

American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

JUNE 1979 / \$1.50



**60th ANNIVERSARY
AMERICAN SOCIETY
OF CINEMATOGRAPHERS**



**EVERYTHING IN
VIDEO EQUIPMENT RENTALS
FROM THE PEOPLE
WHO BRING YOU
EVERYTHING IN
FILM EQUIPMENT RENTALS.**

The world's finest maintained Motion Picture & Video Tape Equipment.



camera service center, inc.

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

CINE 60 POWERBELTS ThoroughBred!

Thoroughbreds are winners. Thoroughbreds are Cine 60 Powerbelts and Powerpaks. Join the winners and take advantage of our proven 18 year track record. Win with longer life, dependable power — comfortably priced. No short-lived "cheapies" or high cost disappointments. We'll power you across the finish line with the only foolproof, standard or fast charge system . . . a system that keeps on winning. So tell us your requirements. We'll give you the right choice for thoroughbred power. See your dealer or write today.

CINE 60
INCORPORATED
630 Ninth Ave. 6430 Sunset Blvd.
New York, N.Y. 10036 Hollywood, C.A. 90028
(212) 586-8782 (213) 461-3046

American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

The American Society of Cinematographers is not a labor union or 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.

JUNE 1979

VOL. 60, NO. 6

Herb A. Lightman
editor

Three Tyler
assistant editor

Barry Day
production control

Patty Armacost
circulation

Barbara Prevedel
accounting

Gabrielle de Ganges
layout assembly

Contributing Editors

David Samuelson
Sidney P. Solow
Anton Wilson

Editorial Advisory Committee

Milton Krasner, Chairman
Lester Shorr, Vice-Chairman
Lloyd Ahern
Howard Anderson, Jr.
Charles G. Clarke
Stanley Cortez
George Folsey
William A. Fraker
Ernest Laszlo
Sam Leavitt
William Margulies
Richard Moore
Owen Roizman

Editorial—Advertising— Business Offices

1782 North Orange Drive
Hollywood, Calif. 90028
(213) 876-5080

● FEATURE ARTICLES

562 Photographing "DAYS OF HEAVEN"

Nestor Almendros discusses techniques he utilized as Director of Photography on feature which earned him this year's Oscar for "Best Achievement in Cinematography"

566 Dracula Bites Again

Director John Badham (SATURDAY NIGHT FEVER) talks about his rather different approach to the filming in this latest of a rash of features about the legendary Vampire

572 Of Vampires, Castles and Mechanical Bats

Production Designer Peter Murton and Special Effects Supervisor Roy Arbogast talk about unusual challenges and innovative techniques used in their work on DRACULA

576 Six Decades of "Loyalty, Progress, Artistry"

A tribute to the A.S.C. on its 60th Anniversary, including a detailed history of the Society, its principles, aims and accomplishments through the years

580 The A.S.C. Clubhouse and Its Colorful History

The famed mansion, among the oldest remaining buildings of Hollywood, has become a landmark of the Film Capital and a cherished reminder of its Golden Age

580 Challenging Nature to Film "ROCKY MOUNTAIN REUNION"

On location with crew filming a one-hour ABC-TV Special in which John Denver helps release in Colorado breeding pairs of some of the world's most endangered species

602 Filming "THE CHESSIE STEAM SPECIAL"

Shooting a documentary of B & O's 150th Anniversary celebration, featuring a 20-car, steam-powered train in its excursion through ten states over 18,000 miles of track

● DEPARTMENT

544 What's New

552 Cinema Workshop

556 The Bookshelf

ON THE COVER: Abstract design to symbolize the 60th Anniversary of the American Society of Cinematographers. Cover Design and photograph by JAY KLAPPERMAN.

AMERICAN CINEMATOGRAPHER, (ISSN 0002-7928) established 1920, in 60th 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. Copyright 1979 ASC Holding Corp. Second-class postage paid at Los Angeles, California. **POSTMASTER:** Send form 3579, with change of address to, ASC Holding Corp., 1782 N. Orange Dr., Hollywood, CA 90028.



Francis Reusser with the 35 mm camera Aäton is making for J.L. Godard.

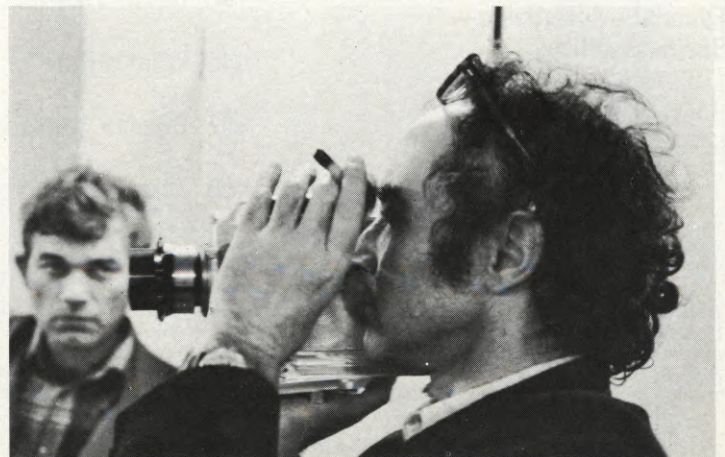
Jean-Luc Godard is one of the very rare directors who has had his instruments made to measure.

First with his own video laboratory for feature production

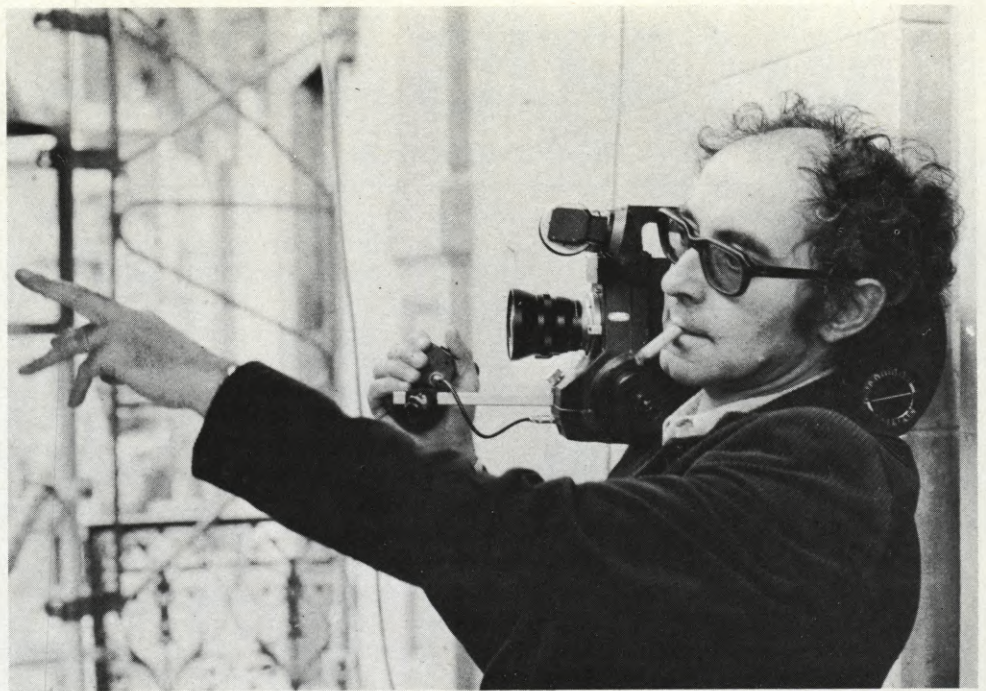
- 3/4 Sony to 35 mm : «Numéro Deux» 1976,
- 1" Bosch Fernseh : «France, Tour, Détour, Enfants» 1978.

Now he has had Aäton design a **35 mm camera** specially to meet his requirements. 35 mm because he wants the enormous information reserve of this format so that he can rework the original. And J.L. Godard wants a 35 mm camera that is as unobtrusive, and ideally as light, as a Super 8 camera.

F. Reusser & J.L. Godard getting a feel of the 8-35 in prototype form.



To design this compact instant-magazine 35 mm camera, he has called on Aäton — well known- for its **achievements and innovations** :



J.L. Godard directing Ben Hur II with an Aäton LTR (alternate caption : JLG with the LTR 16 mm camera — a reference for handholding)

A hand held 16 mm camera which attains a sound level that many other established manufacturers have never equalled : 22 dBA 1 meter in front of the film plane (with 7247 at 25°C). This is 8 times quieter than the usual 31 dB of numerous « self-blimped » cameras.

Another achievement is the extraordinary vibrationless running of the Aäton LTR; the sharpness has set a new level of excellence for 16 to 35 blow-up.

Not to mention innovations such as the built-in 24/25/30 fps *video camera*, an ultra-low-flutter *single system*, a linear microprocessor run *photometer*, and a breakthrough in *clear time marking* for film and magnetic tape*.

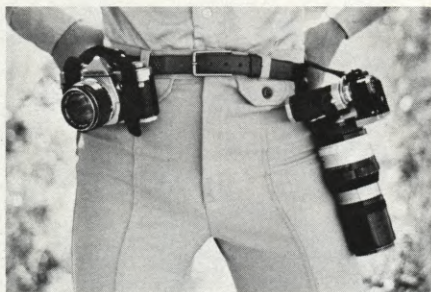
* all available on option

AATON CAMERAS INC.
1697 Broadway (at 53rd)
New York N.Y. 10019 (212) 541-8181

AATON

WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE



THE BELTER

The Belter is designed to get your 35mm still camera off your neck and onto your belt . . . for use by active people who want to carry a camera while skiing, hiking, biking, sailing, on horseback, on the golf course, or during almost any physical activity . . . or for anyone who wants to carry a camera for a long time.

The Belter supports a 35mm camera on your belt. It's made of thin but tough, cloth-textured, man-made rubber which resists drying and cracking. It adds no bulk as a case would.

The unit slides on the belt and the camera is inserted between the two stretchable flaps which form the ends of the device. As the distance between the flaps is narrower than the camera, and the lens keeps the camera from shifting, the Belter holds the camera securely.

When long lenses are used, the Belter is shifted to the hip . . . and both camera and Belter are tilted down so the heavy lens hangs naturally at the side. One size fits all 35mm Single Lens Reflex or similar shaped cameras. Price: \$3.95. At camera stores or from the manufacturer: Arthur Gould Products, 1690 West 6 Street, Reno, Nevada 89503.

FREZZOLINI UNVEILS NEW MODEL FR-16X "FREZZI-FLEX" AND "LONG-LIFE" SOUND HEAD

Filmmakers who shoot 16mm in both the U.S.A. and overseas will be traveling lighter in 1979, thanks to the new MODEL FR-16X "Frezzi-Flex" 16mm motion picture (ciné) camera, manufactured by Frezzolini Electronics Inc. in Hawthorne, New Jersey, U.S.A. The camera includes, as standard equipment at no extra charge, dual crystals selectable for 24 fps and 25 fps—now one camera will do instead of two.

1979 will find filmmakers using the new Frezzi "Long-Life" Sound Head, which, along with the Model FR-16X camera,

was introduced to the industry in November 1978 at SMPTE in New York City.

For more information write to Sales Manager, Frezzolini Electronics Inc., 7 Valley Street, Hawthorne, New Jersey 07506 U.S.A., telephone (201) 427-1160. Outside the U.S.A. contact Export Agents: Cinecraft International, Inc. 11 Caesar Place, Moonachie, New Jersey 07074 U.S.A., telephone (201) 939-0875. Telex: Cinecraft Moon TLX 13-8875, Cables: Cinecraft Moon, U.S.A. except England contact: Cinefocus Rentals Ltd., 44 Mountfield Road, Ealing, London W5, telephone 01-977 2236; and in Canada contact: Kingsway Film Equipment, Ltd., 821 Kipling Avenue, Toronto, Ontario M8Z 5G8, telephone (416) 233-1101.

HIGH DENSITY POLYETHYLENE CASES

With their insides sealed from the elements, they float, they're lightweight, they're rugged, and most of all, they are affordable.

Available in an assortment of stock sizes with or without foam, these cases are air transport and military tested and approved.

Custom foam for stock cases or custom cases with or without foam available.

For information please call or write your dealer or Cary Clayton at The Pelican Group; P.O. Box 16667; Irvine, California 92713; (714) 559-4883.

PHOTOMART INTRODUCES THE "PORTA-MIXER"

Photomart, a leader in the professional motion picture and television supply industry, has introduced the new "Porta-Mixer" self powered, battery operated microphone mixer.

The "Porta-Mixer" Model PM77 offers all users of ENG recording equipment and/or motion picture recorders, a light weight mixer for up to three microphones and one line input.

Weighing only 25 ounces, the "Porta-Mixer" may be fastened to the recorder with supplied "Velcro" strips or by use of an accessory snap-clip, may be worn on the belt or hung from a shoulder strap.

Long battery life for the "Porta-Mixer" is assured by a "Pop-in" rechargeable

Nicad battery easily charged while installed with the supplied trickle charger or externally with an accessory charger unit.

Supplied with 1 battery and 1 charger, the "Porta-Mixer" is priced at \$695.00.

For information, contact Charles Sutyak, Director of Sales, Photomart Cine Equipment Suppliers, 6327 South Orange Avenue, Orlando, Florida 32809. Telephone: (305) 851-2780.



ELECTRO-VOICE INTRODUCES SHOCK-MOUNTED CARDIOID MICROPHONE

A new shock-mounted super-cardioid microphone, the RE18, was introduced by Greg Silsby, Professional Products Sales Manager at Electro-Voice.

Although primarily intended for hand-held broadcast applications, the RE18 is equally at home in any situation where ambient noise rejection and isolation from handling noise is a consideration. "A good example," says Silsby, "is the mechanical stand and lectern noise commonly encountered in sound reinforcement systems. The RE18 effectively silences these annoying sounds."

