights have blocked up, and the shadows have filled in. If the original was pleasing to the eye, the print will seem coarse and harsh.

The same thing happens with ECO, 7252 Ektachrome Commercial original, but the effect may be less noticeable, because ECO is a low-contrast original made for printing. The original should look soft, the colors dull. There's still a big difference between the original and a print from an internegative—an apparent increase in grain, some color shift, and a decided increase in contrast—but with ECO, the *print* should look *better* than the original.

A film changes between the camera and the release print. And we have to live with that. But we have to know what we're living with. Most of us can tell a grainy image when we see one. But because we associate grain with fuzziness, we tend to blame all indistinct images on grain, when the problem may actually be too much or too little contrast, bad lighting, or poor depth of field.

Our lab kept telling us our problem was contrast, not grain—contrast increases with each printing generation. We knew that, but we weren't sure what it meant. And we didn't know what to do about it.

So Jack Behr, our director of photography, and I started to read books and articles on filmstocks and processing. We asked a lot of questions, and we became saturated with the mythology of 16mm color.

Briefly stated, the mythology says that ECO is *always* the preferred stock, EFB is for TV news and low-light crises, and as for color negative film 7254, the mythology is clear—*never use it.*

We didn't want to be troublemakers, but we were having a hard time accept-

3A

3B

3C

3D

TEST 3—FILMING IN DAYLIGHT. 3A: Color Negative 7254 at T/22, 3B: EFB 7242 at T/22, 3C: EFB 7242 (post flashed) at T/22, 3D: ECO 7252 at T/11. All the reversal emulsions show the effects of contrast build-up through the printing generations, particularly in the loss of detail in shadow areas on the black faces. Color Negative (3A) reproduces the scene most naturally for color and contrast. Note that in this test, where each scene is mathematically in focus, the loss of resolution in post-flashed EFB (3C) is most apparent.

TEST 4—SPECULAR VS. SOFT LIGHT: All scenes but 4D (ECO) were shot with diffuse lighting from softlights at 200 FC. 4A: Color Negative 7254 at T/4, 4B: EFB 7242 at T/4.5, 4C: EFB 7242 (post flashed) at T/4.5, 4D: ECO 7252 at T/2.8 (400 FC). Fast film provides the solution to another difficult location lighting problem—people at a chalkboard. ECO (4D) shows the unnatural shadows caused by the direct lighting necessary to get 400 FC for ECO. The others, shot with soft lights, look more like the diffuse fluorescent lighting of a classroom. In each case, the soft shadow caused by the lighting is actually the same, but note how contrast build-up darkens it on EFB (4B).

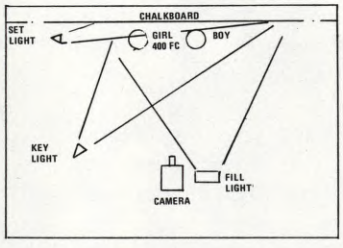


FIGURE 4-1 Boy and girl at chalkboard lit to 400 FC for ECO by specular light

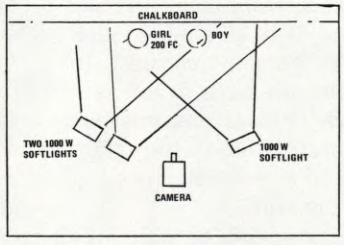
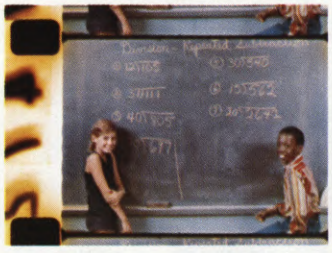
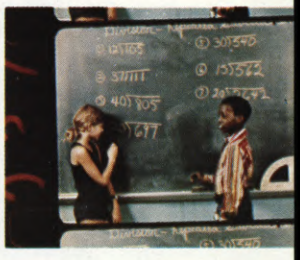


FIGURE 4-2 Boy and girl at chalkboard lit with softlights to 200 FC

4A



4B



4C

4D

TEST 5—LOW LIGHT AND FAST FILM: Ambient light, 30-40 FC; foreground lit to 65 FC. 5A: Color Negative 7254 at T/2.5, 5B: EFB 7242 at T/2.8, 5C: EFB 7242 (post flashed) at T/2.8 . This scene has just too little light for ECO. EFB (5B) suffers from loss of detail due to contrast build-up. EFB, post flashed, (5C) handles the contrast better, but is still soft. Although noticeably grainy on the screen, Color Negative (5A) has the best resolution—and the best color—of the three stocks.

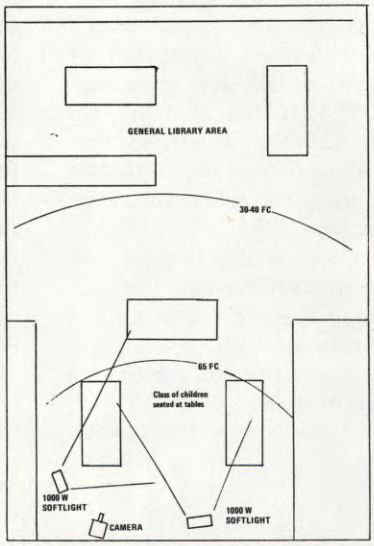


FIGURE 5. Practical documentary situation in school library with ambient light at 30-40 FC supplemented to 65 FC by two 1000 W softlights

5A

5B

5C

ing the mythology. In the first place, ECO is terribly slow, and we do almost all of our filming on location in places where adequate A.C. power is hard to come by. (We carry a lot of spare fuses.) You need 400 foot-candles of tungsten light to shoot ECO at T/2.8, and T/2.8 is not only pretty close to the limit on our zoom lens (it's f/2.2, T/2.5), but it's about as wide open as you can go and still get any usable depth of field.

It's not so hard to get 400 foot-candles for a close-up, or a medium shot. But it takes a lot of lights and a lot of power to light an *entire classroom* to 400 foot-candles, and we're usually blowing fuses just getting three or four quartz lights plugged in.

But if you can't light the whole room, you've got a problem. Say there's 50 foot-candles of ambient light in the room, and we light one area to 400 foot-candles. There's a three-stop difference between the scene that's lit and the ambient light. That can make the corners of the room look like a cave. If we decrease the light on the scene to 100 foot-candles, closer to the ambient light in the room, we have to shoot at T/1.4 with ECO, and that is so wide open that we run out of depth of field, and possibly out of lenses.

In short, we were willing to use ECO, but we found it gave us some new problems. We wanted a low-contrast camera film, but we also needed enough speed for documentary work on location.

That brought us to the first myth about EFB, which says, *"When there isn't enough light, you can push EFB a couple of stops and save it in the lab."*

This piece of mythology, alone, has caused more bad feeling between lab managers and film-makers than unpaid bills and missed delivery dates combined. The statement is true, if that's the only way you can get a picture of a unique event. But too many film-makers have assumed it meant that lighting is no longer important, and, further, that the lab could work some kind of miracle that would not only give them an image, but a *beautiful* image that would cut in nicely with the rest of their footage. Sure, you can push EFB, and the lab can process it, but if you don't balance the lighting you do have, and take extra care about contrast, you end up with an indistinct muddy green blob that won't intercut with anything. It *may* look passable on the workprint, especially if you make a low-contrast Ektachrome workprint, but it *won't* survive the two-step contrast increase to internegative and color positive release print.

This has led to the second myth about EFB, which says, *"You can't make a decent internegative and color positive print from EFB. All you get is grain, contrast, and color shift."*

You do get those changes. But by this time, we had come to expect them. And since we couldn't get the results we wanted with ECO, we set out to improve our luck with EFB. We bought soft-lights to give low-contrast lighting. We shot with a fog filter, to reduce contrast even further. And we began to get acceptable prints. In fact, we got a call from the lab asking if they could show one of our films to a client to prove that a decent print from internegative *can* be made from EFB.

But we were continuing to read books and ask questions, and we kept coming back to the question of the use of color negative. On paper it looked great. The Japanese use it. The British use it. Why shouldn't we?

The mythology, however, is clear on this, *"Color negative looks great in the dailies and terrible on the release print. It's grainy. It shows dirt. You have to handle it too carefully. You're better off with reversal."*

Lab managers tell you this, because they don't trust you to work clean, and they don't want you to be disappointed (and blame them).

You are being warned to expect something that looks quite different from a print made from color reversal. In the first place, it lacks the hard look that comes with increased contrast. In the second place, the grain *is* apparent (but we believe it does not interfere with the picture). And in the third place, dirt on the original shows as white spots on the print.

It used to take two generations—master positive and dupe negative—to make a printing negative from 7254 color negative original. And that meant more grain, more handling, and more dirt. But the development of the color reversal intermediate (C.R.I.) made it possible to make a printing negative from 7254 original in one generation, and the results are quite acceptable.

To provide a fair comparison of 16mm color stocks we shot some tests using ECO 7252 (ASA 25/16); EFB 7242 (ASA 125/80) developed normally; EFB 7242 (ASA 125/80) flashed before developing to reduce contrast,[2] and color negative 7254 (ASA 100/64).

Each stock was loaded into its own Bell and Howell 70DR camera. For each test, a lighting situation was set up and then the lighting was held constant and the T/stop was varied to match the speed of the film stock.

The reversal stocks were developed at WRS Color Tech lab in Philadelphia, which offers post-flashing of EFB, and the color negative was developed at Movielab, New York. Both Jim Anthony at Color Tech and Bernie Macklin at Movielab were extremely helpful. From the camera original, Movielab made an internegative from the reversal, and a C.R.I. from the color negative, and then made color positive release prints from each. (Still prints for this article were made from frames from the 16mm internegative and C.R.I.)

In each case, then, we had gone three generations. The first was the camera original, either negative or reversal. The second was the printing negative, either internegative or C.R.I., and the third was a color positive print.

We shot all the tests on a practical location in the 5th and 6th grade Open Classroom at the H. C. Lea Elementary School, Philadelphia, since this would replicate the kind of shooting situation we often found ourselves in.

Effects of ECO Lighting

Our first test involved filming children at a work table in one corner of the room. The camera was aimed outward, toward the center of the room (See FIGURE 1). The scene at the worktable was lit to 400 footcandles with key and fill light, and a set light was aimed outward, into the room, to raise the general illumination. Readings at the table, the center of the room, and the far corner were 400 FC, 130FC and 65 FC, respectively. We first filmed the scene in a medium shot, with the camera angled down toward the table, and then we tilted up to include the entire room in the shot.

Our prediction was that the scene in the foreground would look normal, but that when we tilted up to include the entire room, the difference of 2 2/3 stops between the foreground and the far corner would cause the background to look unnaturally dark.

This was mainly a test of ECO lighting. We've already stated some of the problems we've found with ECO, because of its slow speed. In this test, our prediction was confirmed. The foreground was well lit, and the background was dark. The 2-2/3 stops difference between scene lighting and ambient lighting tended to make a bright, cheerful classroom look like a cave.

This scene also showed dramatically the difference in contrast handling characteristics of the different stocks. (See comparison photos 1A, 1B, 1C, 1D.) ECO (shot at T/2.8) and color negative, (T/5.6) because of their low contrast characteristics, handled the sit-

uation the best. The background looked dark and unnatural, but these two stocks gave sufficient detail in the shadow or dark areas for people and activities to be visible and legible. On the other hand, the background on the print from EFB (shot at T/6.3) became almost black. Post-flashed EFB (T/6.3) had more detail in the shadows, but was not as good as ECO or color negative.

In our opinion, if you can't pump in enough light to handle the entire room, you're better off using a lower light level, and a faster stock.

Fast Emulsion Lighting

So in the second test we lit the scene to 100 foot-candles. (FIGURE 2). The ambient light in the room remained at about 65 foot-candles, so there was less than a stop difference between the foreground and the background. This test was shot with a one-inch lens, which gave us sufficient depth of field with EFB (T/3.2) and color negative (T/2.8) to be in focus approximately from 8 feet to 25 feet in front of the lens. In other words, our depth of field extended from the front edge of the table to the back of the room.

The difference in the ability of the various stocks to handle this scene was quite revealing. (See comparison photos 2A, 2B, 2C, 2D.) The print from ECO (filmed at T/1.4) was totally unacceptable, due to an extremely short depth of field—only one of the children at the table was in focus.

In addition, the color from ECO was unreal, when compared with the color from the other stocks. One of our complaints about ECO has been that it renders color with a bluish "plastic" look that can never be fully color-corrected. This is, admittedly, a judgment call. Some film-makers may prefer the color of ECO. We don't.

All of the faster stocks handled the scene quite well, but there was marked contrast build-up with EFB developed normally—almost no detail in shadow areas and blocky highlights with no detail in high-key areas.

We preferred the color and look of color negative, but could work with post-flashed EFB if necessary. Our main objection to it would be that it did not handle the faces of black children well enough. The increase in contrast tends to make their features indistinct.

Filming in Daylight

So far, we've talked only about low-light situations—and they're extremely important to us on location. But what about when there's a lot of light? For our next test, we shot outdoors, with 8000 foot-candles of direct sunlight. Our subjects were four school boys—two with black skin, two with white skin—talking in the school yard. (See comparison photos 3A, 3B, 3C, 3D)

The worst situation was the print from EFB (filmed at T/22) in direct sunlight. The contrast was brutal, especially on the black faces, the features of which all but disappeared. (We compared this print with the original of the same scene, just to see the effects of contrast. The original handled the scene quite well. The print from internegative didn't.)

Post-flashed EFB, shot at the same T/stop, was better but still showed the effects of contrast.

Even better was the release print from ECO (filmed at T/11). We would rate it acceptable, except for the effects of contrast on the black faces. Any shadow, any turning away from the sun, caused their features to disappear. We need a film stock that can provide detail from both black and white skin.

The print from color negative (T/22) was noticeably grainy, but had normal contrast, natural color, and good detail on both the black and white faces.

Specular vs. Softlight

A typical, difficult location lighting problem in a school is someone writing at a chalkboard. The problem comes from the subject being so close to the chalkboard (or wall) that his shadow is projected directly onto it. With specular (or direct) lighting from key, fill and set lights, this can cause two or three different shadows. This looks unnatural, since most classrooms, these days, use fluorescent lights, which give soft, shadow-free lighting, and that is the look an audience is accustomed to seeing. Since we don't like the effect of fluorescents on film, our solution is to turn off the fluorescents, and light the scene with Lowell soft-lights, which also give soft, relatively shadow-free lighting. The problem is that these 1000W soft-lights have a reduced output—approximately 64 foot-candles at 10 feet, and it is extremely difficult to get the 400 foot-candles needed to shoot ECO at T/2.8.

So we shot our fourth test two ways. We lit the scene to 400 foot-candles with specular light for ECO, (FIGURE 4-1) and we used three softlights to provide 200 foot-candles for the faster stocks (FIGURE 4-2) The results were interesting. (See comparison photos 4A, 4B, 4C, 4D)

ECO (filmed at T/2.8) looked good, as far as contrast, grain, and color were concerned, but each hand movement caused three shadows on the chalkboard.

EFB (filmed at T/4.5) and processed normally was acceptable, except for the fact that the single soft shadow from the soft-lights, which was almost invisible in the original, filled in and darkened from contrast build-up to a solid black shadow in the print.

Post-flashed EFB showed an increase in the darkness of the shadow, but was clearly usable.

And color negative (filmed at T/4.0) rendered the scene most naturally, for color and contrast, but had the most noticeable grain.

We started our quest through the mythology of 16mm color, because we wanted a stock that would meet our need for an attractive release print from a second generation printing negative. We wanted a stock that could handle contrast well, without losing detail in the shadows, or blocking up the highlights.

We wanted a stock that would reproduce color as we saw it, even after it had gone two generations in printing. And we wanted a stock with enough speed that the supplementary lighting of a scene could be kept close to the ambient light, so that a room would look natural, even in a long shot.

Low Light and Fast Film

Suppose we're filming in the library of a school, where there's a class in progress. The ambient light is in the range of 30 to 40 foot-candles. We are going to fill the scene with a couple of 1000W softlights, which will raise the illumination in the foreground to 65 foot-candles. And we're going to use a T/2.5 12-120mm zoom lens. (See FIGURE 5) Our final test was to see what this scene would look like on ECO, then EFB, then flashed EFB, and finally on color negative. (See comparison photos 5A, 5B, 5C)

From ECO, we got nothing. ECO is two stops too slow to get a picture under the test conditions. We needed one of the faster films.

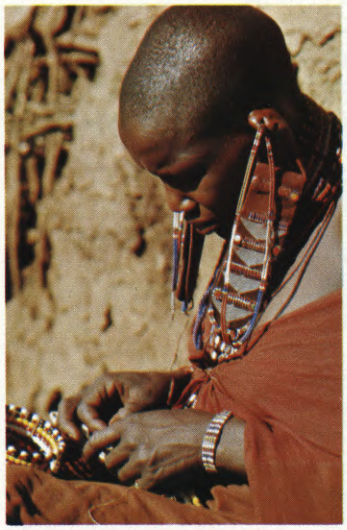
EFB (filmed at T/2.8), developed normally, provided a good depth of field, but great loss of detail, due to contrast build-up. We needed to reduce contrast.

The same scene with the same lighting and same exposure filmed on EFB that had been flashed to reduce contrast offered some improvement, but there was still a loss of detail in shadow areas, due to contrast.

Finally, we shot the scene with color negative at T/2.5 Frankly, we could live with either the color negative or the

(LEFT) A late afternoon in Kenya, just after a rainstorm, with visiting Game Warden Ted Goss and his children. Toyota pictured is the "safari unit" which was designed specially for filming in the African bush. (CENTER) Serengeti is a paradise for animals—and photographers. Leopards like this one can be approached at close range in a car. Problem of contrasty lighting was solved through use of a small Lowell reflector. (RIGHT) Sound recording of Masai woman in Kenya. Flies buzzing around microphone sometimes ruined sound track.

(ABOVE LEFT) Giraffes are among the gentlest creatures in Africa. Lions kill some of them, but man is their most dangerous enemy. (CENTER) Filming a sync-sound documentary on poaching problems. Giraffe was killed by poacher so tail could be cut off for use as fly-swatter. White cover on camera magazine reflects hot African sun. (RIGHT) Filming a Masai dance sequence for a feature film (16mm blow-up). (BELOW LEFT) Masai warrior, with ochre-painted body and braided hair, performs dance. (CENTER) Members of Masai tribe listen fascinated to their voices on Nagra IV recorder. (RIGHT) Masai woman doing beadwork.



(LEFT) Preparing to film wild horses in Montana from a helicopter, with Tyler mount. (CENTER) In Wyoming, set-up of four Colortran 1000-watt multi-focus lights for filming night sequence. "Studiomobile", a converted motor home serves as a $25,000 blind, as well as providing electrical power for the lights. (RIGHT) In the Canadian Rockies, some of the Bighorn sheep were so friendly that they became nuisances—licking and kicking the tripod and just plain staring into the camera.

FILMING WILDLIFE

Continued from Page 663

thunderstorms, snowstorms, fog and rain as an important part in portraying nature, too much of it can spoil the project. Obviously, the bad weather will ultimately change to sunshine and it is a matter of budget as well as deadlines as to how long a crew can sit around waiting for this to happen. It is here where a small crew has an advantage. It is certainly less costly for two people to sit and wait than a large team. In practice, an average of two out of ten shows had to be shelved due to weather problems. Later pickups allowed us to complete one out of these two, with an end result of one out of ten being completely abandoned. This meant that any expenditure on the cancelled episode was allocated over all other episodes and thus raised the cost of each completed program.

Luck, of course, has a lot to do with this type of filming. Sitting in a blind waiting for the unusual to happen is like playing a slot machine. You may play for hours and nothing happens, then you leave and—Jackpot. Over the years I sort of developed an extra sense; one gets to know the habits of the animals and, within reason, can predict what they will do next. Time, of course, is of no concern to the animals and they are certainly not interested in your deadline.

Many people think of wildlife camera equipment in terms of giant telephoto lenses, remote-controlled cameras, and complex blinds. I am often asked about my ideal system, but there is no such thing as one perfect setup. One has to choose his equipment for the location and type of wildlife to be covered. I consider the 16mm ARRI M a good solution. With a 12-120 zoom lens and a 300mm telephoto lens, one can go a long way. A hand-held 16mm BOLEX with prime lenses of 10, 25, and 50mm is a perfect second camera for grab shots, fast action, wide angle coverage, aerials, and dolly shots.

The prime camera has to be one with electric drive, and with a 400-foot magazine. To film wildlife with 100-foot rolls is impractical and frustrating, since the action always seems to happen when one is at the end of a roll. Occasionally, even the ARRI M becomes too heavy. Going on 20-mile hikes into the interior of the Canadian Rockies looking for Bighorn Sheep, to carry an ARRI M with two magazines, two batteries, a heavy tripod with fluid head, 2000 feet of film, plus camp gear and food requires a jolly green giant. I have done it twice: the first time and the last time! I quickly changed my system for remote backpacking to a Beaulieu camera with a 12-120 zoom lens and 200-foot daylight spools. Two 1000mA batteries drive well over 2000 feet of film and, with a lighter tripod with fluid head, I am able to keep up with the movements of the animals. Since my assistant, in this case, carries a Pentax still camera with 50mm, 135mm, and 300mm lenses, I can also use these lenses with a special C-mount adaptor on the Beaulieu. So far, the Beaulieu has performed at temperatures of -20 degrees. Changing film on it, is, of course, a delicate struggle, especially with cold winds and snow blowing.

Most of my real "big game" experience was gained in Africa. I was fortunate enough to visit this last stronghold of the animal world every year for a few months in the past six years. It was also in East Africa that I designed and built a safari camera unit for use in the African bush, which I consider a dream come true for my type of filming.

When making films in Africa, I would usually fly with raw stock, equipment and money to Nairobi, spending days clearing customs and renting a car. Making advance hotel reservations proved to be impractical, since weather changes or animal movements made us go someplace else many times, and, since all arrangements had to be prepaid, a refund on cancellations was unheard of. Most of the time, we, our African driver and two-man team (cameraman and asst. camera) would drive in a VW bus with a large open sunroof, tripod extended inside the car, bouncing over the plains and bushland of Africa.

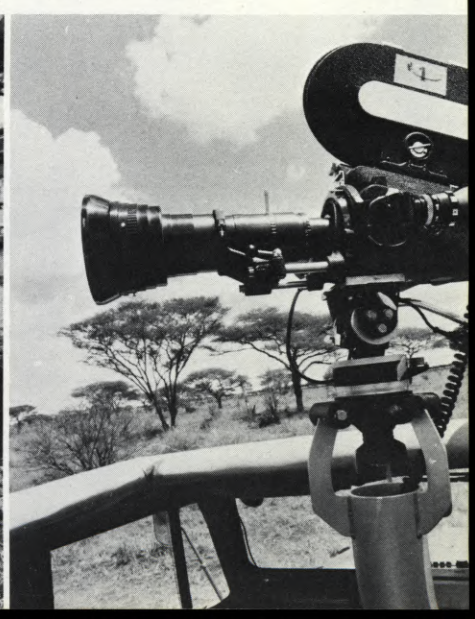
Since the National Park laws are quite strict about not getting out of the car when in a park, most of our filming was done through the open hatch. Keeping the tripod level, as well as the camera cases from falling all over the interior of the car, was a very frustrating job. It took me four safaris in this inefficient manner, (even though we did make some rather nice films this way) to design and build my own ideal camera car. I knew it had to be 4-wheel-drive with oversize roof hatch, should have a permanent camera mount, all equipment built in, no loose boxes and cases, and last, but not least, should have a trailer with a complete and comfortable camp outfit.

I first purchased a 4-wheel-drive Toyota Landcruiser in Nairobi which was completely modified by a company in Nairobi. In addition, a dustproof single-axle trailer was built and I bought a complete safari outfit for a 3-man team, including shower and toilet tent, refrigerator, generator, etc. If I had to spend a lot of time in the veldt, I figured I might as well be comfortable. In the meantime, I shipped new camera and sound gear to Africa, including an Arri 16 BL, 25-250 Angenieux lens, Nagra IV recorder with Sennheiser shotgun mike, etc. Tyler Camera Systems built a special telescopic camera mount, which was permanently installed in the vehicle. When the unit was finally completed in 1972, it was the only such equipped vehicle in East Africa, a sort of mini-Cinemobile with sleeping accommodations for three and supplies and water for three weeks' filming in the bush. For the next films produced the unit turned out to be the ideal solution for operation in Africa.