Silsby notes that the RE18 has a great heritage, "The RE18 maintains the superb frequency response and super-cardioid polar pattern of the famous RE15 microphone while having an integral blast filter for "P-pop" protection as does the equally famous RE16." The Variable-D® design of the RE18 has the added advantage of maintaining its frequency response regardless of mike-to-talent working distance. "Frequency response is also maintained if the talent happens to get a little off-axis," adds Silsby. "With these additional advantages, it would not surprise me to see the RE18 showing up in recording studios or other music environments."

The RE18 carries a suggested retail price of \$226.00. For further information contact Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107. ■

PRECISION LENSES DESERVE PRECISION LENS MOUNTS

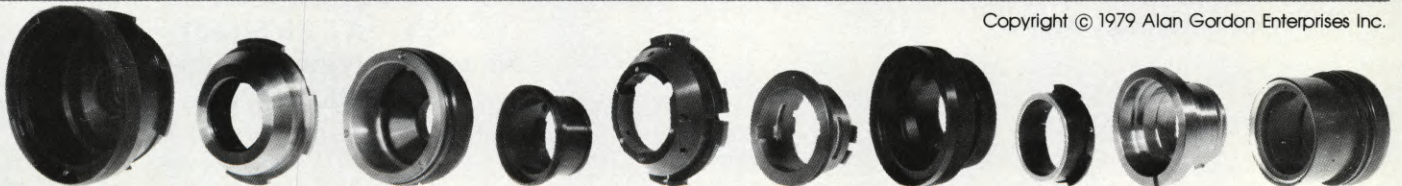


Optex Lens Mounts and Adapters, available exclusively from Alan Gordon Enterprises Inc., are precision manufactured to highest factory tolerances. They are designed to give results that will meet the most exacting professional standards. There are more than 50 Optex Lens Mounts and Adapters available, and all have tolerances to ± 5 microns. It makes good sense to use the best lens mounts and adapters for your professional motion picture lens. For detailed information on the most comprehensive range of lens mounts and adapters in the world, write or call:

alan gordon enterprises inc. 

1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

Copyright © 1979 Alan Gordon Enterprises Inc.



**BNCR 2X
Extender**

**BNCR mount for
intersection**

**CA-1 to C
adapter**

**Arri standard
mount**

**S-35R to
BNCR**

**Arri B
to CA-1**

**Intersection
mount for 20-120
Angenieux**

**Arri Standard
to BCP mount**

**Arri B for
intersection**

**Intersection
mount for
25-250 Angenieux**

THESE AWARD WINNING 35mm FEATURES WERE SHOT IN 16mm:

THE 35mm BLOW UPS WERE MADE BY DU ART

"Harlan County, U.S.A.".....by Barbara Kopple

1977 Academy Award Winner

"Girl Friends".....by Claudia Weill

1978 Cannes Film Festival, to be released by Warner Bros.

"Alambrista".....by Robert Young

1978 Winner, Cannes Film Festival "La Camera D'Or"

DuArt DMA* blow-ups ARE the state-of-the-art.

After years of perfecting the skills, the equipment, the art and the expertise, we added still another special ingredient. . . DMA technology using our sophisticated computer equipment. Each blow-up becomes very personal and intimate — not unlike editing. Each scene is carefully programmed using our exclusive DMA facilities to insure perfection.

We'll be delighted to help and assist you in planning your next production. Feel free to call Bob Smith or Bill Lynch.



*Direct Memory Access

245 West 55th Street
New York, New York 10019
(212) PL 7-4580

Peace of Mind.

It's yours with the spring-wound
Bolex RX-5 and SBM.

The money-saving and reliable 16mm alternatives.



Battery failure
at the critical instant.

It's been the downfall of more than
one dismayed cinematographer.

Or freeze-up on an icy football
field, ski trail, or mountain top.

These are the times that try
filmmakers' souls. They're also
the times when you need a good
back-up spring-wound camera.
Such as a Bolex, the finest example
of the breed. So fine, in fact, that
many pros select a Bolex spring-
wound as their only camera.

Here for a very
accessible price is
everything you ever
wanted from a 16mm
camera:

Superlative optical
design, with either the
bayonet-mounting H16

SBM or the traditional three
lens turret model H16 RX-5. The
optical path in both cameras
leads through a flickerless, re-
flex viewfinder with new, large
14X magnification.

Precision, governor-controlled
spring-wound drive with film
speeds from 12 to 64 fps. You can
pull nearly 18 ft. (more than 30
seconds) of film on a single wind.
Also, an auxiliary motor drive for
either model (as shown above on
the SBM).

Compactness, always a Bolex
trademark, combined with rugged-
ness that belies the ultra-refined
Swiss craftsmanship.

Variable shutter, an extraordi-
nary benefit for manual fading or
reducing depth-of-field (to isolate
a subject from its background).

Choice of synchronization by
crystal or sync pulse generator
(with automatic clapper).

A multitude of useful optional
accessories, including the clip-
on 400 ft. magazine, Rexofader
for perfect lap dissolves, and
matte box.

All this and much more, which
you will discover and appreci-
ate when you handle a Bolex
H16 SBM or H16 RX-5 at your
Bolex dealer.

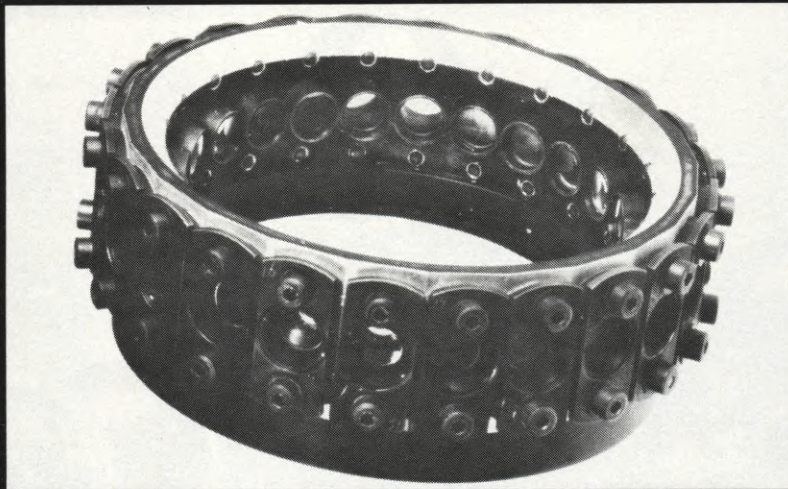
Bolex...First in Sixteen.

BOLEX

Professional Motion Picture Equipment

Bolex (U.S.A.) Inc., 250 Community Drive, Great Neck, N.Y. 11020 (516) 466-8222

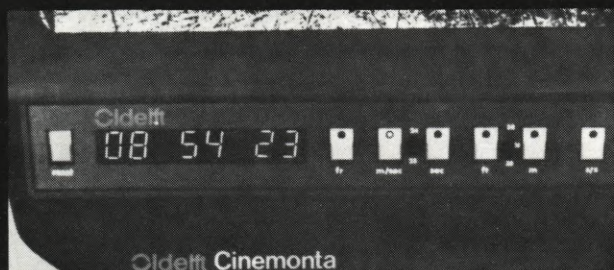
Oldelft makes the best even better.



FLICKER FREE VIEWING.

Oldelft introduces the OPTICAL CROWN system to its CINEMONTA flatbeds. The revolutionary Optical Crown provides a distortion free image with no light fall-off

and excellent shadow detail even while viewing in normal room light. No flicker! There's nothing like it.



COMPUTERIZED COUNTER.

Oldelft is first to introduce a Computer counter for editing tables. Touch a button and the bright LED readout instantly displays film length or running time. S8, 16 or 35mm at 24 or 25 fps in feet and frames, metres and decimetres. Multiduty!



Manufactured by

Oldelft

(nv Optische Industrie De Oude Delft)
Van Miereveltlaan 9, 2600 MD Delft
Holland tel. (015) 124044/182923
telex 32384

The CINEMONTA Editing Console.

The superior Film Editing Table that does the work. All the work for which it was intended. So you can be as creative as you intended. CINEMONTA is the most technically advanced console in the world. Efficiently designed. Reliable. Even imaginative. See for yourself.

Imported and distributed by

KLM Associates, Inc.

11810 Charen Lane
Potomac, Maryland 20854, USA
(301) 299-7259 telex 64249
(213) 931-6151 West Coast

When you need microphones with "reach," reach for these!



CL42S Shotgun System

The CL42S reaches farther and rejects more ambient noise than any other shotgun of its size ever made. Our exclusive line bypass port makes it more directional at low frequencies so you won't have to sacrifice frequency response when you use it on a boom. Diffraction vanes maintain high-frequency directivity to preserve uniform frequency response if the "talent" gets a little off-mike.

Phantom or AB powered, the CL42S comes complete with windscreen, shock mount, carrying case and handle for hand-held applications. And it's rugged.

CH15S Hypercardioid System

The CH15S is actually more directional than a mini shotgun mike – in a package that's only 4 inches long that weighs less than 6 oz. Specially designed for boom and fishpole use in TV and motion picture studios, but equally at home wherever working space is small and you have need for a compact, highly directional microphone.

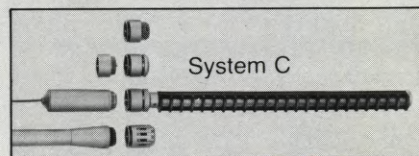
Compatible with phantom or AB power, the CH15S comes complete with windscreen, shock mount and carrying case. And, this microphone is rugged.

The Electro-Voice Warranty

Electro-Voice backs up these two microphones with the only unconditional warranty in the business: for two years we will replace or repair your CL42S or CH15S microphone, when returned to Electro-Voice for service,

at no charge – no matter what caused the damage!

We can do this because we build these microphones to meet our standards for performance, ruggedness and durability. We accept nothing less, and if you're a professional, buying a professional quality microphone, you shouldn't either.



EV **Electro-Voice**[®]
a **gulton** company

600 Cecil Street, Buchanan, Michigan 49107

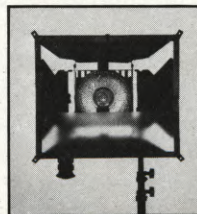
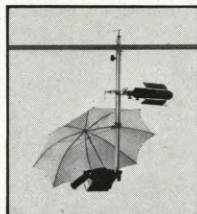


Lowel Ambi kit with Tota-lights and Omni-lights.

We believe in available light.

We really like available light. When it's right, it's terrific. With fast lenses and films, adequate exposure is seldom a problem. But there are a few other considerations. Is the mood and quality of light appropriate? Does the subject separate from the background? Is the contrast manageable? Can you "read" people's eyes? What about textures and shapes? And...will the light still be available for that last important shot? If you choose to supplement the natural source, or create your own

"available light" it's not necessary to make a big deal out of it. We offer several small solutions. Lights you can use hand-held, off-the-wall, overhead. Illumination you can vary from natural to super-natural. These and



other small solutions, come in a wide choice of Lowel kits.

We believe in making the best light available—just in case the available light isn't.

For equipment and kits see an authorized Lowel dealer. For brochures contact us. Lowel-Light Manufacturing Inc. 421 West 54th St., N.Y., N.Y. 10019 212 245-6744. Telex: 666597UW. West Coast: 3407 W. Olive Ave., Burbank, Calif. 91505. 213 846-7740 **lowel** 



Deluxe makes the Rock come to life again.

Whether it's dailies or release prints, there's no escaping deadlines. A film lab has to produce...to make it happen.

That's why Malpaso Productions chose Color by Deluxe for its new feature, "Escape from Alcatraz," which is scheduled for release through Paramount Pictures.

Clint Eastwood's production company already has quite a record, including "Dirty Harry" and "Every Which Way But Loose." And Deluxe has been a part of it. So when it comes time to bring the Rock to life again, Malpaso returned to a full-service lab that produces.

That's no con. Just great service, around the clock, with award-winning Deluxe quality. From 70mm through Super 8.

While our customers make box office news, Deluxe makes it happen!

de luxe laboratories

A DIVISION OF DELUXE GENERAL INCORPORATED

1546 North Argyle Ave., Hollywood, Ca. 90028 (213) 462-6171



CINEMA WORKSHOP



By ANTON WILSON

THE VIDEO SIGNAL

Motion picture film captures the entire image in one fell swoop. The lens forms the image, the shutter opens, and the image is captured in the film emulsion. So what's new? The point is that all elements of the image are captured by the film emulsion simultaneously and in the same instant. This is *not* the case with the video process. This difference in image forming technique is the very essence of the principle of television.

Any picture or image is really made up of many "bits of information." In film these building blocks are grains of silver and a newspaper or magazine picture is made up of dots of ink. If a picture is comprised of too few "bits of information", the image will appear coarse and grainy with a lack of fine detail. Ideally, the image should be comprised of "bits" significantly smaller than the finest detail of the picture. The television picture can also be considered to be made up of bits of information, as many as 250,000 in a high-quality image. For simplification, these bits may be thought of as dots that can be black, white, or any shade of gray between, similar to grains of silver on photographic film. (For the time being, only a B & W picture will be considered.)

The lens on the television camera forms the image on the target of the tube in the same manner as a motion picture camera lens forms the image on the film. While the entire image is present on the target of the tube during the "exposure" of one "frame", the image is captured one bit at a time sequentially.

A beam scans the target image looking at each dot of information. Starting at the upper left hand corner, the beam scans horizontally to the right. When it reaches the right hand side of the screen, it quickly retraces back to the left, moves down a slight amount and begins the next scan. It makes $262\frac{1}{2}$ horizontal scans before reaching the bottom of the image. This scanning process is really made in two stages. In reality, the television image is comprised of 525 horizontal lines. The scanner first scans the 263 odd lines and then goes back and scans the 262 even lines. Thus the television "frame" is comprised of two interlaced "fields". Each field takes $1/60$ th

second to scan, so $1/30$ th second is necessary to scan a complete video "frame".

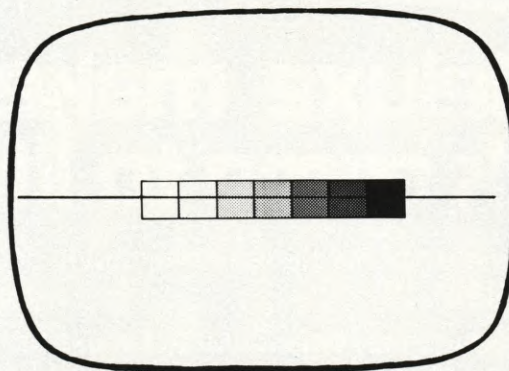
The output of the television tube is merely a fluctuating voltage. As the beam scans the image, this voltage will reflect the brightness of the dot that it is scanning at that instant. A white dot will cause the voltage to reach its maximum, while a black dot will result in zero voltage for that instant. Likewise, shades of gray will result in respective intermediate voltage levels.

This fluctuating voltage is, thus, the essence of the video signal. There are

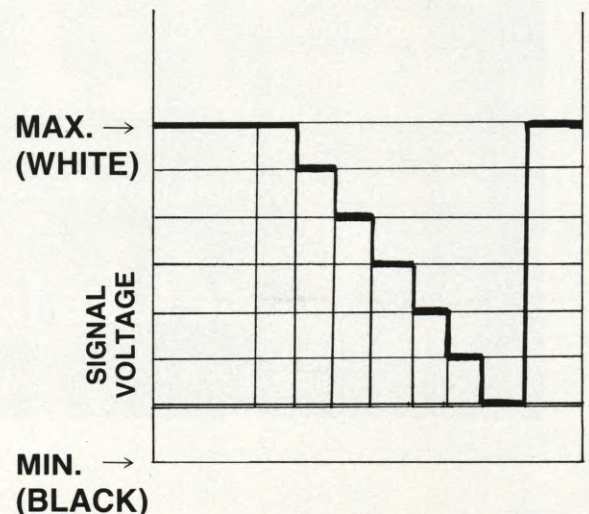
other elements that are added to the signal to assure proper synchronization and other functions. However, this fluctuating voltage is all that remains of the visual image. It is this fluctuating voltage that is sent to a monitor for viewing. It is this same signal that is recorded on tape for future viewing. And it is this same signal that is sent through the air to home receivers.

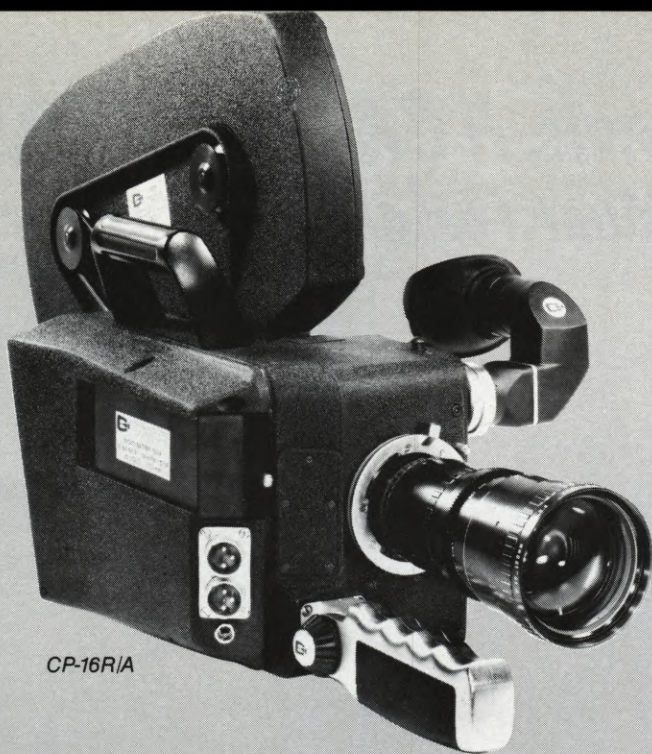
While this description is extremely simplified, the principle is valid and accurate, and will suffice as a basis for our future discussions on the video process. ■

FIGURE 1—Voltage output of camera during the single horizontal scan through the gray scale depicted above. As the beam scans the image, the instantaneous camera voltage is proportional to the brightness of the image at that point.



ONE HORIZONTAL SCAN





CP-16R/A

CP-16R REFLEX

THE DEFINITIVE SINGLE/DOUBLE SYSTEM PRODUCTION CAMERA!

Featuring a high-quality crystal-controlled single/double system sound capability that is integral to its design, the CP-16R is the quietest, most versatile professional 16mm production camera ever built. The choice of 16mm cinematographers all over the world!

Outstanding Performance

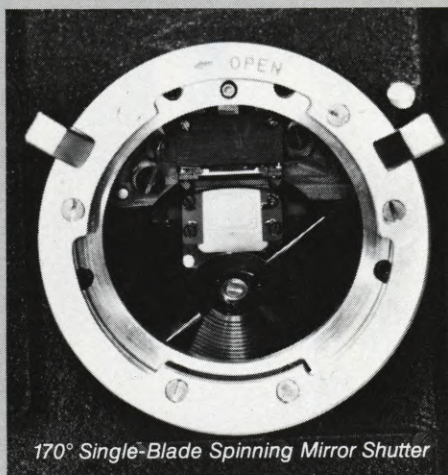
Lightweight, rugged and reliable, the "new generation" CP-16R features a belt-driven, focal plane-type, high-efficiency 170° shutter which delivers approximately 10% more light to the film plane. (And the elimination of one gear pass makes the new CP-16R even more silent in operation!)

Precision engineered and manufactured under the strictest quality controls, all CP-16R cameras leaving the factory are *guaranteed* not to exceed 30 dBA, one meter from the film plane. And, if equipped with Studio Rig, 28 dBA max!

Widest Range of Production Accessories

The CP-16R is the most versatile 16mm camera system designed for fully professional operation, with the widest range of optional important production accessories, all designed and manufactured by Cinema Products:

- Studio Rig, with full production matte box and professional follow-focus mechanism fully adjustable to accommodate both zoom and prime lenses.
- CP Orientable Viewfinder, with 7" extender for convenient tripod operation.
- Cinevid-16 video-assisted monitoring.
- J-4 Academy Award-winning "joystick" zoom control, or J-5 zoom control packaged into a special handgrip.



170° Single-Blade Spinning Mirror Shutter

- Crystaslate automatic slating system.
- Exposure control systems (fully or semi-automatic).
- Fully self-contained single system sound recording capability with Crystasound built-in amplifier.
- Comprehensive range of Crystasound recording system accessories such as: auxiliary mixer, pre-amplifier, 3XL-type magnetic heads, etc., plus Crystalink wireless transmitter/receiver systems.
- Steadicam™ — the revolutionary Oscar-winning camera stabilizing system which transforms virtually anything that moves into an effective camera platform.

Ease of Maintenance

The CP-16R has proven itself as the most reliable professional 16mm camera with the least downtime. Certainly, it is the easiest camera to maintain. For instance, the modular

rugged design allows the entire CP-16R drive assembly and complete circuit board to be replaced within ten minutes. Even under field conditions!

What's more, there is an extensive network of authorized service centers, well stocked with spare parts, located throughout the world.

Reasonably Priced

For all its sophisticated features, the CP-16R is the *most affordable* quality 16mm production camera available. (And, the shrinking U.S. dollar makes CP-16R prices more attractive than ever!)

So be sure to visit your local dealer and see for yourself what makes the CP-16R the definitive 16mm production camera. Ideal for filming 16mm feature and theatrical documentaries for 35mm blow-up, industrial/scientific films, TV commercials and news/documentaries, as well as all other applications where modern production techniques require the ease and efficiency of shooting single system sound with the quality and flexibility of double system sound recording.

CP-16R with Studio Rig,
CP Orientable Viewfinder
and 7" Extender,
plus J-4 Zoom Control.



cinema E products
CORPORATION

Technology In The Service Of Creativity

2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 • (213) 477-1971 • Telex: 69-1339

SYSTEM
CP-16



303/315 Cricklewood Bdy.
London NW2 6PQ
Tel: (01) 452 8090, Telex: 21430
Cables: Samcine London



24/26 Rue Jean Moulin
94 Vincennes, nr. Paris, France
Tel: 328 58 30, Telex: 670260F
Cables: Samcine Paris



122 Champs Elysees
75008 Paris, France
Tel: 359 35 33



25 Sirius Road, Lane Cove
Sydney 2066, N.S.W., Australia
Tel: 428 5300, Telex: 71 25188
Cables: Samsmeal Sydney

25 Lothian Street, N. Melbourne
Victoria 3051, Australia
Tel: 329 5155



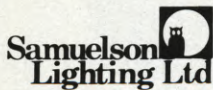
303/315 Cricklewood Bdy.
London NW2 6PQ, England
Tel: (01) 450 4550, Telex: 21430
Cables: Samcine London



Genop House, 15 Hulbert Road
New Centre, Johannesburg, S. Africa
Tel: 836 4275, Telex: 43 0057
Cables: Genop Johannesburg



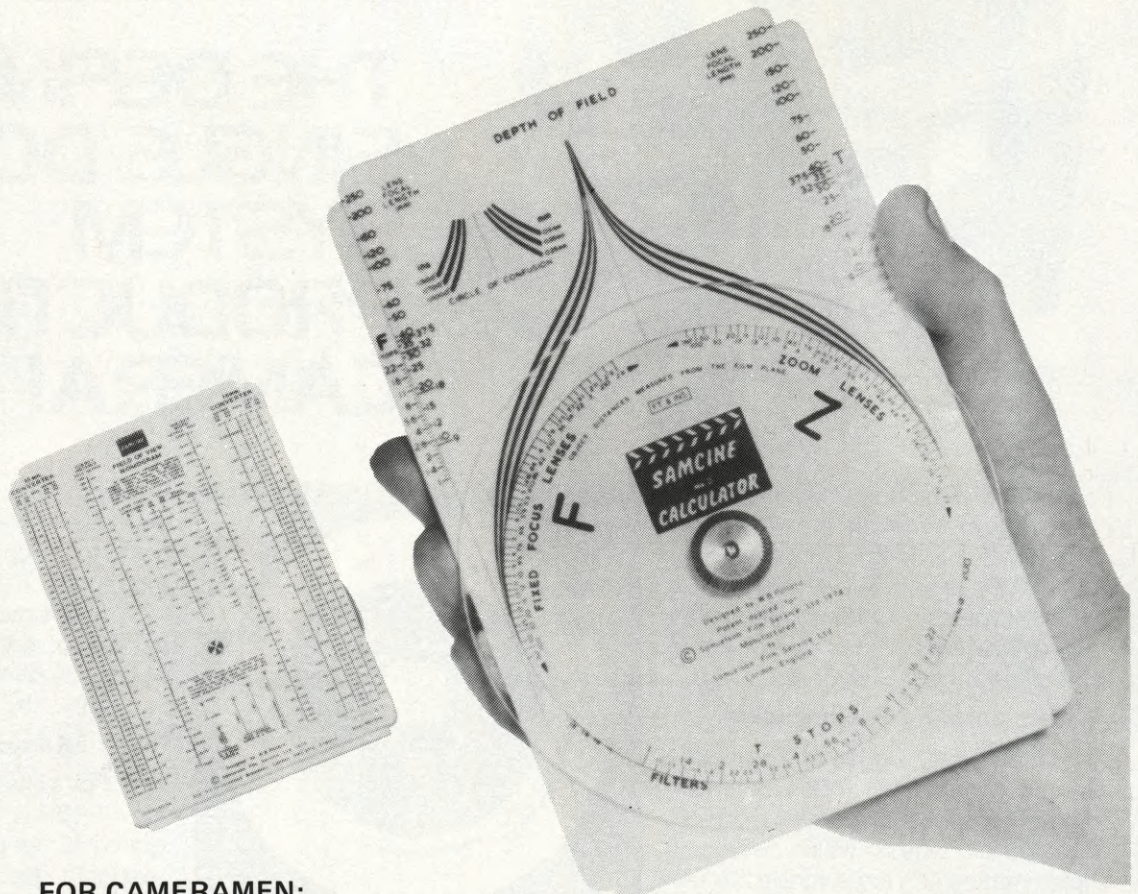
Rooms 59/60G, Building 521
London Heathrow Airport,
Hounslow, Middlesex, England
Tel: (01) 897 2851, Telex: 22197
Cables: Samfreight London



112 Cricklewood Lane
London NW2 2DP, England
Tel: (01) 452 5477, Telex: 21430
Cables: Samcine London

The SAMCINE mk. II CALCULATOR

A Must for all Film Makers



FOR CAMERAMEN:

DEPTH OF FIELD for any lens from 9 mm to 250 mm focal length, for any f or T aperture from 1 to 22, for any gauge of film or picture format from 35 mm Anamorphic to Super 8, for 3 circles of confusion and, for greater accuracy, SEPARATE SCALES FOR FIXED FOCAL LENGTH AND ZOOM LENSES.

EQUIVALENT EXPOSURE for any variation in filter, shutter opening (10-200²) camera speed 2-320 fps) or lighting intensity (3-1000 f.c. 30-10,000 lux).

METRIC EQUIVALENTS when lens distances are given in metres and you think in feet and inches, or vice-versa.

RUNNING TIME how long will a length of film run on 35 mm or 16 mm cameras?

PICTURE WIDTH AND HEIGHT what lens is required to take in a certain width of scene?

LENS ANGLE what is the angle of coverage of lenses when used for different film formats?

COLOUR TEMPERATURE what is the effect on colour temperature when using a different colour conversion filter on the camera and on the lighting?

FOR DIRECTORS AND EDITORS:

TIME AND FILM LENGTH how long a scene will run in seconds when shot or shown on 35 mm or 16 mm, at 24 fps or 25 fps, measured in feet or metres.

FOR TV DIRECTORS:

LENS ANGLES focal lengths in millimetres converted to degrees of angle.

FOR ART DIRECTORS:

FIELD OF VIEW how far a camera must be able to go back to take in a certain width of picture with a certain lens and how high the set must be for a given aspect ratio.

FOR GAFFERS:

COLOUR CORRECTION what effect on colour temperature lighting and window filters have.