The complete camera equipment (Arri BL with 10-100 Zeiss lens, Angenieux 25-250 lens, Bolex with three lenses, as well as two Pentax cameras with 20, 50, 135, and 300mm lenses) is carried in foam rubber in a

Continued on Page 723

(LEFT) Toyota "Safari Unit", specially designed and modified for filming in the African bush. Tent, camp supplies, generator, lights, etc. fit into special dustproof trailer. (RIGHT) Solid post mount for camera sticks up through the sun roof of the Toyota, permitting the filming of dangerous animals from the safety of the vehicle.



"CHILDREN OF THE MORNING"

Continued from Page 659

maneuver in which the skier rotates his body in vertical and horizontal planes simultaneously, is the real mind-blower of the repertoire, but the double and triple flips are pretty spectacular also.

Mike has three cameras deployed on the hill for this event. He is operating the Locam, covering all three jumps in turn with high-speed filming. Roy is shooting the Bolex and David has a Beaulieu R16B with an Angenieux 12mm-120mm lens.

The competition begins and the daredevil skiers come soaring off the jumps, defying gravity in a most fantastic way, describing incredibly intricate patterns in the air before becoming earthbound again.

At one point I see Mike crouched in a hole in the snow dug directly under the second jump, pointing the Locam straight up and getting what must be some very exciting shots of the skiers soaring in space overhead.

Then the inevitable streaker comes hurtling down the course, naked as a jaybird except for skis and boots. He is in magnificent form (no pun intended), executing flips so nearly perfect that, in my opinion, had he been legally entered in the competition, he probably would have won. As it is, his gutsy performance triggers a rousing cheer from the spellbound crowd.

As the strenuous competition continues there are some horrendous falls but, fortunately, none of the tragic, near-fatal accidents that marred last year's competition in this event.

After it's all over, we relax at a beer-bust in the Lodge, sponsored, logically enough, by one of the major American breweries. Knowing that music will be an important part of his film, I ask Mike to tell me about that phase.

Mike says: "As far as musicians go, I'm using John Stewart, who helped me write the music for 'EARTH RIDER'. He wrote the song, 'CHILDREN OF THE MORNING', which is the title tune for our film and he's one of the most gifted song writers in the country just now. I'm also using my friend, Tim Gorelangton, who helped me on 'EARTH RIDER'. I'll be playing some of the guitar myself and my brother, who is a student of Earl Scruggs, will be playing the five-string banjo. Scruggs has given permission for us to use some of his tunes.

"In building the tracks, I'll be running the lip-sync sound into an Akai 8-track, 4-channel tape deck, mixing it with the music on the spot and running

it through four speakers. The object is to combine the lip-sync and sound effects with high-quality stereo music to accompany the 16mm film. This is something that I'm sure hasn't been done yet on ski films or films made for the lecture circuit."

I'm amazed when he tells me that the entire editing of 'EARTH RIDER' was done with a pair of rewinds and a Moviscop—especially since it's a rather intricately put-together film. He admits that he had trouble with the timing, working this way, and now he longs for a KEM or similar flatbed editing console. He vows that he'll have one, somehow, by the time he starts to cut this film—and I believe him.

The following day, which is the final round of the championship series, is devoted to the Freestyle Mogul competition. The main camera vantage point is the snow platform halfway down the course which the boys had shoveled out a few days before.

Mike gets the idea of mounting the Locam and Bolex cameras together side-by-side in order to be able to intercut high-speed footage with footage of the same scene at 24 frames. He's sure this hasn't been done before in ski photography and he wants to try it. But how to butt these two cameras together without some sort of elaborate base plate? Gaffer tape, of course. As any cameraman knows, it's gaffer tape that holds the world together.

The arrangement of the two cameras is none too chic to look at, once they've been taped together, but it works and Mike gets his shot.

Meanwhile, the skiers entered in the competition are making some fantastic runs down the field of solid moguls. They perform mid-air (helicopter) turns and other little goodies on the way down and make it all look easy, somehow.

Then comes a pair of streakers, one right after the other. The first lad makes it down all the way with flying colors—or appendages—or *whatever.* The second bloke is not so lucky. He takes a terrific tumble halfway down and bounces off every mogul all the way to the bottom. I'm sure he must have skinned himself from stem to stern on the abrasive ice as he ricocheted down the course. That sort of thing is especially hard on the stem.

After the race is over, the crew films the trophies being handed out and also some scenes of a station wagon, plastered with vari-colored stickers, which Mike coolly tells me they are ultimately going to blow up (with *dynamite!*) for the final sequence of the picture.

That evening a banquet is held in the

Lodge to honor the winners of the freestyle championships. In Hollywood, where I hail from, the term "The Beautiful People" refers to denizens of the so-called "jet-set" who seem to spend most of their time crawling from one party or night club to another, but as I look around me at these happy, healthy, athletic skiers, brimming with vitality, it strikes me that *these* are truly "The Beautiful People".

Before I board my plane for Hollywood, there's one more thing I want to find out from Mike Marvin. I want to know all about this business of blowing up station wagons and setting skiers on fire.

"Well, we wanted to get something to top the ending in 'EARTH RIDER', where Rick Sylvester skis off the top of El Capitan," he says. "The idea for the fire jump was brought to us by a daredevil from Vancouver, British Columbia, who knew we'd done the El Capitan jump. He said he would set himself on fire and jump off a cliff on skis. We didn't believe him, but then he showed up and we did it. We set him on fire and he jumped off the edge of a cliff. Of course, he was wearing a special asbestos tailor-made suit, so he didn't get singed.

"Anyway, for the fire jump that we're going to shoot in a couple of weeks we're fitting Troy Caldwell and 'Rocket' Bertoli out with suits like that and then we're going to set them on fire and shoot for three days until we get four minutes of good film we can use. We needed something to lead into the fire scene and I remembered reading in *American Cinematographer* about some guys who blew up a car for their movie, and it seemed like a good idea. We'll be shooting that scene shortly with two Redlake Hicam cameras, that go up to 45,000 frames per second, and two Locams, that go up to 500 frames per second. We'll also shoot it with a Bolex and an Eclair NPR. The interesting thing about blowing up the car is that the Hicam camera will set off the charge electronically when it reaches speed. There's still a few logistical problems—like finding a place to shoot it and getting enough dynamite and gasoline to make a really big explosion, but we'll work it out.

"On the screen it'll be a sort of surrealistic scene—a fantasy scene. The station wagon will blow up in super slow motion, and then you'll see four skiers on fire floating through the sky to one of John Stewart's songs called *'Spirit'*. It'll be a real mind-blower!"

Great!

But what will he ever do for an encore? ■

Continued from Page 719

dustproof steel camera safe bolted to the car.

The permanently installed Tyler telescope mount offers unobstructed panning capabilities 360° when fully extended. Power for the BL comes directly from the car battery through the telescope to the camera. No more camera battery charging problems.

The Nagra IV is built into a shelf on the passenger side and always ready for recording.

A Miller tripod with a large fluid head is stored under the camera safe for filming outside the car. Raw stock storage is in a special case under the seat. 10 x 50 binoculars are mounted for easy access for spotting game.

High-powered quartz searchlights, as well as a large tool box, heavy duty jack and two additional gas cans, are mounted on the front of the car with a heavy-duty bumper for going through heavy brush.

Besides the safari gear, the trailer carries two 20-gallon cans of water, four additional gas cans, as well as a Honda gasoline generator and five 750-watt lights with stands and cables and, finally, an Avon rubber raft with outboard motor—for the rainy season!!

Filming wildlife in Africa could be a lifetime job, since there is an endless variety of animals in great numbers roaming the open plains, the bushland, and the jungles of that continent. It was, and still is, for this reason that a multitude of films are produced in Africa each year—and have consequently oversaturated the public's taste. Now, one has to show a bit more than just herds of elephants and prides of lions. I have filmed the "great migration" of one million animals in Serengeti, which was an exciting task. Other projects, like the life-cycle of the Flamingos, were equally interesting. After all, again I had a cast of over one million.

It was in Africa that I changed my filming concept from strictly wildlife to wildlife documentary and went location sync-sound. Obviously, one needs more than animals grunting to justify sync-sound. We also didn't want plain boring interviews with people just staring into the camera. So we started to follow people into the bush, people like wardens and scientists. The authenticity of filming a team of scientists in sync-sound, tracking elephants on foot, darting the elephant with a tranquilizer gun and, after he goes down, mounting a radio transmitter collar on him, is by far

more interesting to the viewer than dry narration. Properly rehearsed, we were able to film the entire operation sync-sound, from sneaking up on the elephants, with the scientists just whispering to each other, which the Sennheiser shotgun mike picked up beautifully—including even the heavy breathing of the elephants nearby—to the grand finale, where the elephant awakens, trumpeting anger and stampeding off into the sunset. In addition, with sync-sound, the audience gets the factual information directly from the scientist's mouth.

Technically, filming sync-sound is certainly more work, not only for the film crew, but for the editor as well, but in the field, it can be handled by a two-man team. Using crystal control, automatic start and blooping of the Nagra IV from the camera, all the soundman has to do is point the mike at the subject and monitor the recorder—and try to stay out of camera range, including his shadow. We only slated each magazine and each corresponding roll of tape once at the start, thus saving more time.

With the ARRI BL on a shoulder-pod, I was able to get steady shots, as well as effective trucking shots. A second blimped camera would at times be helpful for a more complete coverage, including wide shots, cutaways, and POV's, but some of these shots, like a closeup of feet stalking, a closeup of someone looking through binoculars, etc. (important in the editing stage), were easily re-created. Besides, many times, too large a crew would make this type of operation impractical.

Later, I produced similar films uti-

lizing extensive sync-sound, tracking other animals in Africa, including a film on leopards and one on hippos and crocodiles. Filming the hippos was especially challenging, since I was able to be face to face with them, using my underwater camera at Kenya's Mzima Springs—but obviously without sound!

One subject of wildlife photography that I haven't mentioned, but one that is becoming more and more accepted, is filming trained animals or semi-trained animals under controlled conditions.

In animal films, all the audience is really interested in is good coverage and good closeups. It is the closeups that bring the *aahs* and *oohs* from the viewer. To get some of these closeups or tight action, it would seem that the cameraman had to use a 2000mm lens, a very unlikely way to film intimate animal action.

Animals under controlled conditions have been used by major wildlife film producers, such as Disney, for many years. Only in recent years have other films companies ventured into this seemingly "easy way out" method. But it is anything but easy to work with trained animals under controlled conditions. The only difference is, that under these conditions, the animals are compounded and can't run away and can be directed to a certain degree, but most important, one doesn't have to roam the forests and mountains for endless months trying to film a grizzly and a cougar fight. Just put these two animals together in the compound and watch what happens!

Strict new rules on U.S. television allow wildlife film producers to "cheat" to a certain degree, as long as this type of filming is later acknowledged in a disclaimer at the end of the program, stating that some sequences were filmed under controlled conditions. But networks, as well as the public, take a dim view of somebody trying to fool them. This, so far is only applicable to documentary-type programs that purport to tell the real life story of animals. Make-believe-type programs, such as "LASSIE" and "WONDERFUL WORLD OF DISNEY", are not of the documentary type and, thus, get by without disclaimers.

There is, so far, no restriction about tame, trained, or controlled animals on feature film production, except that the SPCA or the Humane Society likes to look over one's shoulder to make sure that the "stars" get proper treatment.

As far as I am concerned, I have filmed both ways and find each rewarding, but there is nothing as exhilarating as stalking the wild animals of the world on their own ground. ■

CINEMATOGRAPHERS SPEAK

Continued from Page 679

QUESTION: What sort of lighting equipment do you use?

DI PALMA: I use only quartz lights in the Ianiro housing.

QUESTION: Where are these units made?

DI PALMA: In Rome. The Ianiro housing was made for the first time for me, and now I see them all over the world, and quite often in use in London.

QUESTION: Why do you use this type of light; what are its advantages?

DI PALMA: Because I have particular needs that demand that I have lightweight equipment: I work primarily on location and not in studios.

QUESTION: Am I to understand, then, that you don't use the lighting equipment that is more or less standard and commonly available?