FOR SCRIPT AND CONTINUITY GIRLS:

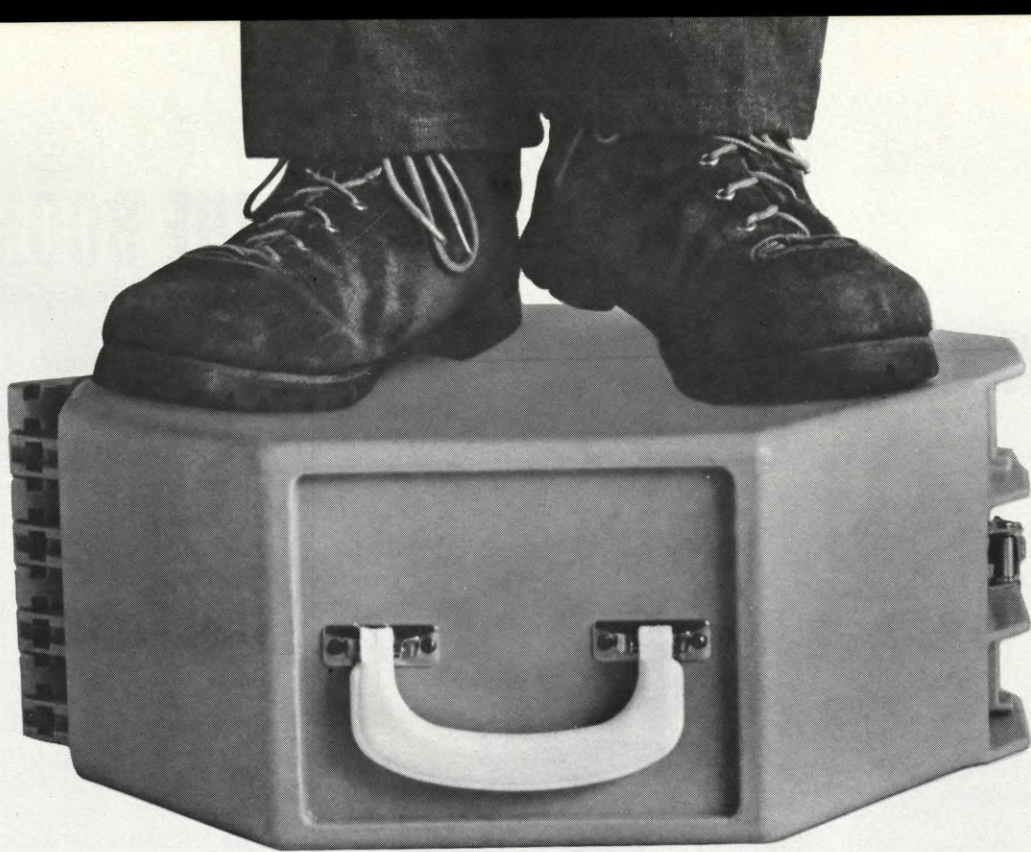
SCENE DURATION the length of a take in terms of feet or metres when running 16 mm or 35 mm film at 24 fps or 25 fps for a given number of seconds.

Price **£18** or **\$36**, postage paid to anywhere in the world from Samuelson Film Service Ltd., Stores Department, 303-315 Cricklewood Broadway, London NW2 6PQ, U.K.
State if feet and inches or metric version is required.

EUROPEAN MANAGING ASSOCIATES FOR

PANAVISION

Corporation of California Ltd



The Film Vault.TM

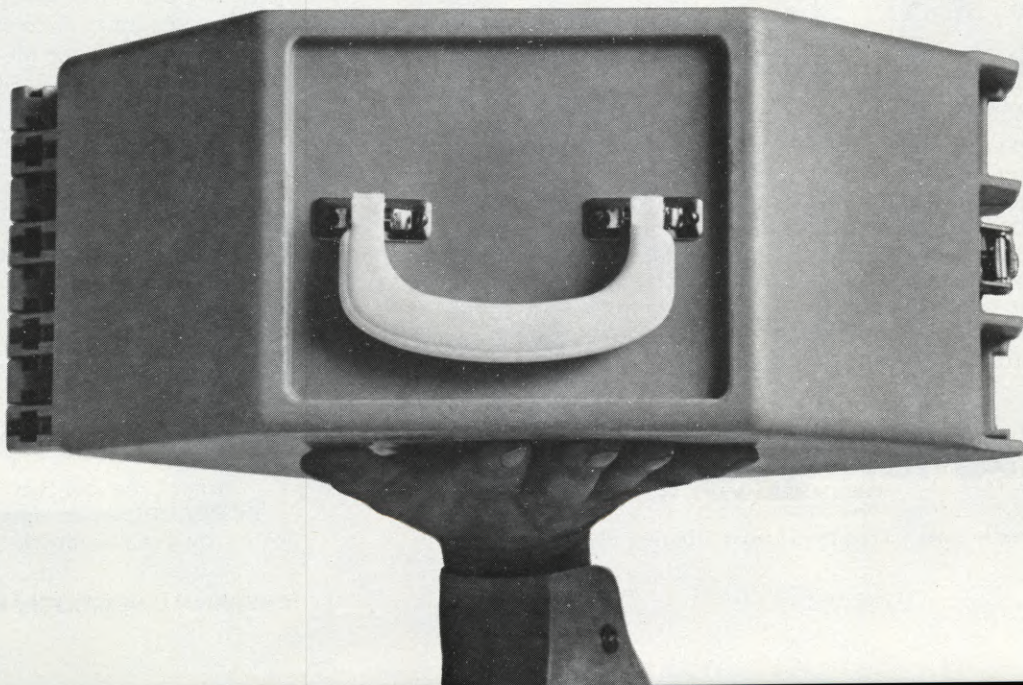
Our heavy-duty, light weight ICC case.

At last, an ICC case that can take it. Made of highly durable structural polymer material, it's ruggedly designed to withstand heavy abuse in shipping and handling. Yet the Film Vault is light weight—about 50% less than old-fashioned metal carriers. Stackable either horizontally or vertically, there's never a problem with rusting, scratching or denting shut. And it's *always* easy to open; never any prying with a screwdriver. In the most popular size, for 3-reel shipping and storage.

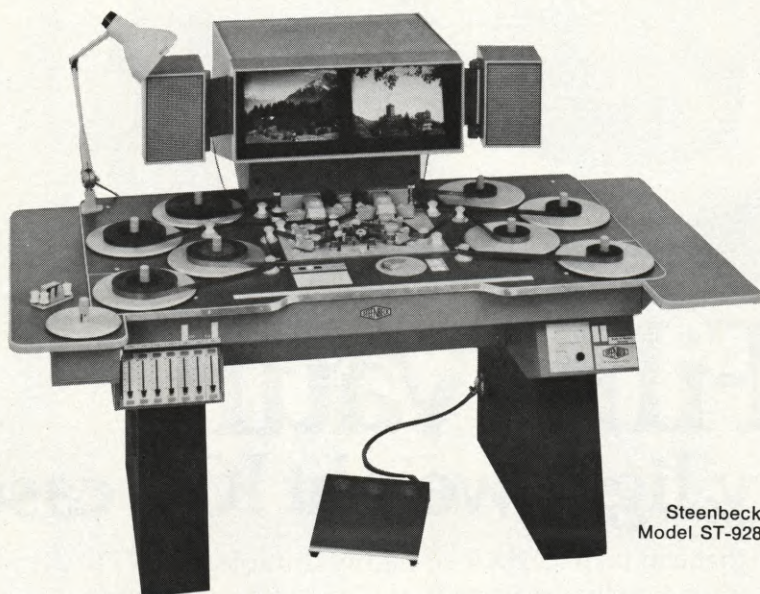
For more information, please write or call.



46 Passaic Street, Building 52, Wood Ridge, N.J. 07075 (201) 933-9125
Chicago (312) 942-1950 ■ Dallas (214) 634-7774 ■ Hollywood (213) 851-7532 ■ New York (212) 541-6464
A wholly owned subsidiary of Williamhouse-Regency, Inc.

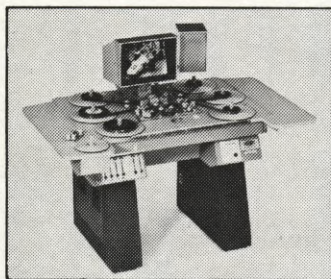


WHEN YOU'RE READY TO MOVE UP TO STEENBECK



Steenbeck
Model ST-928

CAMERA MART IS READY FOR YOU.



Steenbeck Model ST-1900

When your editing demands the ultimate in precision, optical quality and ease of operation, Camera Mart has it for you. Steenbeck. The most sought-after name in editing systems. Precision machining and optical excellence combine to give Steenbeck the edge in faster, more versatile editing and gentle film handling. You'll appreciate Steenbeck at 2 a.m., after an all-night session.

And the next day, when your handiwork receives the praise you deserve.

Steenbeck is the ultimate link between your editing ideas and final work print. And Camera Mart is your link to Steenbeck. All models, both 16 and 35mm. With rental, sales and leasing arrangements to suit every requirement. It makes sense that the number one name in editing would choose the number one equipment supplier as their New York distributor. We make a perfect team. Call us today for details.

Member Professional
Motion Picture
Equipment Association
MPA

CAMERA MART
THE CAMERA MART, INC.



456 West 55th Street, New York, New York 10019 (212) 757-6977 Telex: 1-2078

Rental - Sales - Long Term Leases - Dealers Inquiries Invited

THE BOOKSHELF

By GEORGE L. GEORGE

ASPECTS OF CINEMA

A perceptive analysis of director Bergman's key films, Maria Bergom-Larsson's *FILM IN SWEDEN: INGMAR BERGMAN AND SOCIETY* illuminates the ideological relationship of his films to the milieu he sprang from, his straight-laced Lutheran upbringing and his patriarchal attitude toward women (Barnes \$7.95).

A historic survey of some 400 sci-fi movies, *FUTURE TENSE* by John Brosnan discusses the genre's techniques and content in a knowledgeable assessment of the trends and influences that shaped their evolution. Brosnan's authoritative study ranks among the top books on the subject (St. Martin's \$15).

Arthur Knight's celebrated survey of movie history, *THE LIVELIEST ART*, is now available in paperback. This revised and updated edition offers a penetrating and consistently judicious appraisal of the medium (NAL/Mentor \$2.50).

Arno Press reprints of classical works of cinema literature now include 4 volumes in addition to those reviewed in our April column: *ART AND PRUDENCE* by philosopher Mortimer J. Adler examines esthetics—and particularly film—from the social and moral angle (\$45); *BRITISH CINEMAS AND THEIR AUDIENCES* by J. P. Mayer views film as the dominating educational element in human behavior (\$25); *THE CINEMA IN EDUCATION*, edited by James Marchant, explores "the physical, social, moral and educational influence" of film in Britain (\$15); and *MOTION PICTURE COMMISSION—HEARINGS BEFORE THE COMMITTEE ON EDUCATION* by the U.S. House of Representatives to establish a Federal Motion Picture Commission (\$18).

Intimate appraisals of movie stars by their directors, producers, spouses and friends have been collected by Danny Peary in *CLOSE-UPS*. Celebrities of past and present undergo candid scrutiny at the hands of over 100 of their associates (Workman \$8.95).

Writer/producer Syd Field provides in *SCREENPLAY* an approach based on his own experience, discussing the

basics of the craft in terms simple enough to enable any beginner to develop an idea into a submittable script (Delta \$4.95).

The way Hollywood movies interpret American institutions, values and lifestyles is expertly analyzed by 14 scholars in *AMERICAN HISTORY/AMERICAN FILM*, edited by John E. O'Connor and Martin A. Jackson. From *Way Down East* (1920) to *Rocky* (1976), the evidence yielded by films is held to reflect their relative validity as testimonials of their time (Ungar \$12.50/5.95).

Gerald McKee's *FILM COLLECTING* is replete with informative comments and practical tips on a hobby that has grown considerably in recent years and is actively expanding into tape (Barnes \$12).

THE REFERENCE SHELF

In *LIGHTING FOR LOCATION MOTION PICTURES*, Alan J. Ritsko examines in substantial detail the indoor location shooting requirements of director of photography, lighting director, camera-man and gaffer. This is a highly practical, well illustrated volume, covering all types of production in expert descriptions of the jobs (Van Nostrand Reinhold \$16.95).

Factual data about Hollywood personalities of past and present, arranged in computer print-out style, fill the pages of *STAR STATS*, edited by Kenneth S. Marx. Vital statistics, family status, professional credits are liberally supplied, together with studios' governing hierarchies and other relevant details (Price/Stern/Sloan \$5.95).

An extensive reference index, *ACADEMY AWARDS* edited by Richard Shales, assembles all nominees and winners listed by category and year. This comprehensive volume is well organized, convenient to use, and includes a valuable bibliography (Ungar \$24.50/8.95).

In Vol. 2 of *FILM NEWS OMNIBUS*, *Film News* editor/publisher Rohama Lee has compiled reviews of more than 400 films in 16mm as originally published during the last 3 years in that widely circulated magazine. Documentary features and shorts are reviewed by a group of professional critics, providing data on distribution and offering exceptional reference source material for the classroom and the community (Film News, 250 W. 57 St., NYC 10019; \$17.50 or \$15 if remittance is enclosed with order).

The 1979 edition of *AUDIOVISUAL MARKET PLACE*, now in its 9th year of publication, is an authoritative multimedia guide offering a comprehensive picture of the industry's requirements. Methodically organized, it lists a-v hardware manufacturers and dealers, a-v software producers, distributors and services, as well as reference data on related facilities (Bowker \$23.50).

The *WRITERS GUILD DIRECTORY*, 1979 edition, lists all WGA members, and in many cases includes their writing credits spelling out the nature of their collaboration (WGA, W, 8955 Beverly Blvd. Los Angeles, CA 90048; \$10).

An extensive section devoted to film and television appears in Vol. 1 of *AWARDS, HONORS AND PRIZES*, covering the U.S. and Canada. Edited by Paul Wasserman and carefully cross-indexed, it describes over 5000 such recognitions in 450 categories encompassing radio, theater, science and education (Gale \$45).