DI PALMA: Yes, that's correct. For emergencies I might use anything: 5K's, 10K's, brutes, etc. I use two sizes of Ianiro lights: a six-light unit equivalent to a 10K, and a three-light unit equivalent to a 5K light.

QUESTION: What do you use in the way of lighting if you're shooting exteriors night-for-night?

DI PALMA: Even at night I use the small lights because the large lights detract from the more truthful feeling.

The advantage of the Ianiro light is, for example, take this room we are in right now [an average size hotel room]; I can put the Ianiro units all over the room anywhere I like; they are small enough for this purpose, and they are held on by small suction cups mounted on the back of each lamp.

These units also have the additional advantage of keeping a constant color temperature for up to 100 hours of use; whereas, the 10K's show a marked drop in color temperature.

QUESTION: How long have you been using these units?

DI PALMA: Since 1964. I was the first one to use these units in Italy, when I shot RED DESERT.

QUESTION: What kind of lighting units did you use before RED DESERT?

DI PALMA: Photofloods for interiors, and Brutes on exteriors.

QUESTION: How do you think your style of lighting is influenced by the equipment you use?

DI PALMA: I start off from the reality of the location. Practically, it is the opposite of what you asked: that is, I have not been influenced by the equipment. I have a certain way that I have to do my work and I adapt my equipment accordingly.

QUESTION: Do you feel the lighting equipment limits you in what you can do?

DI PALMA: Never.

QUESTION: Do you feel you are able to do things with this equipment—the Ianiro lights—that you were not able to do, or which was more difficult to do, with the former heavier lighting equipment [you used before *Red Desert*]?

DI PALMA: I feel that with this kind of equipment I can invent whereas with the other [heavier] equipment I get more of a professional look; I cannot really adjust it to what I want to create. I've been making films for a long time and when we were using black and white film there was a whole different type of a film that we were shooting, and then when color came along the whole method of shooting films was changed. I have done research into the kind of lamp that would permit me to categorically do what I want to express as best I can. The bigger professional lamps do not allow me to do these things, as they do not have the flexibility of the smaller ones.

QUESTION: What lenses do you use?

DI PALMA: I use as my standard lens the 25-to-150 Angenieux zoom; and, depending on the exigencies of the scene, I use, as well, 9mm. and an 18mm. Cooke lenses as fixed-focal-length lenses.

QUESTION: Do you like using the zoom lens?

DI PALMA: I think it's an extraordinary lens. With this lens one can go out to shoot a whole sequence without changing lenses. In a few seconds I'm able to find the correct angle of view. I don't like to use the zoom as a replacement for the dolly shot; I use it to find the correct size of the image, and only to make small adjustments in the course of a given shot. There is also sometimes

the necessity that the zoom—for the effect of the image—must move forward; and, often, there is a need for the zoom to be used as an effect by which the image moves forward. The uses of these exigencies greatly depend on the particular story you're telling or what scene you're doing. I try to use the zoom as little as possible in this way.

QUESTION: Why do you not approve of the use of the zoom as a substitute for the dolly shot?

DI PALMA: Because it's mechanical, because it's not a normal movement, it's forced; it's typical of television commercials.

QUESTION: Do you do a lot of improvising on the set?

DI PALMA: Almost all the time. I can never say that tomorrow I'm going to do this and this and this, with any degree of certainty.

QUESTION: Could you give me an example of how you work with a director?

DI PALMA: The first thing that I do with the director is to study with him the story of the film (the script) and what the mood or feeling of each character is in that script. Then I say what the style of the photography (the light, the illumination) should be for each scene. This happens, of course, after I've seen the location.

The most important thing that I do with the director in relation to the script is to discuss the spirit of the film, how the light is going to create a certain emotion, and the feeling of the film throughout its entire length. Then, on location, a given lighting set-up can be changed on the day of the shoot; it doesn't have to remain exactly as planned on a previous day. What has been discussed and established with the director is how the lighting should influence the whole film.

I am more interested in your artistic questions than in your technical ones: the technical comes from the stomach, the artistic from the heart. With the technical, there are certain things that are set and they are mechanical; whereas, there are certain things that in lighting I create every time, the artistic part.

For instance, one morning I come into a room (on a set) and I have to shoot a scene in which there is a lot of yellow. That morning that particular yellow gives me a special sensation. Of course, I know how I have to light that

particular room, but I might have a moment when I get a certain sensation and I might do something different [regarding how I have lighted the room]. I don't say: well now it is yellow and I have to do it like this. You cannot have certain rules of lighting, because if you shoot a film in Africa, if you shoot a film at the North Pole, there are different emotions which you have to express. There must not be any rules.

QUESTION: Now, in that particular example, what would you then do? Would you discuss the question of changing the lighting with the director?

DI PALMA: Sometimes I tell him—if I am a friend of his, I tell him—otherwise, at other times, the director doesn't even realize that I have made the change. Eighty percent of the directors don't see the difference.

QUESTION: What if the director doesn't agree with your way of lighting a scene?

DI PALMA: I have never had an experience of that sort.

QUESTION: Have you ever used flashing or post-flashing in your work?

DI PALMA: I have never used it. I've never had the opportunity to try it.

QUESTION: Do any labs in Rome do flashing for their customers?

DI PALMA: Yes, the Technicolor lab. Many Italian cameramen use it.

QUESTION: What do you think of flashing as a technique?

DI PALMA: It's very interesting.

QUESTION: What is your relationship with the lab?

DI PALMA: It's a case of mutual love, especially since RED DESERT. Because the lab realized how important the film was they put out their maximum effort. I believe the Italian Technicolor lab (in Rome) to be one of the most important labs in the world, and French labs are very important as well.

ASSISTANCE IN TRANSLATING THIS INTERVIEW WAS PROVIDED BY EVAN KLEIMAN AND RON SCIBILIA.

HEIKKI KATAJISTO—Finland

Director of Photography

In a country where feature produc-

tion work is often hard to come by—last year six features were made there—Finaldn's Heikki Katajisto has managed to keep fairly busy shooting on the average since 1964, one feature a year, Three of his cinematographic efforts have been made under the very able direction of one of Finland's most accomplished directors, Jörn Donner: PORTRAITS OF WOMEN (1970), ANNA (1971), and MOMMILA MURDERS (1973). Heikki Katajisto currently divides his time between directing Finnish TV commercials and lensing feature films in that country.

QUESTION: Do you shoot most of your films in studios in Finland or on location there?

KATAJISTO: We very rarely shoot feature films in studios. Studios are usually used only for shooting commercials. On rare occasion a very old studio in Helsinki—the only one in all of Finland—is used for shooting features.

QUESTION: Since you don't have any major studio in Finland, do you usually shoot, then, on location with very portable equipment?

KATAJISTO: Yes, that's true. We try to keep it as portable as possible.

QUESTION: What kind of cameras do you use when shooting features?

KATAJISTO: Arriflexes. Sometimes, when I use 16mm., I use an Eclair. Very rarely, if there's slow motion or something, we rent a Mitchell from Samuelson's in Amsterdam.

QUESTION: Do you often use zoom lenses?

KATAJISTO: No, I hate zooms because they are too easy to use. I don't like very long focal length lenses because they distort too much, and it's so easy to get pretty pictures with them. The flattening effect seems so cheap.

QUESTION: Do you prefer to use hard, fixed-focus lenses?

KATAJISTO: Yes, if I can.

QUESTION: What kinds of lighting equipment do you most often use?

KATAJISTO: Almost anything. I use Mini-Brutes, although I am not happy with them; they're too red. They're supposed to be 5000°K—the ones we had—but they're not; they're more like 4000°K.

QUESTION: Do you prefer to shoot with soft light?

KATAJISTO: Yes. Now we have in Finland some very good specially-built equipment, a 2K soft light called in Finland Monimetallipurkauslamppu. It was developed for use during the Munich Olympics. It has small metal particles inside the bulb that turn into a gas, and it burns at 6000°, at 2K. They can be plugged into ordinary household outlets. The housings for these lights are made in Finland, but the bulbs are made in Germany.

QUESTION: What kinds of lighting units did you use in your earlier features?

KATAJISTO: ColorTran.

QUESTION: Is that very commonly used today in Finland?

KATAJISTO: Yes, they are the most common type used there. They're very light.

QUESTION: What film stocks do you use?

KATAJISTO: Eastman 5254 all the time.

QUESTION: Is that the most commonly used stock in Finland?

KATAJISTO: It's the only stock used there. Everyone who shoots in Finland thinks it's the best stock available.

I had some bitter experiences with Agfa stock and found that the rated speed didn't agree with the actual film speed of the stock. And, of course, it has to be processed in Germany, which creates problems.

Sometimes Agfa is used as printing material, even from Eastman original, but when I shoot I insist that Eastman also be used as printing material, too.

QUESTION: Do you have anything to say regarding such matters? Isn't that out of your department?

KATAJISTO: I've been very lucky, the producers I've worked with have been very kind.

QUESTION: Do they allow you to supervise the timing of the prints?

KATAJISTO: Yes.

QUESTION: You don't have to fight them on that score?

KATAJISTO: There isn't much fighting in Finland. It's a small country and everybody's happy there—in that area, anyway.

QUESTION: Do you see your lighting style as being shaped by the tools or equipment you work with?

KATAJISTO: As a principle, I wouldn't use artificial light at all, if possible, in order to let things be as they are, and to attain maximum realism.

QUESTION: Do you only work in features now?

KATAJISTO: No, I'm directing commercials. It's hard to find work in Finland, because they produce so few feature films there, something like six or seven a year. The country is in the middle of a crisis again, one of our usual crises.

QUESTION: What's bringing about this crisis?

KATAJISTO: Money. The films don't sell, especially abroad there is virtually no market.

DAVID SANDERSON—Australia

Director of Photography

Since 1968, when David Sanderson graduated college, he has been working as an assistant cameraman, cameraman, or Director of Photography on a variety of different types of films: TV dramas, training shorts, documentaries, and dramatized documentaries, as well as TV spots. In recent years he has been Director of Photography on shorts (such as AFTER PROUST [1970]) and experimental films (such as PHALLIC FOREST) which have provoked some international critical interest.

David Sanderson's most recent feature Director of Photography credits include: SHIRLEY THOMPSON VS. THE ALIENS, and ONCE AROUND THE SUN.

QUESTION: What kind of film stock do you generally use in Australia?

SANDERSON: If I'm shooting 35mm color I use 5254. If the movie's in 16mm, I generally shoot 7052, which is Ektachrome. I use the reversal because I find the grain in Eastman Color too much. It might be local processing—I don't know what it is—but it's just not terribly satisfactory, and besides the reversal is easy to blow up to 35mm later on. If I'm shooting black and white 35mm, it all depends on how much

speed I want. I don't like to use a stock faster than Double-X negative; Plus-X negative and Double-X negative are generally the slow and fast stocks I use in black and white.

QUESTION: You only use Kodak films?

SANDERSON: Well, I've done tests on Fuji color, which is the Japanese equivalent of Eastman 5254, and it just doesn't bite into the shadows like 5254 does; it hasn't got the contrast. It's comparable to the old Eastman 5251, the old slower stock.

QUESTION: What cameras do you use?

SANDERSON: The Cameflex (CM-3) with Nikon lenses, I also use Cooke lenses, standard, and Mitchell (BNC).

QUESTION: Why would you use one over the other. Is it simply what's available?

SANDERSON: Basically, what's available. Whenever possible I use Cameflex for handholding. If I'm going to get a lens that's got an Arriflex mount on it I'll use an Arriflex camera.

QUESTION: What types of lighting equipment do you use?

SANDERSON: I like to use the Mole-Richardson soft-lites or the ColorTran soft-lites.

QUESTION: What size?

SANDERSON: 4K.

QUESTION: Do you use all sizes?

SANDERSON: Well, unfortunately we haven't got 8K's over there in Australia like you guys have here.

QUESTION: Do you know why?

SANDERSON: Well, we just haven't the equipment; there's something like six or eight Brutes in the whole country. I also use reflectors. I use umbrellas: I quite like soft lighting, and I use them with hard lighting, as well, because quite often you're in a situation where there's hard and soft lighting together.

QUESTION: What types of lenses do you generally use?

SANDERSON: Nikon on an Eclair. It's got a special mount—a Nikon mount—on the body. You can obtain the mount from Nikon distributors.

QUESTION: Why do you like the Nikon lenses?

SANDERSON: Because they're sharp. I also use Cooke lenses; with the Nikon and the Cooke you've got the range [of focal lengths] covered. For example, you can use a 20 mil. Nikon, a 24 mil. Nikon, or a 28 mil. Nikon; you can get a 25 mil. Cooke, a 32 mil. Cooke, and a 35 mil. Nikon, etc. and you go through the whole range. There are some very good Nikon lenses. For example, the 85 mil. f/1.8, a fairly long lens, that's fairly fast, too; it's fantastic for close-ups and interiors, and low-light situations. With a bit of post-fogging, say 15%, you can rate your Eastman Color at almost 400, you can go an extra stop, or stop-and-a-half.

QUESTION: In what sort of situations might you use that combination?

SANDERSON: Just to achieve a photographic effect, to lower the contrast, to make everything smoky and misty, to make the picture look ethereal, surreal, soft—a certain evanescence in the image.

QUESTION: What kinds of lenses do you use with the other cameras?

SANDERSON: With the Mitchell you have the straight Bausch and Lomb lenses: you start with the 20mm, 25mm, etc.

QUESTION: Would you comment on your own lighting style and what have been the influences on that style?

SANDERSON: There's an Australian painter called Tom Roberts, whose pictures are just pictures—though they're paintings—and you can see this incredible sense of movement in them. You look and you look and you can't figure it out, and then suddenly it hits you. It can be seen in a painting he's done called "Collins Street". You've got all these small figures on this wide shot of this street; you see that the people who are stationary and are very clearly defined and the people that are on the move or in transit are slightly blurred, which gives them a great sense of movement.

QUESTION: Do you have a set way that you relate to the director on a production?

SANDERSON: The only thing I think is set is that I'm there to give him the material: to augment his principles, his ideas, his theories, his art, his craft—call it what you like. I'm his right-hand man,

his key technician. I'm the technical foreman and I think you've got to sort of command a certain amount of discipline out of these buggers like gaffers and grips. You've got to get them working for you, you've got to get them working with you, and you've got to get the shots as well. The director's the super-star, he's the boss, he's the man with the idea who's been given the picture to direct.

I think you've got to be able to suggest to the director that maybe it would look good from here, suggesting, and coaxing all the time. He'll come around to your way of thinking, he'll start trusting you, he'll start believing in you. Even when you see bad shots he'll think they're great. After all, what's a bad shot? Someone thinks it's a bad shot because it's badly composed or badly framed.

QUESTION: Don't you believe in that?

SANDERSON: I take everything out that I want to get out of the picture. I put things in and out. It's juxtaposition of objects, not just a frame around something. You've got to work like a painter in this regard, make your pictures what you really want them to be. Why compromise? You've got to work at it, you've got to build them up so that they, too, convey something as well—not only the action; what they don't hear in the sound, what they don't get from the acting. The image should be able to relate another story as well. Maybe when you don't notice that sort of thing, maybe that's when it's working—when all the elements are combined and the confluence of those energies makes something really worthwhile. ■

NEW PROJECTION SYSTEM FOR LENS CHECKING

Victor Duncan, Inc. has recently developed and perfected a unique lens projection system. One of these projectors is located in each of the three Victor Duncan offices in Detroit, Chicago and Dallas. These precisely-made projectors allow our technicians to immediately spot any idiosyncrasies in zoom or prime lenses. A complete check of focus, drift, image stability and overall optical quality can be done on a zoom lens within 30 to 60 seconds. As a matter of fact, we invite our customers to check their own lenses on our projector . . . it's that simple!!

The Victor Duncan lens projection system is the latest addition to the company's inventory of precision check and double-check tools.

STAR BEHIND THE CAMERA

Continued from Page 669

Although VistaVision was never widely used by other studios, it perhaps sparked the development of other 70mm processes such as Todd-AO and Technirama. On the 35mm market, CinemaScope was supplanted before the end of the decade by Panavision, a process that worked on the same anamorphic principle but with better lenses not subject to CinemaScope's inherent problems. By 1965 even 20th Century-Fox had abandoned 'Scope for Panavision.

Non-anamorphic wide-screen has become standardized at 1.85 to 1, and this is the most popular aspect ratio in the United States today. The 1.66 to 1 format is widely used outside the U.S. Although producers can charge higher admission prices for films in the Panavision ratio of 2.35 to 1 in some foreign countries, it doesn't seem to make any difference at the boxoffice in the United States. There is the added factor that wider films are harder to adapt to television, which uses the Academy ratio of 1.33 to 1.

Today the cinematographer enjoys a greater range of materials and is permitted a greater amount of stylization than ever before, even though fast shooting schedules and the need to keep light bills low may sometimes cramp his style. On the international level, there is a greater standardization of products around the world, but there are still national schools of thought. The current trend in American films is toward greater desaturation of color through overexposure or underexposure as practiced by Conrad Hall in BUTCH CASSIDY AND THE SUNDANCE KID and HELL IN THE PACIFIC, or by means of pre-flashing the film, as Vilmos Zsigmond did in McCABE AND MRS. MILLER and DELIVERANCE. In France, however, the trend is often quite the opposite, for the brilliant hues and clarity of Nestor Almendros' work in LE GENOU DE CLAIRE and Edmond Richard's lensing of LA CHARME DISCRETE DE LA BOURGEOISIE rivals that of Leon Shamroy in the 40's Fox musicals.

Cinematography has made incredible strides in the seventy-five years since the cinema began. Cinematographers used to say that if the audience became consciously aware of their work, it detracted from the film. But change is the essence of growth, and now the cinematographer often plays a starring role. ■

Reproduced by permission from the program of FILMEX 1974

Continued from Page 636

using the same frequency. All these problems can, of course, be eliminated by using governor motors and sync cables, or, better yet, crystal sync.

The largest range of difference exists in voltages around the world. Even in a single country, voltage may vary from 100 to 440 volts. Basically, voltage can be broken down into two main categories: 230 volts (220-240v) and 120 volts (110-127). This generalization is valid because voltage variations within a given system can be greater than the difference in voltage between two countries. For example, in a country rated at 240 volts it would not be uncommon to find the voltage down to 220 under certain circumstances. Thus, defining a 240-volt system as different from a 220 system would be useless.

It is at this point that I suggest that all crews travelling abroad purchase a simple A.C. voltmeter or V.O.M. A decent meter should cost $15.00 to $20.00; spending more than $30.00 would be unnecessary. I use a voltmeter even when I'm in the States, as voltages in metropolitan areas can dip more than 10% during power "brown-outs." I wouldn't think of travelling in another country without one. The voltmeter will tell you the exact voltage at the plug you are using. This is important, because voltage may not only vary from town to town within a country, but even from plug to plug within one room.

The last variable is the type of plug. Almost all countries employing the 120-volt 60Hz system use a type "A" plug (see FIGURE 1). Just about every other country uses the round pin plug, type "B". Be aware that type "B" plugs come in different styles, exhibiting different diameter pins, various pin spacing and either two or three pins. In Britain and some other countries there is a move to the type "C" plug.

The list in FIGURE 2 breaks down most countries by voltage and frequency. This is only a basic guide. Always check for latest information from local authorities and use a voltmeter as the last word. The letter after the country denotes the styles of plug in common use. An asterisk indicates that the frequency may be unstable. This would only affect sound speed when using sync motors.

Once it is determined what the frequency and voltage are on a location, the next step is to adapt the equipment if a mismatch exists. This will be our next topic. ■

FILMEX 1974

Continued from Page 709

Donna Deitch, Filmmaker
John Whitney, Filmmaker

FAKE? (USA/France co-production)

FLESH FOR FRANKENSTEIN (USA/Italy/France co-production)
Paul Morrisey, Director
Monique Van Vooren, Actress

THE HOLY MOUNTAIN (USA/Mexico co-production)
Alexandro Jodorowsky, Director, Actor
Rafael Corkidi, Cinematographer

THE INNERVIEW
Richard Beymer, Filmmaker

"LONG SHORTS"
Donald McDonald, Filmmaker

MARGIE
Charles Clarke, Cinematographer

"MULTI-SCREEN/MULTI-IMAGE"
John Whitney, Jr., Filmmaker

NIGHT OF THE HUNTER
Stanley Cortez, Cinematographer

"PRESTON STURGES MOVIE MARATHON"
Bob Epstein, Film Historian

SHE
Raymond Rohauer

SING SING THANKSGIVING

"SPECIAL PHOTOGRAPHIC EFFECTS"
L.B. Abbott, Cinematographer
Howard Anderson, Jr., Cinematographer
Art Cruickshank, Cinematographer
James Danforth, Visual Effects Specialist
Linwood Dunn, Cinematographer
Farciot Edouart, Cinematographer
Wally Gentleman, Cinematographer
Barry O. Gordon, Cinematographer
Bill Hansard, Background Projection Specialist
Jack Kinney, Animation Specialist
Danny Lee, Mechanical Effects Specialist

"STUDENT FILMS"
Martin Brest, Filmmaker
Marshall Harvey, Filmmaker
Marvin Kupfer, Filmmaker
Claudia Kobey, Filmmaker
John Teton, Filmmaker
Kathy Rose, Filmmaker

SWEET SMELL OF SUCCESS
Alexander Mackendrick, Director

THE THREE MUSKETEERS (1974)
Raquel Welch, Actress

THE THREE MUSKETEERS (1921)
Mary MacLaren, Actress
Albert Sendrey, Conductor
Chauncey Haines, Organist

"A TRIBUTE TO ROSALIND RUSSELL"
Rosalind Russell, Actress
Roddy McDowall, Actor
Ron Haver, Film Curator

ZOO IN BUDAPEST
Rowland V. Lee, Director
Lee Garmes, Cinematographer

USSR
RUSLAN I LUDMILLA (RUSLAN AND LUDMILA)

VOYNA I MIR (WAR AND PEACE)
Alexander Zinchuk, Consul General
Consulate of the USSR, San Francisco

YUGOSLAVIA
PUTOVANJE (A JOURNEY)

JOZEF SULC (JOSEPH SCHULTZ)

THE SPRING OF LIFE

MULTI-NATIONAL
"THE ART OF ANIMATION"

PARTICIPANTS AT LARGE

Jack Albertson, Actor
Robert Altman, Director
Edgar Bergen, Entertainer
Red Buttons, Actor/Comedian
Charles Champlin, Film Critic
David Chierichetti, Film Historian
George Cukor, Director
John Deason, Actor
Stanley Donen, Director
Bob Dylan, Musician
Leonard Goldberg, Producer
Conrad Hall, Cinematographer
June Haver, Actress
Buck Henry, Screenwriter/Actor
Katharine Hepburn, Actress
Arthur Hiller, Director
Winton Hoch, Cinematographer
Arthur Knight, Film Critic
Paul Kohner, Agent
Laszlo Kovacs, Cinematographer
Hope Lange, Actress
Elsa Lanchester, Actress
Vilis Lapenieks, Cinematographer
Fred MacMurray, Actor
Yvette Mimieux, Actress
Jack Nicholson, Actor
Alan Pakula, Director
George Schaefer, Director
Howard Schwartz, Cinematographer
Stirling Silliphant, Screenwriter
Robert Stack, Actor
Donald Sutherland, Actor
Robert Swarthe, Filmmaker
John Russell Taylor, Film Critic
King Vidor, Director
Joan Weidman, Cinematographer
Richard Whitehall, Film Critic
Vilmos Zsigmond, Cinematographer

Continued overleaf

The size of the audience (more than 60,000) attending Filmex in 1974 was double that of the first Exposition. This year fifty programs, representing nineteen nations and consisting of 60 features and 77 short films, were presented. Seventeen features received their American premieres, and three, their world premieres. The eleven free morning programs, presented as a Tribute to the Art of Cinematography, played to capacity audiences.