VIDEO VARIETIES

Perplexingly naive in his appraisal of television, Ben Stein alleges in *THE VIEW FROM SUNSET BOULEVARD* that producers and writers present a distorted image of American life, creating instead an "alternate reality" that reflects their own political, social and economic concepts. This simplistic analysis fails to account for the popularity of escapist fare, whose audience seems to accept readily the shows' relevance to their own experience (Basic Books \$8.95).

In *TELEVISION FRAUD*, Kent Anderson examines the "fixing" practices that prevailed in many TV quiz shows of the 50s, and documents thoroughly the ensuing investigations that revealed deep flaws in the broadcasting industry (Greenwood Press, 51 Riverside Ave., Westport, CT 06880; \$18.95).

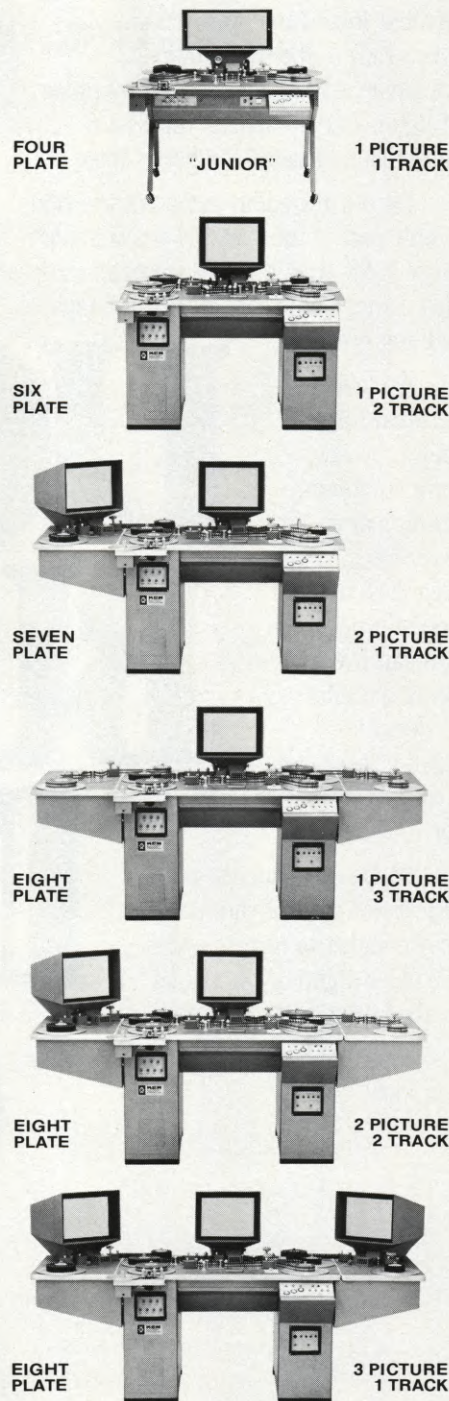
An attractive collection of 200 full-color pictures, *THE MUPPET SHOW BOOK* highlights particularly endearing episodes of the popular TV show in a brilliant visual display supervised by the Muppets' creator, Jim Henson (Abrams \$17.50).

Probing "the heart and soul of the TV Soap Opera," Annie Gilbert, in *ALL MY AFTERNOONS*, uses imagination and wit in this entertaining survey of the genre, its creators and performers, scripts and production techniques (A&W Publishers \$14.95/7.95). ■

KEM UNIVERSAL

A Unique, Modular, Extendable Editing System — Quickly Interchangeable For All Film Formats.

Multiple screens and tracks let you weigh the full balance of images dialogue, music and effects.



EAST OF THE ROCKIES:

MM Editing Systems Inc.
230 Park Avenue (at 45th St.), Rm. 339, N.Y. N.Y. 10017 (212) 697-5865

WEST COAST AND TEXAS:

KEM Editing Systems Inc.
6253 Hollywood Blvd, Hollywood California 90028 (213) 461-4143

Why should a young producer with a small project turn to a big outfit like Charles Ross?

It's easy enough to figure out why leading producers trust us to satisfy their lighting needs.

We're equipped for it.

Grips, props, generators — we've got 'em all. From the biggest brute to the smallest inkie (and everything inbetween) — the most complete, comprehensive and contemporary range of lighting equipment in the East is conveniently located at Charles Ross.

Yet our incredibly extensive selection is only part of the story. Of equal importance is the wide-ranging seasoned expertise that comes from years of solving tough lighting problems.

We take a personal interest and a special pride in doing a terrific job on every job... regardless of size. And at a price you can live with. We're specialists in designing lighting packages that give you the most for your money.

So we can honestly say that it will pay the youngest movie maker to turn to one of the oldest lighting companies in the business.

Try us and see how good you look!

WE'VE GOT THE LIGHTING BUSINESS IN OUR GRIP



Charles Ross INC.

The Light Source

333 West 52nd St., N.Y., N.Y. 10019 212/246-5470
Sole Distributors of Mole-Richardson Products in New York/New Jersey Area.

"WANDA, NEVADA"

Photo, left to right: Donald M. Wolak, Gaffer — Michael C. Butler, Cinematographer — Geno Barragy, Key Grip



A unique cinematography challenge, superbly filmed by **MICHAEL C. BUTLER**

Mike Butler's growing reputation for capturing the full cinematic scope of a director's "feel" for every scene has made him increasingly popular among particularly demanding film-makers. Perhaps he comes by it naturally; Mike's father long ago earned recognition throughout the industry as an outstanding and well-liked professional.

...with **HMI** lights from **CINE-PRO**

Mike Butler's selection of CINE-PRO to supply the HMI lights used in the filming of "Wanda, Nevada" came naturally, too. "When you're out on location in the middle of nowhere, you have to be absolutely certain that you can rely on the performance of your equipment," Mike explains. "To me that usually means, 'get it from Cine-Pro.' They're fanatics on maintaining their equipment in perfect operating condition, because Carl Porcello feels that his personal reputation is riding on every item that goes out through his door. He carries that through to their services, too. If you need something and it's at all within the limits of physical possibility, Carl will break his back to see that you get exactly what you want, where and when you want it. That total reliability is what really sold me on Cine-Pro."



CINE-PRO

"WANDA, NEVADA" PRODUCED
BY PARADISE PRODUCTIONS.
A UNITED ARTISTS RELEASE.

1037 N. SYCAMORE AVE. • HOLLYWOOD, CA 90038 • (213) 461-4794

“TVC’s Chem-Tone is an indispensable technique...it adds enormously to the mood of authenticity in my nighttime photography.” Ray Rivas



“I’ve developed a nighttime lighting style—some people would call it ‘bold or gutsy’—that wouldn’t be possible without the availability of a process like TVC’s Chem-Tone”. It’s the look that Kenyon & Eckhardt requested when they asked me to shoot a package of commercials in Milwaukee for their client, Ford Motorcraft.

“The agency had devised fast-action storyboards which called for cops-and-robbers-style footage—a combination of dialogue and dangerous auto stunts. And more than half the scenes were set at night.

“I always prefer to utilize ambient nighttime light to its fullest, working with a minimum of supplemental lighting and avoiding fill light wherever possible. And with Milwaukee in the grip of a frigid winter storm during our three-day shoot, with temperatures regularly dipping below zero, we couldn’t have worked with a heavy lighting situation and the big crew needed to operate it. Our efficiency would have been cut down too far.



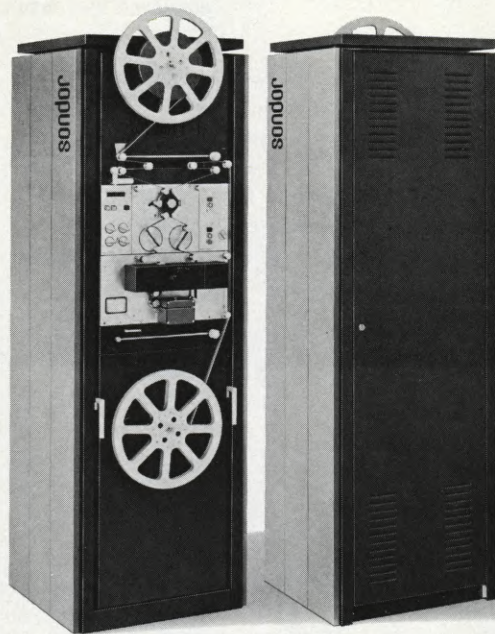
Ray Rivas Director/Cameraman
Rivas/Aronson Film Associates, N.Y.

“The availability of Chem-Tone meant that I could reliably shoot many scenes we needed in downtown Milwaukee using only the ambient light provided by street lamps, shop windows and the flashing gumballs on top of the police cars. I knew that I could safely push my 5247 to 400 ASA and still obtain black blacks, vibrant colors and hold my contrast down. And by shooting night-for-night, I avoided the blue-green cast associated with day-for-night photography.

“For a director/cameraman like myself who’s seeking a realistic nighttime lighting style, TVC’s Chem-Tone is an indispensable technique.

Only TVC has Chem-Tone

tvc laboratories, inc., 311 west 43rd street, new york, new york 10036 (212) 397-8600



sondor V2/OMA3
16 mm High Speed
Xenon-Projector/
Colour Scanner

FOR PEOPLE WHO LOOK A LITTLE MORE CLOSELY.

 **sondor**
Being better isn't easy.

COUPON: PLEASE SEND ME DETAILED INFORMATION:

- SONDOR OMA3 MODEL RANGE SONDOR MO3a, THE "BIG LIBRA"
 SONDOR MO3 LIBRA MODEL RANGE SONDOR VVP2/OMA3 PROJECTOR/SCANNER

NAME:

ADDRESSE:

SONDOR EXPORT AG, CH-8702 ZOLLIKON/ZURICH, SWITZERLAND

PHOTOGRAPHING "DAYS OF HEAVEN"

By NESTOR ALMENDROS

Translated by HAL TRUSELL

As a cameraman, I am drawn naturally to the works of visual directors. In particular, there are three American directors I consider masters of visual presentation: King Vidor, Josef Von Sternberg, and John Ford. Their interest in set design, camera angles, composition, and lighting combined to produce films of time-tested originality and expression.

These men were, above all, visual directors, and in spite of their reputations

for complex and detailed aesthetics, they maintained a simplicity of the essential in their lighting preferences.

In their films, the light is united to the *mise-en-scene* to the extent that it actually becomes a part of the *mise-en-scene*. Their total integration of light and visuals has always been a guide for me, and it was this artistic preference which drew me to Terrence Malick and his project, DAYS OF HEAVEN.

The winner of this year's Academy Award for "Best Achievement in Cinematography" discusses the techniques he employed that resulted in all those stunning images on the screen

When producers Harold and Bert Schneider first contacted me regarding DAYS OF HEAVEN, I asked to see Malick's previous film, BADLANDS. On the basis of this screening, I immediately realized that Malick was a director with whom I could establish a unique and productive collaboration. Later, I learned that Terry greatly admired my work in L'ENFANT SAUVAGE (THE WILD CHILD), which, although black and white, was also a period movie with similarities to DAYS OF HEAVEN. As a matter of fact, it was because of this film, directed by Francois Truffaut, that Malick asked me to photograph DAYS OF HEAVEN.

In the filmmaking process, the communication between a director and a cameraman is often ambiguous and confused because the majority of directors don't understand the technical details required in cinematography. With Terry, there was never any miscommunication. He always understood exactly my cinematographic preferences and explanations. And not only did he allow me to do what I had always wanted to do—which was to use less artificial light in a period movie than is conventionally used (many times I used none at all)—but he actually pushed me in that direction. Such creative support was personally exciting and directly enhanced the work I was doing.

Our creative work consisted basically in simplifying photography: cleansing it of the artificial glossy look of the films of the recent past. Our models were the films of the silent era, (Griffith, Chaplin, etc.), when cinematographers made unique and fundamental use of natural light.

Using natural light as often as possible meant using only natural window light for day interiors, like the great Dutch painter Johann Vermeer. For night interiors it meant using very little light, from a single justifiable source, such as a lantern, candle, or electric light bulb.

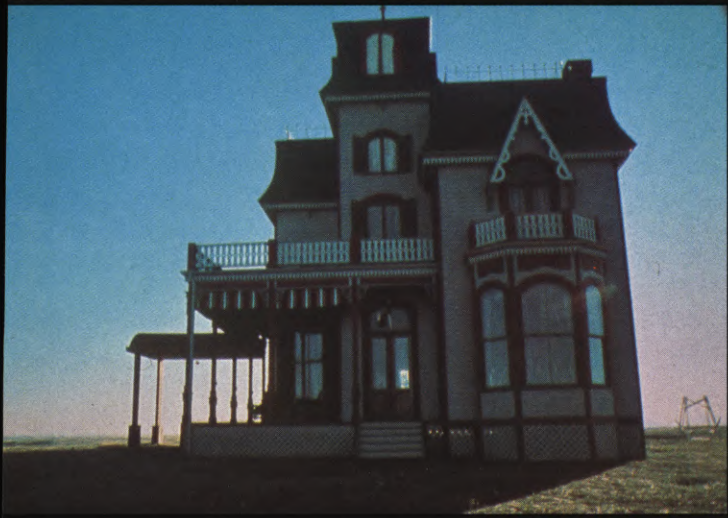
In this sense DAYS OF HEAVEN is a homage to those creators of images in the years before sound whose works I admire for their raw quality and for their lack of artificial refinement and gloss.

Cinema—the visual presentation of film—became very sophisticated in the thirties, forties, and fifties. As a filmgoer, I like the photography of these films, particularly the early sound pictures, but it is



Filmed in the sweeping wheatlands of Canada, Paramount's DAYS OF HEAVEN is the story of the men and machines that till the soil and reap the harvest. Visually it is reminiscent of that classic documentary, THE PLOUGH THAT BROKE THE PLAINS. The land itself is very much a leading character in the elemental drama of love, hate and murder that unfolds in these pastoral surroundings.





not the style I look for in my own work.

As in all my films, I was inspired by works of great painters. For this particular project, I was influenced primarily by American painters such as Andrew Wyeth and Edward Hopper.

Besides being a very educated and knowledgeable man of the arts, Terry Malick is also a collector of classic still photographs. His collection of turn-of-the-century reproduction books became a guide for designing clothes and sensing the mood of the people of the era.

Eventually we felt these stills to be such an influence that they were the first images chosen for the audience to see during the title sequence, thereby setting the mood and sense of period for the picture.

With Bill Weber's editing, these title images follow one another in a visual classic symphony, with *andantes*, *maestossos*, *staccatos*, *tremolos*, etc.

To develop a design and style for this particular film, my first consideration upon arriving on location in Canada was

the character of the natural sunlight.

The light in France is very soft and subtle because of a mattress-like layer of clouds that covers the sky, making work in exteriors very easy, shots matching each other from any angle without modification.

In North America, however, the air seems more transparent and the light more harsh. When a person is backlit, his face appears to be in dark shadows to the eye of the film.

In filming day exteriors, the normal procedure is to use reflected or artificial light (such as an arc) to fill the shadowed areas and thereby reduce the photographic contrast.

In this film, however, Malick and I felt it would be better not to follow convention, to use no lights, and to expose instead more for the shadowed areas. The effect of this was that the sky would come out over-exposed ("burned"), thereby losing its blue hue. This was an effect that pleased Terry.

Malick, like Truffaut, follows today's tendency to eliminate color. The blue sky bothers them. They seem to feel that the blue sky gives the landscape a postcard quality, as though it was put there for vulgar tourist publicity.

Straight exposure of shadow in backlit situations would have given us a "burned out" sky—white, colorless. Using arcs or reflectors would have made the scene flat, without dimension and not very visually interesting.

I decided to forego the use of any artificial or reflected light, and to split the difference between my reading for the sky and my reading for the shadow, resulting in faces being slightly under-exposed, and the sky slightly over-exposed, taking away thereby the intensity of blue, yet not letting it burn white.

Surprisingly for me, this creative decision became a primary point of dissension among the technicians.

The circumstances of a European cameraman working on a major studio film precluded me from being able to select the technicians who would work for me. Instead, the producers assigned the technicians to the production. With very few exceptions, the crew was made up of the typical Hollywood old guard.

They were accustomed to a very polished form of lighting and photography. For them the faces should never be in shadow and the sky should always be blue. I found myself walking onto the set with the arcs in place and ready for each scene. My work became *de-illuminating*, that is, removing the false and conventional light.

I could see members of the crew were very unhappy with our creative approach



In *DAYS OF HEAVEN* Brooke Adams, leaving all glamor behind, plays the role of an impoverished migrant worker who, with her lover (Richard Gere), schemes to ensnare the well-to-do bachelor landowner, Sam Shepard (right) for whom they both work. The spare story line revolves about these three characters and their luckless activities. (BELOW) After a back-breaking day in the fields, the workers bathe in the pond.



to this film, and some began openly to comment that we did not know what we were doing, and that we were not "professional". At this point, as a gesture of good will, we would do one take with the arcs, and another without. We then invited the dissenters to view the rushes to see and compare the results, and offer their comments.

This creative conflict became more accentuated as filming progressed. I was fortunate that Malick not only sided with me, but was even MORE daring. In scenes where I initially felt it necessary to use a sheet of white Styrofoam to bounce a little sunlight into an actor's face to slightly reduce the contrast, Malick would ask me to shoot without it.

Since we could see the rushes immediately and it was apparent the results were adding to the visual presentation of the story, we became more and more daring, using less and less artificial light, preferring the look of the raw, natural images. Some of the crew began to see what we were doing and little by little, joined our interpretation. Others never understood.

If on the one hand there were conflicts with some of the technicians, on the artistic level I had the good fortune of working with some of the very best collaborators I could have imagined.

In each film there is actually a very small group of people who are really responsible for "creating" the film. On DAYS OF HEAVEN this group consisted of about six or seven individuals:

Production designer Jack Fisk, who designed and constructed the mansion and the shacks where the migrant workers lived.

The dramatic highpoint of DAYS OF HEAVEN is the fire sequence involving the conflagration which was started to battle the swarms of locusts that threaten the wheat. In the two-weeks of night filming for this sequence, during which several fields were set afire, the crew worked under dangerous conditions and, at one point, narrowly escaped disaster when, despite all precautions, they found themselves surrounded by the fire.

Patricia Norris, costume designer, who created with great taste and extraordinary sensitivity the clothes of the period.

Jacob Brackman, an associate of Malick's, who was in charge of second unit; and, of course, Producers Harold and Bert Schneider.

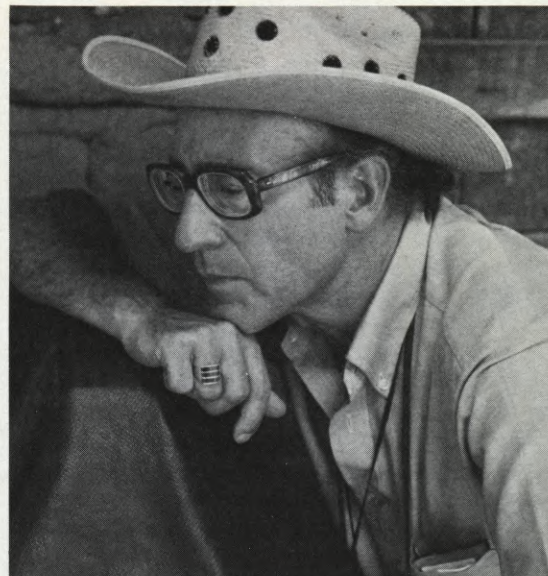
Each day, this group would ride in a large van from the hotel to the wheat fields. The trip was an hour one way, and invariably we would talk about the film. In this way, this group would have an improvised special production meeting each morning. The effect of such a creative unity and focus in the actual production of a major film cannot be discounted.

Between the set decorator, props, and wardrobe, we selected combinations of colors which were muted because historically colors then were not as bright and aggressive as colors today.

Patricia Norris created old clothing and dresses that didn't have that synthetic look or quality that is recognizable in the finely machined clothing of today.

The mansion was built solid in the middle of rolling wheat fields. It was a real house—both inside and outside—not just a facade, as is typically done for a film. Even the colors and selection of the wood were period, all dark and realistic.

Many people in the film business think the Director of Photography need only be concerned with the camera and related technology. I believe that the Director of Photography must also work closely with everyone involved in the visual presentation. The truth is, you cannot achieve good photography—photography with a particular style and grace—unless you



Born in Spain, Director of Photography Nestor Almendros lived much of his youth in Cuba and has, for several years, been a resident of Paris.

work hand in hand with the set designer and the costume designer.

If poor taste is used in the selection of the items that will visually appear in the film, then no matter how striking the work of the cameraman, the strength of the visuals will always be diminished by the ugliness or inappropriateness of the items within the frame.

You cannot get beauty out of ugliness; unless you aim for the oxymoron of Andy Warhol, who found "ugly beauty".

There were several camera operators for this film. Contrary to the films I do in Europe, (for union reasons) I was not allowed to operate a camera. Of course, I lined up the shots, and rehearsed their visual design with Terry (the movements of the camera and the actors inside the frame). Considering the situation, I was fortunate to have four camera operators of great skill and talent. From Hollywood, John Bailey; from Canada, Rod Parkhurst; Eric Van Haren Noman, the Panaglide specialist, and the second unit camera operator, Paul Ryan.

To be fair, the praises given to my work should be distributed among these and other anonymous technicians, especially in the multi-camera scenes where one camera shot wide angle, another detailed with a telephoto lens, and another was hand-held—all while the Panaglide slid through the flames and around and in between groups of people. And finally, Haskell Wexler, ASC, who supervised the last three weeks when I had to leave due to a prior commitment. ALL this was unified by the immense talent of Terry; thanks to his technical knowledge and his infallible taste.

Continued on Page 592



DRACULA BITES AGAIN

The latest in a rash of films about the world's most famous Vampire, this lush production portrays him as a "romantic" who can't get enough of that wonderful red stuff (blood!)

DRACULA The Legend

Count Dracula's appeal is as old as Anarchy, and modern as silicone chips.

Dracula meant *dragon* or *devil* in the ancient Wallachian tongue. Today he has become part of the Pantheon of 20th Century mythology, alongside Tarzan, Sherlock Holmes, Superman and Commander James Bond.

The vampire condition was well known to Byzantine, Turkish, Venetian, Hungarian, Genoese, English and French chroniclers of Renaissance times. Feared by the Chinese, Indian and Malay alike.

Actually a 15th century princeling, the real-life prototype of Dracula was Vlad the Impaler, with a considerable taste for blood-letting. Sensing unspoken insults, he once nailed the hats of a visiting foreign delegation firmly to their heads. He completely solved the health and welfare problems in his domain by gathering all the poor, halt and lame in one castle,

locking the doors and burning them alive.

On his very best day, he dispatched some 30,000 people to the hereafter, impaling most of them on stakes.

Although already enjoying some success in 1847 as Varney the Vampire among the weekly serials known as "penny dreadfuls", the present craze for the Prince of Darkness, who haunted boudoirs and graveyards of late Victorian England, dates from the publication of Bram Stoker's novel exactly fifty years later (1897).

Such superstitions die hard. The one tangible piece of research unearthed from Stoker's working papers for the book was a feature article from the February 2, 1896, edition of "The New York World" detailing then current traces of vampirism in both Rhode Island and New England.

Stoker lit the fuse. And Dracula has since been celebrated in almost every

medium known to contemporary man.

The first stage productions in both London and New York played to fainting-room-only audiences.

Variations on the theme have appeared in 29 further novels, 118 short stories, innumerable newspaper and magazine pieces, plus five television series reaching 430 million viewers in 17 lands.

The Romanian Tourist Board climbed on the hearse with conducted package tours that include Vlad the Impaler's tomb beside Lake Snagov, near Bucharest.

The permutations are infinite. From a children's cereal called "Chocola", to "Count Dracula's Deadly Secret", a confection of "moon white ice-cream concealed in black-as-night water ice". "Eat one before sunset" went the slogan and seven million kids did just that in the first two months.



(LEFT) Mevagissey, a quaint fishing, boat-building village in the west of England, served as a colorful location for DRACULA. (RIGHT) Although Director John Badham is wearing an American flag on his jacket sleeve in this photograph and despite the fact that he has lived most of his life in America, he was actually born in England, so the DRACULA filming provided a nostalgic sojourn in his home country. (BELOW) Two of the sets built in the studio in London depict facades of Dracula's (rented) castle, complete with graveyard. The real Dracula castle is at Bran in the Transylvanian (Romanian) countryside.





(LEFT) Between takes on the set at Twickenham Studios, London. (RIGHT) Using a universal director's gesture, Badham visualizes a composition for a two-shot of DRACULA (Frank Langella) and his latest pretty blood donor. (BELOW LEFT) A real three-masted sailing vessel cuts through the water in a scene from the film. (RIGHT) A full-scale wreck of the vessel was mounted on the rocks of the rugged Cornwall coast. This current DRACULA is a Walter Mirisch-John Badham Production for Universal Pictures. It was photographed by Gil Taylor in Panavision.



But films have always been the steadiest diet for Dracula devotees.

Bela Lugosi made the running, never quite able to master the English language. When he died in 1956, he lay in state in full Dracula regalia as old friends filed by.

Christopher Lee in a series of sinister British-made movies gave the subject a welcome transfusion.

Betwixt and between, the inevitable "Blacula" and even a one-shot David Niven characterization which had the debonair Count "drinking blood from a wine glass, having replenished his cellar from climbing accidents and other fatalities."

The nearest direct descendant of Dracula appears to be a Count Alexander Cepesi, Romanian aristocrat who has lived since '47 in Istanbul, where he operates a private blood bank!

DRACULA The Film

Principal photography began Monday, October 16, 1978, in Tintagel, Cornwall, England on the Walter Mirisch-John Badham production of DRACULA for

Universal Pictures.

Tintagel, birthplace of King Arthur, has 300 feet of sheer cliffs and a history that dates from the year 500. Winds from the Atlantic are so strong that even the gravestones have tiny buttresses.

Count Dracula himself, the ultimate fantasy figure, is portrayed by Frank Langella, fresh from four hundred performances in the Hamilton Deane—John L. Balderston stage play that had Broadway critics and audiences by the throat.

Number one make-or-break New York theatre pundit Clive Barnes has no doubts. "Frank Langella is one of our few great actors." The rest of the reviewers also dusted off superlatives that had almost gone out of style, "Stunning, sensual, beautiful, majestic, flamboyant, spectacular, byronic, unbeatable."

DRACULA producer Walter Mirisch: "I truly had no idea what to expect. But he had created a completely different character, one with charm, sex appeal—and most important of all, he endeared himself to the audiences. I decided right then to make the film."

The Mirisch Corporation and Universal Pictures commissioned a brand new screenplay from writer W.D. Richter, then turned to the task of choosing a cast and crew to match the scope of the subject.

Laurence Olivier, Donald Pleasence, Kate Nelligan, Trevor Eve, and Jan Francis complete casting for the principal roles. The technical cadre has a tangy international flavor, and a careful mix of vintage skills and fresh faces.

The brief to Cinematographer Gil Taylor, Production Designer Peter Murton and Costumer Julie Harris called for a color range of muted blacks, greys and white, which director John Badham predicts will give his film the romantic feel of those original period pen and ink drawings.