Seventeen programs were sold out:

THE ABDICATION—Sneak Preview Presentation
AND NOW FOR SOMETHING COMPLETELY DIFFERENT
"THE ART OF ANIMATION"
DARK STAR
FAKE?
FLESH FOR FRANKENSTEIN—World Premiere in 3-D
FLESH FOR FRANKENSTEIN—Repeat Presentation
THE HOLY MOUNTAIN—American Premiere
SHE
"SPECIAL PHOTOGRAPHIC EFFECTS"
THAT'LL BE THE DAY
THE THREE MUSKETEERS (1974) Opening Night American Premiere
THE THREE MUSKETEERS (1974) Opening Night Repeat Presentation
THE THREE MUSKETEERS (1921)
TURKS FRUIT (TURKISH DELIGHT)—American Premiere
TURKS FRUIT (TURKISH DELIGHT)—Repeat Presentation

Other very popular programs were:

"THE EXPERIMENTAL UNDERGROUND"
L'INVITATION
JUSTE AVANT LA NUIT (JUST BEFORE NIGHTFALL)
UDRADENA VZDUCHOLOD (THE STOLEN AIRSHIP)
"STUDENT FILMS"
"A TRIBUTE TO ROSALIND RUSSELL"
WESELE (THE WEDDING)
LES VIOLONS DU BAL (THE VIOLINS AT THE BALL)

The International Cinematographers Conference, held April 6, 7, 8, and 9 with over twenty-five cinematographers participating, was attended by approximately 2,000 people. Ten seminars and two special programs, "SPECIAL PHOTOGRAPHIC EFFECTS" coordinated by Linwood Dunn, ASC, and a special sneak preview of THE ABDICATION, were presented. ■

"DEEP SOUTH, DEEP NORTH"

Continued from Page 695

done with it, Frank was a solid Eastmancolor convert.

Our camera was the dependable and well-known Eclair NPR which was just right for our needs—filming entirely on location, in unique situations, with quite a bit of hand-held work, and the need for frequent quick changeover. There were times, as when we filmed a spontaneous interview with six black men on the front porch of a home in Wilcox County, Alabama, when we had to be able to change the film magazine in 15 seconds or less or risk losing the mood of the scene.

We took several lenses with us, but the one we used almost exclusively was the 9.5mm-95mm Angenieux zoom lens. It gave us the flexibility we needed, the ability to set up or change focal length on a moment's notice. So we left it on the camera the whole time, except when we were packed and traveling.

To provide visual contrast between the northern and southern winter landscapes, we shot a lot of outdoor scenes in daylight. For the interiors, we used the BBC style of natural-appearing lighting, with strong keys, and depended on the wide latitude of Eastmancolor to fill in shadow areas. The trick here is to have the scene not look "lit"—to *under*-light rather than *over*-light. We used Colortran lights, with extensive use of the Sun-Gun. We also had a Mini-Pro kit with three 650-watt focusable lights, which was great for cramped quarters, and a big Colortran location kit with two 1K lights and three broads which we used for the bigger lighting problems.

For the sound, which was my job, we used a Nagra 4.2 recorder and Scotch 206 1.5-mil tape, which gave us fine quality. My only problem with the mag tape was that each 5-inch reel held just a little more than enough for one film magazine. We were shooting sync sound almost continuously, so I had to change tape reels every time Frank changed film magazines, and of course it takes longer to change the tape than it does to switch magazines. We solved the problem to some extent by pre-spooling several reels, supply and takeup reels together, before each day's shooting. Next time, I plan to use 1-mil tape which will give us a 2-to-1 ratio.

We took along the standard complement of microphones—a shotgun mike and a couple of lavaliers. But there are special problems in shooting this kind of film—situations where the standard cabled microphones have serious limitations. For instance, there were sequences

where the subject needed to move around a lot, and others where the subject and camera were a considerable distance apart. To solve these problems, we brought along a pair of Vega Model 55/57 Professional II cordless microphone systems.

This particular Vega system includes a tiny condenser microphone that is easy to hide under a shirt collar, coat lapel, or dress, and a miniature transmitter that can be slipped into a pocket or easily taped to the body, out of sight. The radio receiver for the system is also miniaturized, weighs less than three pounds and runs on penlight batteries. The transmitter range is about a quarter mile, so we had no problem even with the longest shots. When we used the Vega outdoors, I set up the Nagra and the Vega receiver in the station wagon and never had to move, regardless of how much moving around the camera or the subject were doing. The extra mobility and flexibility you gain by eliminating the need for microphone cables is really amazing.

A good example of this was our opening scene for "DEEP SOUTH, DEEP NORTH", at a Baptist church in Montgomery, Alabama. Here a black preacher is talking to his congregation about the 20th anniversary of the civil rights legislation. We cut to an exterior of the church, and Jeremy James walks out of the building toward the camera, talking about where we are and why we're there. This kind of shot would have been almost impossible with any kind of microphone other than the Vega. A shotgun mike can be used sometimes, but there is always the problem of camera noise pickup, even if the camera is blimped.

We used the Vega for all of Jeremy's "piece to camera" sequences, and in several other scenes. One time when it saved us a great deal of trouble in filming the recording was in the sequences with Ernest Green in Little Rock. Mr. Green, now a successful and very articulate New York attorney, was one of nine black students who were escorted by Federal troops into Little Rock High School in 1957 when the school was integrated under government orders. He agreed to fly down from New York for one day and visit the school for an on-camera recollection of the incident of 17 years ago when he was a high school senior. It was a pretty substantial piece, involving lots of movement, so we simply outfitted him with the Vega mike and transmitter, which he wore the whole time he was with us. I stayed out of camera range behind a wall, with the Nagra and the Vega receiver. This points up the fact that the

cordless mike not only gives you more flexibility and mobility, but saves a lot of time and trouble in setting up the sound equipment when you're filming a number of scenes with the same individual.

One trick I picked up related to a problem I had in recording Mr. Green. A stiff wind was blowing, and to suppress the wind noise I tore up an old Sennheiser windscreen, wrapped it around the Vega condenser mike, and taped it to the inside of Mr. Green's clothing. This silenced the wind noise without affecting his voice quality.

All in all, the Vega made a very rough job considerably easier, and, I think, made a fine film better.

One of the few production problems we had was purely mechanical—that of "bookkeeping." Frank and I are used to editing, cutting, and transferring sound on our own films, but this time we were making a film that was to be put together in London, by someone we'd never met and who wouldn't be able to step next door and ask questions. The answer was to keep a very careful log of each and every shot, and an accurate cross-reference between tape and film. This was a pretty tedious chore and another reason why I want to use 1-mil tape next time.

A filmmaker setting out to do a social documentary might find, as we did, that one of the biggest problems was finding people, both black and white, who were willing and able to discuss the civil rights movement and race relations on camera, openly and frankly. In their location scouting before we came along with the equipment, David and Tim had no trouble talking to people and drawing them out on the subject. But we found that many of these same people became tongue-tied when facing a camera and microphone. Others did not want to go on record with their opinions. However, the fact that we represented an English rather than a U.S. network helped. People seemed to feel that an organization from outside the country would be more objective about racial matters. But, on the average, only about one out of 15 people we interviewed were willing to appear in the film.

We were fortunate, in the short time available, to be able to film some really fine sequences. I have already mentioned attorney Ernest Green and Little Rock High School, where we also interviewed black and white students on the situation today. In Montgomery, we did an on-camera interview with Mrs. Rosa Parks, sitting in the same courtroom where she was fined $10 back in 1955 for violating the city ordinance that

forced blacks to ride in the back of the bus. It was her well-publicized case that began the year-long boycott of the buses by blacks in Montgomery. The leader of the boycott (which catapulted him to national fame was a young pastor from the Dexter Avenue Baptist Church—Dr. Martin Luther King.

Also in Montgomery, we interviewed Governor George Wallace briefly. He discussed the changes that have taken place in his position—from standing in the schoolhouse door to bar the entrance of a black student, to crowning a black homecoming queen.

From Montgomery, we went to Topeka, Kansas to interview Mrs. Linda Smith. She talked to us about the time when, as a nine-year-old in the deep South she was picked by the NAACP along with several other children in a series of school segregation cases that resulted in her name becoming a landmark in American history: the famous Supreme Court case of 1954, *Brown vs. Board of Education.*

This scene also gave us a close tie-in for our sequences in the North, shot in Detroit, where a new action is being brought to the Supreme Court by the NAACP. This case, known as *Bradley vs. Milliken,* led Tim and David to choose Detroit for the northern segment of our story.

We interviewed black and white families in Detroit about their fears and aspirations. The film reveals that the North today may be facing greater problems than the South ever did. It shows that here, as in other major cities, a basic problem is urban decay and white flight to the suburbs, leaving a black inner city ghetto. A related problem is "upward mobility" in the new black middle class. Many black families are moving into white suburban areas, which threatens to create as much if not more tension than the civil rights movement.

We filmed a meeting in which a Congressman addressed a group of suburbanites who are opposing a court order to enforce school desegregation by means of busing. Recalling how Northerners flocked to the South in the early days to help blacks in the civil rights movement, he told the group that "the South is watching us squirm."

In filming the 58-minute documentary "DEEP SOUTH, DEEP NORTH" our goal was not simply to record events, but to reveal a process—the American political process. On film are people, places, and situations which are indices of this process. Beneath the research, reporting, and film techniques is a high regard for America's ability for self-analysis and criticism. ■

THE MOVING CAMERA

Continued from Page 702

the sled around so that the operator—and I had a very good one—could follow the skaters. The sled had to be twisted around in a complete circle and, in order to facilitate that, we ran the motor cables straight up to the top of the sled. It might be interesting to note that, because of the slow speed of the old Technicolor (which involved three strips of black and white film running through the camera simultaneously), the light level was 1,200 foot-candles. I can't help making a comparison when I see all of the remarkable photography that is done today with modern color emulsions, using eight foot-candles and shooting with available light and fluorescent light.

QUESTION: What kind of lighting units did you use to light up that huge set with that much light?

CLARKE: Except for the incandescent lights directly over the rink (which were just there as set decoration), we used nothing but white light—arc light. Every bit of it was 6000° Kelvin. In the skating rink the skaters were always going around in one direction, so I tried to keep the key lights coming from one direction. The electricians just went around the rink and turned all of the lamps toward the faces coming one way. There were 1,200 foot-candles of light all the way around. The sequence was shot at F/2.3.

QUESTION: Besides the practical lights over the rink, there were signs in the background made up of light bulbs. Did these create or solve problems?

CLARKE: We hung all those lights in there on purpose to give the skaters a reference point for movement as they passed. For example, when you show an airplane flying against a bald blue sky, it never seems to be going anywhere, but when it passes a cloud you have a reference point that shows it's moving. These lights were deliberately hung low enough so that they would be in the picture.

QUESTION: Did you have trouble with the actors squinting because you were using so much light?

CLARKE: No. Because of the 360° shots, all of the bright lights had to be mounted high. We did have trouble when we went outside to shoot and had to use hard reflectors that would make the actors squint.

QUESTION: Why is it that the lighting in the old Technicolor pictures seems generally to be rather flat?

CLARKE: As I've said, there were three black and white negatives running through the camera at the same time. The blue record was printed in yellow dye. The red record was printed in green dye and the green record was printed in magenta dye. In the making of the prints a peculiar thing happened. We couldn't half-light. We had to use well-filled light or else go to the opposite extreme. If we had half-filled shadows they would go lobster red, very red—so we had to avoid that in three-strip Technicolor and that's why things had to be more or less flatly lighted. Now, of course, with the modern color emulsions that you have available, you can do anything you want to do.

QUESTION: Did the grips pushing the sled wear ice skates?

CLARKE: No, they wore rubber-soled shoes. Besides the grips, nobody was around the camera except the operator and the director. Everybody else was cleared out.

QUESTION: Did you use a blimp on that sequence?

CLARKE: Not on the scenes that simply involved skating. There were shots where we went through the skaters to pick up dialogue from the people sitting on the sidelines. We used a blimp for those scenes, of course, but the skating scenes were photographed with a wild camera. The Technicolor three-strip camera, when blimped, weighed 400 pounds and it took several people to carry it. ■

BERKEY COLORTRAN ADDS NEW COLORS TO GELATRAN LINE

Berkey Colortran has added nine new colors to its Gelatran® color media line. The colors are: Flesh Pink, French Rose, Magenta, Fire, Rosy Amber, Congo Blue, Dark Blue, Alice Blue and Aqua Blue.

The addition of these colors brings the Gelatran line to a total of 31. Gelatran is ideal for motion picture, television, theatrical and still photographic applications and is available in sheets and rolls.

A new booklet of the 31 colors is now available from Gelatran Dealers, or directly from Berkey Colortran, Inc., 1015 Chestnut Street, Burbank, California 91502.