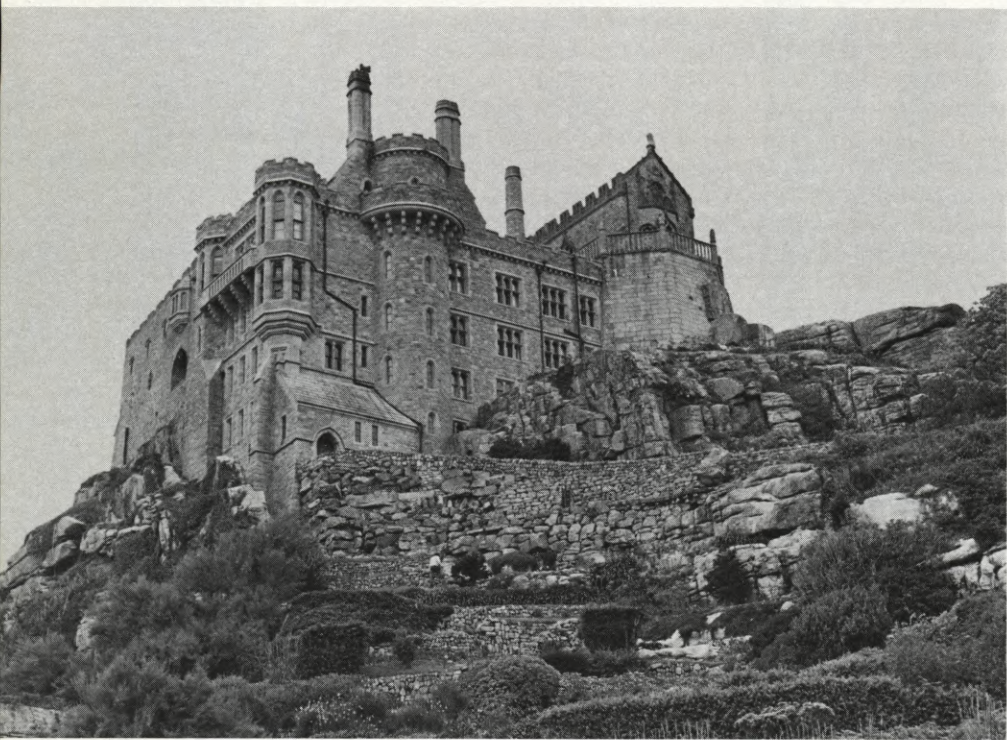
Mirisch-Universal rounded off their team with a trio of top American imports.

The Music Man is John Williams. Visual effects were in the able hands of Albert Whitlock, and Roy Arbogast was charged with supervising Special Effects.

Walter Mirisch, John Badham and As-



Lord Laurence Olivier, playing the role of Dracula's nemesis, Professor Abraham Van Helsing, adds an extra touch of class to the production. (BELOW) The filming included extensive location work along the Cornish coast, including such historic spots as Tintagal (site of King Arthur's court) and Saint Michael's Mount. In all, forty major interior and exterior sets were involved in the production.



sociate Producer Tom Pevsner set themselves a challenging twelve-week shooting schedule. A crew that nudged the 200 mark worked during the very biggest builds and a total of forty major interior and exterior sets including considerable location work at Saint Michael's Mount and Mevagissey in the far west of England.

The former was dedicated to St. Michael after the Archangel appeared to some local fishermen in the 6th century.

Later a Benedictine Monastery was established on the site by Edward the Confessor.

Saint Michael's Mount is a 21-acre rock mass accessible only by causeway at low tide. Rebels once held out there against a Tudor King and Royalists fortified it for a Stuart. Almost without exception travel books list the Mount as one of the most romantic sights in all England. When not drenched in seasonal sea mist you can see half of County Cornwall from the

summit.

Mevagissey, first mentioned in 1400, reached the height of a boat-building/fishing prosperity in the 19th century. Famous for its "Mevagissey Ducks"—local pilchards cured in rock salt, packed in casks and shipped to Italy and the West Indies, town records show a thriving export business totalling 4,000 tons as early as 1724.

In addition the production was spread over four stages at Shepperton Studios, Middlesex, another two at Twickenham on the outskirts of London. Logistics demanded an almost military precision.

On the set of DRACULA, during filming at Twickenham Studios in London, Director John Badham (whose previous assignment had been SATURDAY NIGHT FEVER) was interviewed by *American Cinematographer* Contributing Editor David W. Samuelson, as follows:

QUESTION: In discussing the making of a film about Dracula in England, I'd like to ask you first: "What makes this DRACULA different from any other DRACULA?"

BADHAM: The key element is the actor, Frank Langella, who plays DRACULA, a very appealing, very sexy guy. He gives a whole new interpretation to the character of DRACULA—more sympathetic and sexual. Most of the other Dracula films that have been made are fairly badly photographed and badly done all around, mainly because they did not have the time or the money. But in engaging a first-class cinematographer like Gil Taylor and a cast consisting of Lord Olivier, Frank Langella, etc., not to mention some smashing sets and costumes, we have a very special film.

QUESTION: From your point of view, having recently come from SATURDAY NIGHT FEVER, it must be a very big switch for you in terms of styles and working situations, or was it? Is it just another problem that the director has to cope with?

BADHAM: It's totally a different style but that's what is exciting about it for me. I always try to do pictures that are as opposite in style as possible to what I have just done, because its boring doing the same old thing. You are not going to catch me doing a horror picture for quite a while—not because I don't like them—but because I want to do something different. My shooting style on this is quite different from SATURDAY NIGHT FEVER—and quite different from other films of mine. Each piece that you are doing needs its own individual style.

QUESTION: In fact you were born in England. You have an English passport, they tell me. Is this the first time that you have filmed over here or have you done this before?

BADHAM: It's the first time that I have spent any time here since I was little and so it's a lot of pleasure for me to be able to work with British crews.

QUESTION: You are working with Gil Taylor in lighting—who of course did STAR WARS. He had that very large set for Dracula's castle—a very beautiful set to cope with. What were your instructions in terms of getting the most out of the set and how did you balance the importance of the set as against other considerations which, as a Director, you would hold very important?

BADHAM: We knew we had a set that was quite large and filled with enormous detail. We would have wasted a great deal of money if we couldn't see it. On the other hand, we're playing intimate scenes there requiring us to be close on the actors. Now you can either see the set or you can see the actors up close. Doing both is quite tricky. First of all, you must get the camera far enough away from the set to get a sense of the size. Secondly, you mustn't get too close on the actors or you won't carry focus on them and the set. Thirdly, you will want to use wide angle lenses to give you as much depth of field as possible. Gil's lighting now had to create the mood of DRACULA'S castle as well as picking out the wonderful detail put there by Peter Murton, the Production Designer.

QUESTION: I understand that you have been experimenting with filming by laser light for a special sequence. Would you like to say a little bit about those problems?

BADHAM: Well, the possibilities of the laser light as a special effect are wonderful and very exciting. We are just scratching the surface and finding out a few things you can do with lasers.

QUESTION: In what manner did you use it and how can you use a very modern technology in a period setting?

BADHAM: The same way that you use zoom lenses in a period setting or 5247 stock or camera cranes or the Panaflex camera, for that matter. Those are all quite modern bits of technology and there is no reason why a laser should be excluded from it. We were using it as part

of a fantasy montage to which it lends itself beautifully. Basically, we were throwing the laser down the length of a stage and shaping it into a long cone-like tunnel and filling that tunnel with smoke which helped the laser to be able to photograph. You must project the laser onto something or through a medium such as smoke or it won't be seen.

QUESTION: How did you set up the laser in relationship to the camera?

BADHAM: The laser was at one end of the stage and we laid 80 feet of track going straight away from it. We lined the camera and the lens up exactly—so that as we dolly down the length of track we were always directly in line with the laser beam. Then we spread the beam out into a cone. Now we could spread smoke around in order to see the beam and be able to dolly through the tunnel we had made. There is no danger to the operator if you keep the light spread out. If you pin-point it down and look right into the source, you could get a retina burn. But we were very careful with it and, in fact, it is not really dangerous. But it does the most remarkable things with highlights to hair, to faces, to skin. It's a wonderful lighting device—I'd like to try working with it as front lighting—we were using it as back lighting. I wanted to see what happens when you put it directly on actors' faces as a key light—because there is a vibrating that goes on in the laser itself—a very high speed vibration that is noticeable in the way that a beaded movie screen has a bit of vibration, little tiny beads kicking life all over the place. When you put your hand into the

laser beam you can see a sparkling effect. It really is quite wonderful.

QUESTION: What type of laser were you using?

BADHAM: I know it was a fairly low-powered one—only 2 kilowatts or so. It's the sort that is frequently used for rock concerts and laserium shows in planetariums.

QUESTION: What color was it?

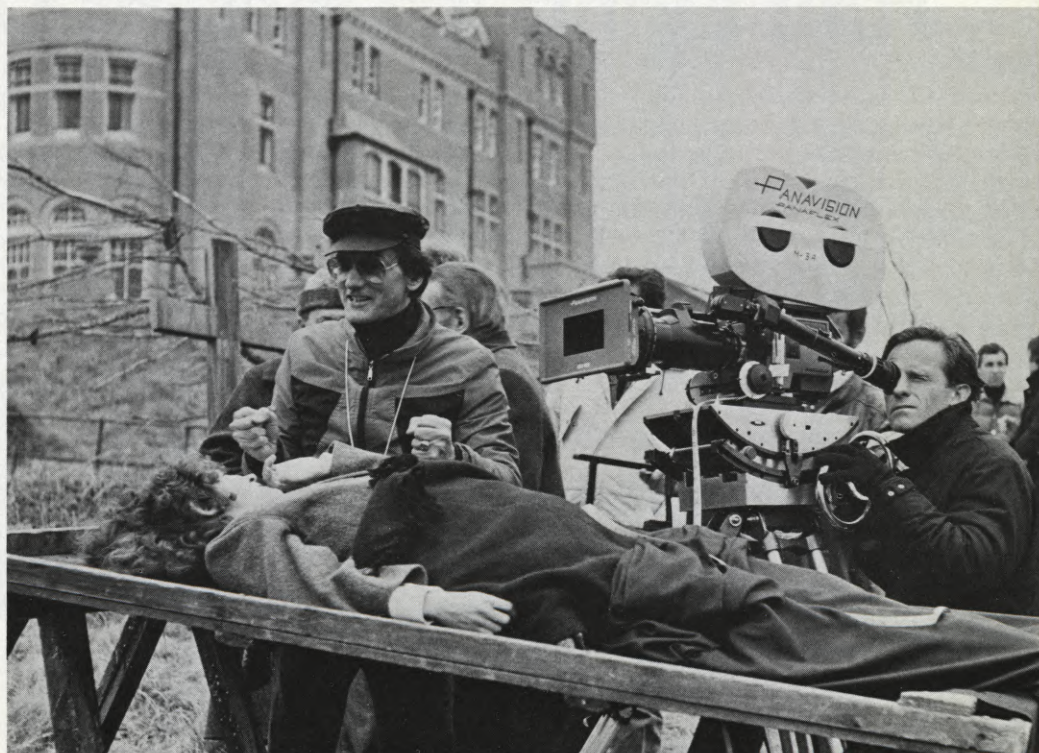
BADHAM: Red. We settled on red because the sequence has a lot to do with blood. It's rather obvious, but green just seemed to be wrong!

QUESTION: If you were using this only in a back-lighting situation, what was the action that you were tying it in with?

BADHAM: It was a love scene—so we were shooting close two-shots and profiles of our actors kissing and caressing. There were various kinds of long shots, close shots, dolly shots, mostly in silhouette—though we were able to put a little bit of light on the front of their faces, to pick them out of the silhouette at times when we wanted it. But we found for our purposes that if we lit the actors too clearly it made everything too real and took away a bit of the fantasy that is created by the laser. It began to look like back projection and the actors stood out too clearly from the laser effect. You might as well just be doing back projec-

Continued on Page 621

Director John Badham gives instructions to a near-corpse on location (a far cry from Badham's previous assignment, SATURDAY NIGHT FEVER). Though portraying Dracula as a sensual romantic, the film has something for everybody—including: a sword that goes straight through a man's body, a wolf that tears somebody's throat out, and a lady who gets stabbed through the chest (with lots of spurting blood).





Color still from "Norma Rae", filmed by John Alonzo, ASC entirely with HMI light.

HMI Light. It's Instant Daylight.

No filters, no fooling. Plug in any HMI fixture and you're producing daylight—light that reads 5600° Kelvin.

The OSRAM HMI lamps are available now in five different wattages: 200, 575, 1200, 2500 and 4000. A number of different manufacturers offer fine flood-lights and fresnels and many rental houses have both fixtures and bulbs in stock. There's a list on the opposite page.

All the OSRAM HMI bulbs share two important characteristics. First, they give you Kelvin readings for film

balanced for daylight. Second, they offer incredible energy efficiency, on the order of 85-100 lumens per watt. You would need 7,000 watts of tungsten-halogen light, filtered for daylight, to get the equivalent lumen output of a single 1200 watt HMI source!

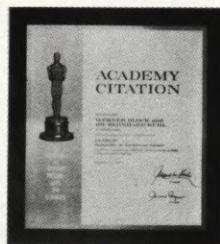
Try HMI on your next feature film, commercial or documentary. For additional technical information, check with us at our toll-free number, or with any of the suppliers listed on the opposite page.



Macbeth
Sales Corporation

Subsidiary of OSRAM Corp.

P.O. Box 7062
R.D. #3, Jeanne Drive
Newburgh, New York 12550
Tel: (914) 564-6300; Telex: 926467
Toll Free Tel: (800) 431-9980



1978 ACADEMY CITATION

The inventors of the OSRAM HMI bulb, Dr. W. Block and Dr. B. Kühl, were honored by the Academy of Motion Picture Arts and Sciences with a Citation For Technical Achievement.

Where to find HMI Lights

(Partial list)

● Fixture Manufacturers

L.T.M. Corporation of America
21200 Nordhoff Street
Chatsworth, CA 91605
(213) 998-6026

Kliegl Bros., Inc.
3232 48th Avenue
Long Island City, N.Y. 11101
(212) 786-7474

Mole Richardson
937 N. Sycamore Avenue
Hollywood, CA 90038
(213) 851-0111

Strand Century, Inc.
5432 W. 102nd Street
Los Angeles, CA 90045
(213) 776-4600

Strand Century, Inc.
20 Bushes Lane
Elmwood Park, N.J. 07407
(201) 791-7000

● Bulb Distributors

Barbizon Electric Co. (N.Y.)
(212) 586-1620

Victor Duncan, Inc. (Chicago)
(312) 321-9406

Victor Duncan, Inc. (Dallas)
(214) 369-1165

Victor Duncan, Inc. (Detroit)
(313) 589-1900

Preferred Distributors (L.A.)
(213) 461-4201

● Rental Houses in L.A.