16mm EMULSION TESTS

Continued from Page 717

flashed EFB. But the color negative rendered the color more accurately, and clearly handled the contrast better. It was grainier than EFB, however, in the sense that you could see the grain.

So let's discuss grain, for a moment. Earlier, we said that grain is the first thing we learn to see, and, as a result, most of us tend to associate grain with an indistinct image.

Most of us are wrong. Grain is one thing, and loss of detail, or loss of resolution is another. Throughout our tests, color negative 7254 was consistently the most grainy stock used. The grain was visible as a shifting mosaic of silver halide dots on the screen. But at the same time, color negative 7254 provided either the best, or second best, resolution in each scene, alternating with ECO, depending on the lighting contrast condition. The reason behind this apparent contradiction is that contrast build-up, as the film goes through the printing generations, degrades the image far more than grain. Anthony Scott King has shown through experiments, that although color negative *is* grainier than EFB, its resolution is actually greater.[3]

As for the apparent graininess of color negative, we find, and others have reported,[4] that the audience quickly becomes accustomed to the grain, and doesn't notice it.

ECO, EFB and color negative all have their place as usable 16mm stocks. And the final selection of a stock for any production will depend on a number of factors.

Lighting control is extremely important. So is the final projection mode, since there's no need to worry about contrast buildup if you're going to project your original. Budget can be a consideration, since negative has to be workprinted and reversal doesn't. Local practices and work habits are a consideration—if you can't work clean, don't work with negative. And the availability of processing, the need for same day

rushes, and the possibility of using optical effects will affect the decision.

But the major factor will probably be the primary characteristic of the film stock required by the film-maker—fine grain, fast film speed, or natural color.

Our conclusion is that, at the present time, ECO must be used when fine grain is the overriding consideration.

But ECO is no good when fast film speed is important. And that means choosing between EFB and color negative 7254.

As we've seen, good quality prints can be made from EFB, even from an internegative, but contrast is going to build up, color will shift, and it has poorer resolution. Given the choice between the two, we prefer color negative.

The color reproduction is superb—especially for skin tones.

It handles contrast beautifully.

Production costs are no greater than for EFB.

And careful handling of pre-print materials, and manufacture of a liquid gate optical C.R.I. can control the dirt problem.

In all of our comprehensive testing of 16mm color film-stocks, the only real drawback attributed to color negative 7254 was its apparent graininess, but now that the new fine-grain Eastman Color Negative II, type 7247, is a reality, that drawback no longer exists. We haven't handled it ourselves yet, but we've seen tests and they're very good. The new negative film *does* have considerably finer grain and higher resolution, as promised.

And as soon as we've had a chance to try it ourselves, we'll be ready to help create a new mythology. ■

BUY — SELL — SWAP HERE

STUDIO PRODUCTION EQUIP.

BOLEX EBM new $1,200. COSMOS DEMETRIOU, 2848 28th Northwest, Washington, D.C. 20008 (202) 462-4774/5597.

ECLAIR ACL Super 16 or regular, 2 mags. battery, charger, case, like new. P. SCHULTZ, 941 N. LaCienega Blvd., Los Angeles, CA (213) 876-8610.

ARRI 16S, just serviced, v/s motor, 17.5, 25, 50 Kinetals, 5.9 Angenieux, 385 Century in Arri mounts, matte box, case, battery, powerbelt, tripod, Miller fluidhead, hi-hat, collapsible dolly, $3150. 16-35 hot splicer, $325. B&H 385 projector, $350. Editing tables, rewinds, reels, misc. (213) 793-6878.

ARRI 16-S V/S motor, 17-85 zoom lens, battery pack, charger, carrying case. $2200. 930 San Pascaal, Santa Barbara, CA 93101 (805) 966-0705.

35 Mitchell NC. Ball bearing model, ultra precision registration plus 144 fps. 120v motor, magazines, no lens, perfect. $1200. CALLIOU, 2040A Garden Ln., Costa Mesa, CA (714) 548-7234 or 546-6677.

FILM-PROCESSOR 16-35mm surplus Houston-Fearless A-11, $750. FILMWORKS (212) 243-5569.

ECLAIR NPR in mint condition with three mags, Perfectone Compact Crystal motor, CIBLO motor with Nagra bloop, 110 volt heavy duty motor, battery, cables, in Eclair cases. Camera has Arri & C mounts. Many other accessories included, $8500. Akley Gyro Tripod in case, like new, $265. Photo Sonics 1-P high speed camera with many accessories including rigging cage, weather barney, remote controls, etc, $4000. 12-120 Angenieux zoom in Arri mount, $800. 9.5-95 Angenieux zoom in Arri mount, $1400. 12-120 Angenieux zoom C mount w/7½ inch viewfinder, $1400. 9.5-95 Angenieux zoom C mount w/7½ inch viewfinder $1700. 5.7mm Kinoptic in Arri mount, $650. RON EVESLAGE, (415) 347-7171.

ARRIFLEX S/B with motor, like new. New Arri S case $145. Angenieux 12-120 Arri mount $500. Sync motor for Arri S $350. Excellent K-100, $325. Arri M magazine. C mount lenses. Box 1758, AMERICAN CINEMATOGRAPHER, (213) 662-4507.

SYNC BEEP 1/4 inch tape prerecorded with high-level 1000hz. tone, backed with special pressure-sensitive adhesive for quickly affixing visual and audible sync indication on any magnetic film or tape. Industry-wide acceptance. Send $2.50 cash, check or money order for prepaid packet containing 20 strips totaling 100 35mm frames. D. P. Upton Co., P.O. Box 5052, Tucson, Arizona 85703.

ANIMATION—low cost professional compound, 12 field, sliding peg bars, rack and pinion movements, platen locks in up or down position, 3 scales. CINEGRAPHIC, 308 Colfax Ave., Clifton, N.J. 07013.

ARRIFLEX M/S fiberglas sound blimp $1274.25. B&H 16-70 DR, 2 lenses $275. Audiscan projector Mod. A $145. Fastax exposure meter model 755, Fastax goose control WF-301, Fastax WFU 16mm, 50mm-80mm-35mm lenses $2500. JAMES MOTION PICTURES, New Haven, Conn., (203) 624-7196.

BOLEX Pro-12-120 Angenieux, crystal motor, studio battery, lightweight Nicad battery, 2 magazines, monopod, case, sync cable, 2 power cables, new electronics, latest Bolex modifications and sound proofing. $6200. (915) 949-6588. LARRY TAYLOR, Box 3842, San Angelo, Tex.

STUDIO PRODUCTION EQUIP.

CUSTOM blimped, crystal Arri-2/C, 35-140 zoom $9,500. Eclair Aquaflex complete 35mm underwater shooting outfit $3,900. Eclair CM-3 complete 16/35mm outfit $2,400. Acme 35mm animation camera package $1,900. Arri-S, 12-120 lens, sync, all access. $3,400. Super-1200, optical sound $1,800. Pro-600, 12-120 mag-sound $2,500. Conversion, 12-120, mag-sound $2,900. Beaulieu, 12-120, Mag, access. $1,500. Bolex-SBM, POE/16-100, MST, 400' mag, mint $1,900. Bolex Rex-5, 3-lenses $900. Kinetal 12.5mm/Arri $325. Schneider 11.5mm/Arri $300. Angenieux 12-120/Arri $700. Angenieux 12-120/Rx $825. Pan Cinor 17-85/C $375. Mini-10 4-light kit $200. Magnasync triple dubber, recorder, selsyns $5,200. Magnasync double 16mm dubbers $2,200. Magnasync triple 35mm dubbers $3,200. Ampex-351 ¼" rack recorder $1,200. Magnecordette ¼" stereo/mono mastering recorder $500. Siemens interlock sync projector $1,900. Nikon-F, photomic finder, 3-Nikkor lenses, cordless motor drive $950. Ask for Free, complete list. COMQUIP, INC., 366 S. Maple Ave., Glen Rock, N.J. 07452. (201) 444-3800.

One Moviola upright. One picture head, two sound heads, Mint condition. $2995. Available approximately August 1. JULIAN COLE PRODUCTIONS, 3604 Woodmont Blvd., Nashville, Tn. 37215.

ARRI 35 BL, 5 prime lenses, matte box, lens, blimp, scales, 2-400' mags, cases, like new. $27,500 or best offer. Box 1774, AMERICAN CINEMATOGRAPHER.

PRICED FOR IMMEDIATE SALE:—Mint condition Arriflex 16BL camera with Angenieux 12-120 lens, matte box, sync motor, wild motor, two 400' magazines, magazine barney, battery belt, aluminum carry-case. SMITH COLLEGE, Wright Hall 7, Northampton, Mass. 01060. Attn: Tom O'Connell (413) 584-2700, Ext. 597.

BEAULIEU R16B 12/120 auto, 500 ma battery w/charger, Halliburton case, 5 years old, privately owned, excellent condition $1800. REX ROACH, JR. (205) 794-2920.

RCA 35mm Pr-31 Optical film recorder complete w/all amplifiers and accessories in excellent working order $7,750. 4 Position mixing and transfer console w/all equalizers, filters, compressors, amplifiers, meters, etc. $3,700. WARREN SOUND STUDIOS, 35 N.E. 62 St., Miami, Fla. (305) 754-9539.

CRYSTAL sync generator for Nagra or any sync recorder $100. Install it yourself and save. AUDIOFONICS, INC., 1101 Downtown Blvd., Raleigh, N/C. 27603.

FANTASTIC SLOW MOTION: IPD Photosonics action master 12-120 zoom, Battery and case. Good condition. Best Offer. Box 1774 AMERICAN CINEMATOGRAPHER.

ECLAIR ACL: very low mileage; unused since routine maintenance by Eclair 2 months ago; 2 mags (200'), battery, cable, charger, handle, case, etc. $5800. (415) 848-4102 between 8 AM and noon or after 6 PM.

15-150 Angenieux zoom set up for Super 16 $750. DARRIN (213) 459-4048, (213) 454-1594.

ARRIFLEX 35mm cameras, reflexed Eyemo, 35/65mm synchronizers, magazines, Mitchell and Bell & Howell optical and bi-pack printers. Huge inventory price list on request. Foreign inquiries invited. MJW THEATRICAL ENTERPRISES, 6520-B Selma Ave., Hollywood, CA 90028 (213) 465-7648.

FILM-TIME CALCULATOR gives 35mm and 16mm footage at a glance. An invaluable tool. $1.00 each or 3 for $2.00. ADD SOUND, 339 E. 48th St., New York, NY 10017.

STUDIO PRODUCTION EQUIP.

FOR SALE 16mm Mod. H. Berndt Maurer camera with 2-400 mag. 2—motor excellent for animation. Ampex 300S ¼" tape recorder with 3 channel mixer, JERRY BAGDASARIAN, 1277 Quaker St., Northbridge, Mass. 01534.

ARRI 16S outfit, four Schneiders, two magazines, v.s. motor, batteries, cases—asking $3200. Frezzi-cordless AC outfit, 12-120 with V-30 finder, four magazines, MA-11, etc., asking $3500. 9.5-95mm Angenieux, CA-1 mount, $1350. Must sell! S.T. SMITH, 822 Second Avenue, Williamsport, PA 17701.

COMPLETE 16mm production equipment for sale: Lighting and Cameras: Arriflex, B&H, Bolex, Colortran. Sound Equipment: Nagra w/resolving, Magnasync with interlock B&H projector, Ampex 300 & 350, AKG. Editing: Moviola. Laboratory: B&H and Color processors, B&H printer. For complete list and prices contact, R. W. SLAUGHTER, 2622 Lebanon Ave., El Paso, Tex. 79930, (915) 565-8652.

BELL & HOWELL, model 240 16mm movie camera with C mount and Angenieux zoom lens with viewfinder. Like new. Best offer. (415) 933-0472.

BOLEX EBM, 12-120 Angenieux, accessories $3100. Sync Tandberg, mikes, accessories $950 (206) EA5-5161.

35mm Mitchell plus extras. 16mm (B&H) J printer $1500. (609) 799-1382, N.J.

BELL & HOWELL model "J" 16mm printer (recently rebuilt) Fansteel Transformer—both for $2800. F.O.B., JAMES GRIMES, 2605 James Street, Baltimore, MD 21230.

FILMO-EYEMO-OWNERS
TIE DOWN your frames per second speed indicator dial, with special, knurled screw. Simple to use. Twist—the dial is locked securely, untwist and you can change speeds easily. Minutes to install in place of normal screw. Be secure in your mind that you are shooting at the right frames per second. SAVE THIS AD, it won't be repeated. Order this precision made, brass screw, with large head for easy twisting for $2.50. Discounts to dealers. SCHOLASTIC M.P. SERVICE, 10 Overlook Ave., Little Fall, New Jersey 07424.

NEWSREEL CAMERAMEN: Auricon conversion, 12-120 Angenieux, magnetic sound, accessories complete $2,995. Pro-600 with 2 mags. opt. amplifier, $1700. Cine Voice, 3 lenses, opt. amplifier $1300. RAUSCH (415) 366-3412.

OXBERRY 16mm ANIMATION STAND, model 5332-00, "Filmmaker", complete with many accessories, such as extra 18-field platen, rotation unit, rollaway assembly, rotoscope, 400' magazine and take-up, floating pegs, predetermined counter, etc. Like new, available immediately, $12,600. TYO PRODUCTIONS, INC. 715 Crawford Ave., Syracuse, NY 13224.

EASTMAN COLOR NEGATIVE-POSITIVE PROCESSOR accommodates 16 or 35mm film with silver track, applicator with capability of running over 200' a minute. Has latest style drive system, using tendency drive, film is always below chemistry level, using ticanum bleach tank. Balance of machine is all heavy gauge stainless steel construction. It has motorized unit for lifting racks out of both the light & dark section of processor. The craftsmanship & skill that went into making this processor are the finest possible. It's in excellent condition $65,000. INDUSTRIAL PHOTOGRAPHIC EQUIPMENT CO., 1032 N. Orange Drive, Hollywood, CA (213) 462-1297.

RATES: Ads set in lightface type 40¢ per word. Minimum ad, $4.00. Text set in lightface capital letters (except 1st word and advertiser's name) 50¢ per word. Modified display format (text set in **boldface** type, capitals or upper-and-lower-case) $4.00 per line. Send copy with remittance to cover payment to Editorial Office, American Cinematographer, P.O. Box 2230, Hollywood 28, Calif. Forms close 1st of month preceding date of issue.

SERVICES AVAILABLE

NEWMEN: MIKE-MATCHER adapts Sennheiser 405/805/415/815 mikes to MA-11 amp, eliminates batteries, pads, roll-off. Developed by IATSE soundman. Now used by major networks. $45, money-back guarantee. Literature, LOU YATES 25 Fernwood, San Anselmo, CA 94960.

LONDON BASED CAMERAMAN (Union) with Eclair, Nagra, lights, 16mm. Cutting room. Production experience. Travel anywhere, Crew supplied. Contact MOBIUS FILMS, 331 Grays Inn Rd., London WC1. Tel: 01-278-5803.

CINEMADROME—A small but ambitious team of skilled craftsmen willing to undertake any project. 333 Kearny #407, San Francisco, CA 94108 (415) 788-5264.

TAMALPAIS FILMS offers 16mm low-budget optical printing and other film service. Write for brochure. P.O. Box 524. Forest Knolls, CA 94933. (415) 488-4656.

FILMMAKER with 16mm sync system. Equipment plus new Van at unrefuseable rate. VIDAL, 12 East 32nd St., New York, 10016, or call (212) 532-8598.

ARGENTINA & SOUTH AMERICA. Rental 35/16mm. Arriflex 35-2CB and 16-BL or SB, CP-16, Auricon, Nagra 4, lights, lenses, etc. Production, Camera crews, professional advice. HERMES MUNOZ & ASSOC., 643 Montevideo-Piso 3°—Buenos Aires, Argentina —Phone 45-7445.

35MM Screening room, interlock facilities, 4 track stereo sound, sound resolving to 35mm magnetic film, 4 track stereo mixes, versatile 35mm camera crew and equipment available for hire or contract: Contact: ROBERT M. DOMINIC, United Independent Productions, 1219 Scenic Way, Hayward, CA 94541, (415) 537-1887.

Expedition to Africa will tour game preserves in Kenya and climb Mount Kilimanjaro, shooting 16mm color and stills. If in need of footage from the region, write RICHARD WALLACE, 4676 Kingsdown, Atlanta, GA 30338.

GORDON YODER, INC. gives 48 hours service on Filmo filter slots. Also quick service on Auricon, Filmo, Canon Scoopic, and Angenieux zoom lens repairs. 2840 Reward Lane, Dallas, Tex. (214) 357-3045.

WANTED

WANTED inexpensive videotape recorder and camera for home use. Must be in working condition. P.O. Box 2345, Sarasota, Fla. 33578.

CAMERA BODIES: Single lens K-100, 70DR, Cine Special II, Rex 1 or 2, B&H or Eastman. Silent projectors, Angenieux 12-120 "C" with finder, 17-85 with finder, 3½ & 4" diameter projection lens. Buyer for 24,000' Ektachrome 7386 Nov. 72 frozen, 1600' mag. stripe 7389 July 73. THOMCO, 2846 NW 59th, Okla. City, Okla. 73112. (405) 848-4868.

SONOREX 16/16 interlock projector. PHIL SWIGGUM, 16309 Keeler Dr., Granada Hills, CA 91344 (213) 360-7413.

WANTED: Used OMAC 16/35mm color processor. KEN DAVEY PRODUCTIONS LTD., 695 Sargent Ave., Winnipeg, Canada (204) 774-1629.

NAGRA recorders and accessories, in any condition. We pay top prices for used Nagra III or Nagra IV. AUDIO SERVICES CO., 565 Fifth Ave., NYC (212) 972-0825.

WE FIND anything recorded between 1885 and 1945. Our price includes re-mastering. THE SOURCE, sound library and research service, Box 202, Evanston, Ill. 60204.

WANTED Nagra SNS with accessories and Nagra III. Only little used, absolutely mint condition considered. J. H. WICKENS, 411 E. 10th St., NY 10009, (212) OR3-1777, evenings and weekends or (212) RA6-6832 days.

RENTAL

MOVIOLA M-77 6 plate, M-85 4 plate, & M-84 2 plate Horizontal Editing Machines are available for immediate rental. Daily, Weekly or Monthly. Please inquire about our fantastic rental towards purchase plans. Financing plans are available. Less expensive than renting, and you own the equipment in one or two years. For detailed information or to place an order call or write: Stuart Mann or Ted Powers. LAUMIC CO., INC. 35 West 45th St., New York, NY 10036 (212) 586-7666.

KEM rentals in Hollywood. HORIZONTAL EDITING STUDIOS (213) 461-4643.

MISCELLANEOUS

Buy-Sell-Trade used photographic equipment through Nationwide monthly shopper. Free sample. SHUTTERBUG ADS, Box 730-M, Titusville, FL. 32780.

EARLY hand colored 35mm 1000ft silent newsreels also 28mm shorts for sale or exchange for 16mm color sound features. A. M. JACKSON, P.O. Box 8055, Riccarton, New Zealand.

STOLEN Eclair ACL & Nagra 4.2. ACL SEr. No. C10261; 200 ft mag. Ser. No. M10317 & M10364; Ang. 12-120 Ser. No. 1309321; Nagra Ser. No. L 92143. Any information please call (301) 823-7500 ext. 261 7am-5pm.

SITUATIONS AVAILABLE

VICTOR DUNCAN, INC. has opening for camera repair technician. Must have practical background in mechanics; electronics; optics. Call Robert Burrell. (313) 371-4920.

CINEMATOGRAPHER/EDITOR WANTED: Position available with instructional media team producing educational and documentary TV programs. Must be able to submit sample films demonstrating high level of competence in all phases of 16mm production, including lighting, shooting, and editing picture and sound. Starting salary approximately $8-9,000/yr., depending on experience and ability. Send resume to Associate Director, Educational Communications, University of Wisconsin-Green Bay, Green Bay, Wisconsin 54302. UWGB is an equal opportunity employer.

CINEMATOGRAPHERS-Overseas: Please advise INTER-COM of availability, resumes or letter & equipment for foreign assignments. INTER-COM, 244 Thorn St., Sewickley, Pa. 15143.

ANIMATION CAMERAMAN wanted. Experience desirable. Top professional and technical skill needed for a top studio. Experimental graphics and stop motion. Unique staff opportunity to join one of the best in the country. GOLDSHOLL ASSOCIATES, INC. Call Tom Freese or Morton Goldsholl. (312) 446-8300.

All available with/without advanced automatic iris powered from camera.

MADE IN U.S.A.

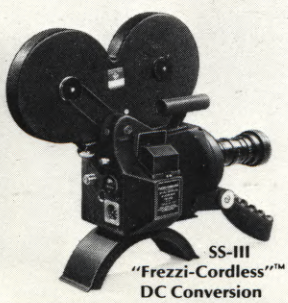
This Patent backs up the quality of innovation and craftsmanship you get from

General Research Laboratories
DIVISION OF
Frezzolini Electronics Inc.
7 Valley St., Hawthorne, N. J. 07506
PHONE: (201) 427-1160

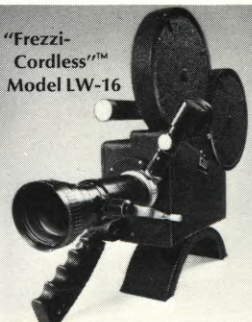
Ask the man who owns one!

Featuring BACH AURICON movements. World-famous for reliability and serviceability.


"Frezzi-Cordless"™ Model MC-571 AC


SS-III "Frezzi-Cordless"™ DC Conversion


"Frezzi-Cordless"™ Model MC-571 DC


"Frezzi-Cordless"™ Model LW-16

BYRON...AMERICA'S department store of tape and film processing services

MOTION PICTURE LABORATORY SERVICES

- ☐ 16mm—35mm—SUPER 8mm—Processing & Printing
- ☐ Eastman 7247—5247 Color Negative Processing
- ☐ Color Positive Prints 16mm & 35mm
- ☐ Kodachrome Prints
- ☐ Ektachrome Prints
- ☐ Ektachrome 7252 Processing
- ☐ Ektachrome 7241—7242 Processing
- ☐ Post Flashing For Lower Contrast
- ☐ Reversal Intermediate Negatives 35mm & 16mm—CRI
- ☐ Color-Additive Electronic Printers
- ☐ 16mm to 35mm Blow-up Printing
- ☐ 35mm to 16mm Reduction Printing
- ☐ Optical Printing 16mm to 16mm, 35mm to 35mm
- ☐ Liquid-Gate Printing
- ☐ Hazeltine Electronic Color Timing
- ☐ Black & White Negative-Positive Processing & Printing
- ☐ Black & White Reversal Processing & Printing
- ☐ A & B Effects Printing
- ☐ Reduction SUPER 8mm Magnetic & Silent Prints
- ☐ Television Film Spots
- ☐ 35mm Slides & Film Strips
- ☐ Complete Modern Sound Department—2 Studios, Mixing Theater
- ☐ 16mm & 35mm Optical Sound Tracks
- ☐ Film Editing & Conforming
- ☐ Music & Sound Effects Library
- ☐ Screening Rooms
- ☐ Edgenumbering 16 & 40 Frames
- ☐ Magnetic Sound Striping
- ☐ Ultra-Sonic Film Cleaning
- ☐ Peerless Film Treatment

VIDEO TAPE SERVICES

- ☐ Rental Studio, Norelco PC-72B Cameras, Lights, Sets
- ☐ Special Effects—Triple Re-entry Switcher
- ☐ Slo-Mo, Forward or Reverse Freeze Frame
- ☐ 16mm and 35mm Film Chain
- ☐ Electronic Computer Video Editing
- ☐ Video Tape to Film Transfers Color and Black and White
- ☐ Film to Video Tape Transfers 2″, 1″, ½″
- ☐ Video Tape Dubbing 2″, 1″, ½″
- ☐ Sony ¾″ Video Cassette Duplicates
- ☐ High Speed Video Tape Duplicates
- ☐ Clients Viewing Room
- ☐ 2″ Tape Evaluation
- ☐ Audio Recording and Mixing

WRITE FOR OUR NEW PRICE LISTS ON LABORATORY SERVICES AND VIDEO TAPE SERVICES

byron COLOR-CORRECT®

65 K Street, Northeast, Washington, D.C. 20002 202/783-2700

World's Most Sophisticated Video Tape and Film Laboratories