Acey Decy
(213) 766-9445

Cine-Mobile
(213) 764-9900

Cine-Pro
(213) 461-4794

Cine-Video
(213) 464-6200

F & B Ceco
(213) 466-9361

Keylite Rental Corp., Inc.
(213) 469-2987

Leonetti Cine Rental
(213) 469-2987

Mole Richardson
(213) 851-0111

P.S.I.
(213) 469-2704

● Rental Houses in N.Y.

Ferco
(212) 245-4800

The Camera Mart
(212) 757-6977

F & B Ceco
(212) 974-4600

General Camera
(212) 594-8700

Charles Ross
(212) CI 6-5470



Macbeth
Sales Corporation
Subsidiary of OSRAM Corp.

P.O. Box 7062
R.D. #3, Jeanne Drive • Newburgh, N.Y. 12550
(914) 564-6300 • Toll Free (800) 431-9980

INDUSTRY ACTIVITIES

OSCAR-NOMINEE WILLIAM FRAKER, ASC, ELECTED PRESIDENT OF ASC

The Board of Governors of the American Society of Cinematographers elected William A. Fraker, ASC, two-time Academy Award Nominee, president of that body on Monday evening, April 2, 1979.

Fraker succeeds Winton Hoch, who passed away on March 21, 1979.

Bill Fraker was elected to membership in the American Society of Cinematographers in February of 1967. Some of his credits at that time were *GAMES*, *THE FOX*, *THE PRESIDENT'S ANALYST*, *FADE IN*, *ROSEMARY'S BABY*, and *BULLITT*. He is a graduate of Cinema from the University of Southern California and was a film editor for various television companies before being admitted to the union. He received an Academy nomination for *LOOKING FOR MR. GOODBAR* in 1978 and a nomination this year for *HEAVEN CAN WAIT*.

LASZLO KOVACS, ASC, TO CONDUCT SUMMER WORKSHOP IN LIGHTING AND FILM PRODUCTION

Hollywood cinematographer Laszlo Kovacs, ASC, will conduct an intensive workshop this summer dealing with the motion picture image, lighting, and production techniques, July 1 through 8, at the Maine Photographic Workshop in the small harbor village of Rockport, Maine. Laszlo will spend a full week talking and working with fellow filmmakers, solving technical and artistic problems dealing with the photographic image. There are daily lectures, screenings, location set-ups, test shootings, rushes, lighting demonstrations, critiques, and lots of dialogue. Participants will tackle daily production and location problems, set up lights, select camera angles, and expose film to test the controls available to filmmakers. Evenings there are screenings, critiques, student films, selected films, and one of Laszlo's feature films—all aimed at stimulating dialogue dealing with the photographic image.

The content of the workshop covers a variety of technical areas, including the frame and composition, camera movement, lighting, color controls and filtration, and processing, as well as advanced production problem solving. Other areas covered include camera operation, lenses, formats, stock selection, pushing and flashing.

Each day's schedule begins with a review and critique of the "rushes" from the previous day's location assignment and test shooting. This is followed by an informal lecture by Laszlo on a specific area of image controls. Each afternoon (and some evenings), there is a variety of outdoor and interior lighting and production problems assigned. This allows the participants to actually begin testing new ideas, trying out some of the concepts covered in lectures; set up lights, and begin filming test exposures. Both 35mm still and 16mm motion picture color film is shot, processed, and reviewed daily. Each lighting problem and location set-up is critiqued by Laszlo, who makes suggestions, demonstrates solutions he might employ, and discusses technical options with the "crews" on each set. Locations include both interiors and exteriors of churches, homes, school rooms, motel rooms, cars, plus day-for-night scenes and actual night shooting on city streets.

Evenings provide additional input through screening new films, Laszlo's feature films, and films brought by students, followed by questions and discussion.

This workshop provides filmmakers a rare opportunity to spend a week in a quiet seacoast village meeting, talking, and working with their peers from around the world, acquiring new technical skills and developing a finer appreciation of the photographic image. This is the third workshop in cinematography MPW has offered in recent years. Others have been led by Conrad Hall, ASC, and Vilmos Zsigmond, ASC.

Enrollment is limited, and always full, so early application is recommended. Costs are: Tuition—\$250, lab fee—\$40. There's an airport nearby and housing is available through the Workshop. For a complete brochure on this and other photography courses at MPW, call or write: The Maine Photographic Workshop, Rockport, Maine 04856. Phone (207) 236-8581.

BOLEX ACCESSORIES

- 24-Frame Sync. Camera motor 115V
- Var. Speed Battery Camera motor 24V
- 400-ft. Magazine w/400' counter in camera
- Interval timer—Range 1½ sec. to 36 min.
- Animation motor. Fits single-frame shaft

Write for Bolex Accessory Catalog

STEVENS ENGINEERING CO.
P.O. BOX 1605,
NEWPORT BEACH, CA 92663

OF VAMPIRES, CASTLES AND MECHANICAL BATS

Production Designer and Special Effects Supervisor tell how their specialties help to build the unique mystique of the Dracula legend

As Production Designer on DRACULA, Peter Murton comes by his calling naturally, since male Murtons have been in the motion picture business for well over half a century. Peter Murton's father, Walter Murton, was already a name designer by 1919. His son Simon, an assistant in the DRACULA art department, now makes it a three-generation dynasty.

Peter himself set out to be a yacht designer, captivated by the shapes and the idea of turning timber into a living thing. World War II soon shifted emphasis in the boatyard at East Cowes, Isle of Wight, to such functional fare as Naval Whalers and landing craft.

He dovetailed his first three years in the film industry with part-time architectural studies, a training that has stood him in good stead on many complex "hardware" pictures, including three "Bonds".

In drawing up his initial designs, he always takes heed of the problems of the many other production departments feeding off his work: "Because they turn out to be our problems in the end."

He has deliberately moved away from previous DRACULA interpretations, including Edward Gorey's splendidly Gothic stage sets. The John Badham/Peter Murton DRACULA has a muted flavor to its settings. "It is far easier to extract the brighter colors from a film in the design stage rather than having to play around with the end result in the laboratory."

For the past three years Peter Murton has been Chairman of the British Guild of Film Art Directors.

During the filming of DRACULA at Twickenham Studios, Murton was interviewed by David Samuelson as follows:

DAVID SAMUELSON: Peter, just remind me of the films that you have done in the recent past.

MURTON: Well, working backwards I was on a six-hour special TV production called *IKE, THE WAR YEARS* which will be screened in the United States later this year—directed by Boris Segal—and photographed by Freddie Young. Before that I was on a picture called *DEATH ON THE NILE* preceded by *THE EAGLE HAS LANDED*. I also designed *THE MAN WITH THE GOLDEN GUN* and art directed several other James Bond films. Coming back to Twickenham where we are shooting this big set for DRACULA is rather like coming home,

because I built the sets for RULING CLASS here which were large but nothing like this one. This is the major interior set of the movie and is DRACULA's home—Carfax Abbey as it is called. I wanted to get away from designing the conventional staircase hall with a gigantic staircase down which everybody seems to fly, fall or do anything else like that, so instead of building two or three sets—like a dining room, a library and a hallway—I conceived it all as one set so that we can spread the cost, which is quite gigantic. This set will cost, in the final outcome, more than £100,000. So I convinced the Director and the Producer that we could do this all in one stage and I think it will work out very well.

QUESTION: How long are they scheduled to shoot on this stage, do you anticipate?

MURTON: Well, they are scheduled for quite a short time—about a week and a half I should think. Then we have to say goodbye to it and tear it all down and wait for the next one to come along.

QUESTION: How long did it take you to build it?

MURTON: I started doing the designs for it way back in August of last year—

On the huge "Stage H" at Shepperton Studios outside London a full-scale replica of the three-masted sailing ship featured in DRACULA was set up for the filming of the storm sequence, complete with dump tanks and wind machine. The same "model" was also set atop jagged rocks on the rugged Cornwall coast for sequences to be filmed after the shipwreck.

that's five months ago—and then the construction started about eight weeks before we shot this. But there was a lot of design work and modelling that went into it before that as a sort of gentle build-up to the final assembly.

QUESTION: Looking around us, there is a great deal of sculpture—particularly at the library end. Would you like to say something about this?

MURTON: This was all completely original design. People have asked where I went to find this decoration so that I could take casts of it. There is not one piece of actual moulding and detail sculpture here which you could ever find anywhere else. This is something which was designed and sculpted, cast and erected, purely for this set. I wanted it to be a mixture of hell and Draculaism—so that one got away from the typical horror movie thing and into the realms of fantasy. Here is a house which Dracula is meant to be renting, but in fact I could see that he knew that he was coming here. It was a pre-conceived thing and he, in some fantastic way, brought his image into this house. We have extended the set quite a lot by building forced perspective staircases and galleries and painted scenes beyond the main set itself and this gives the illusion



of almost doubling its size. The set at the moment is about 30 feet high by 63 feet wide by 118 feet long—so it's rather a large set to work in, thank goodness. Only the complete entrance wall had to be made wild to enable the Sam-Mighty crane to be used in the set.

QUESTION: When you have perspective views—presumably then you've worked out some of the camera positions well in advance. Isn't that so?

MURTON: There is always the ideal shot for any designer on his particular sets and I talked a great deal with the Director—John Badham—and we came to the conclusion that there were certain basic shots on this set, and there aren't any straight lines involved in the perspective so that one could cheat quite a lot on it, such as moving from side to side and getting nearer to it without it being apparently out of geometrical line.

QUESTION: It's a very tall set, what format are you working in and are you getting full value of the height of the set?

MURTON: We are working in the Panavision 2.35:1 anamorphic format and DRACULA being a very tall man—6 ft. 4 in. or thereabouts—one tends to look up to him a good deal of the time and there is a great play between the raised area of the set and the top of the staircase and shooting up to that made full use of the height. In order to cope with the long shots, tilting up slightly, we need all this height at the ends of the sets not so much in the middle, but one is wasting only about four or five feet in the center of the set and was seeing every inch of the ends.

QUESTION: The aging of a set like this is an immense part of the art—it really does look very old. How do you go about that?

MURTON: Well, this really starts right at the conception of the design, but it begins to come to life when you start modelling the stonework, you have to make a selection of special models and you have to make allowances for this in the construction, such as leaving a deeper thickness for the plaster. All carvings and mouldings are pre-aged in the moulds and after the paint finish is satisfactory you need not age on top of it apart from cobwebs and dust and general desecration.

QUESTION: Apart from the wear that is put into the set as it is constructed, like the plaster that is worn away, the

painting and the cobwebs and the dusting and the dirt give it a patina of age which many sets just don't have. One has seen magnificent sets, but they haven't got this used look about them. You don't see street scenes sometimes look as though there has ever been mud or dogs along the street. This set has a patina about it. Would you like to say a little bit about how you get that?

MURTON: I could go into the sort of processes of getting it—but a lot of it is how one actually uses the available materials and craftsmen. We have cobweb machines, we have dust, we have dead vines and we have all these dead things available to us, but it all really hangs on the men that you employ to actually put it in place and make sure they don't go overboard. It's a gentle build-up process of putting the first layer of dirt on and the cobwebs. It really is a careful sort of building, whereby you start off with a main layer and put on another and then another layer. In the end you may find that some areas need to be gone over three or four times in order to get that depth of aging. In a set like this the spaces are the biggest problem. Cobwebbing and age in the open areas are very difficult—so we have decorated it as though the house has been taken over by creepers. You know how they creep in and sort of find their way right through everything. We have slightly overdone it in order to get it to show on film. Then we put cobwebs on top of that plus dust and then some more cobwebs in special places and then we go around and burn out the cobwebs with a special liquid that I have found which eats them away very gently—so you don't get that solid cobweb look that you get in some movies. Then we treat it with dust again so that it's this sort of layer-upon-layer, rather like a painter would put on glazes to get a depth of quality. This is the same principle on which we work.

I have had a very good team of prop men—led by Peter Young my set decorator who really has done a marvellous job. If possible I always work with the same team and Peter has worked with me on several pictures before—namely, *RULING CLASS* which had some similar problems attached to it. One learns by experience with these things and you know how far you can go without making it look too bizarre.

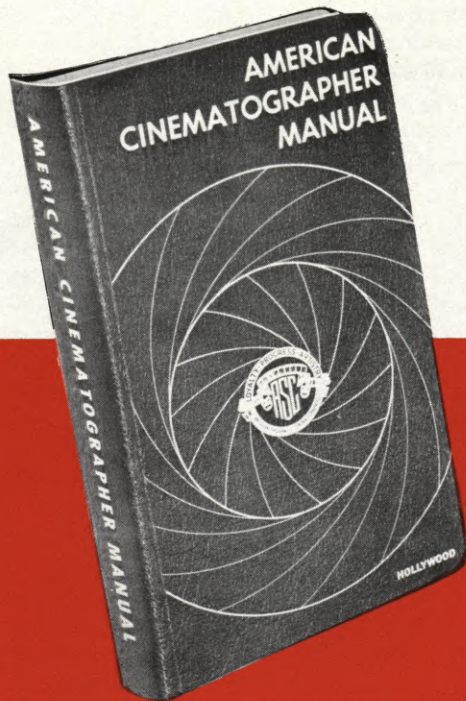
QUESTION: In the end, of course, the important thing is the way that it is photographed. At what stage were you in consultation with the Director of Photography and how have you worked with him?

MURTON: I believe in working very closely with him. When I have done the original design sketches and had them approved by the director—in this case John Badham—we then talk between ourselves and bring in the cameraman at that stage because I already have a pre-conceived idea of where I am going to build the windows or where the light source should come from. So the cameraman comes in at a very early stage and even when the set is half-built I like to walk around with him, let him see where he can put his lights, where he can get an effect—so that he is really in fairly close touch with it at most stages. In this particular case we had a whole day's pre-lighting session when Gil Taylor and I talked about the quality of the detail, because one can lose an awful lot on a set like this which is a mass of detail. You have to have that happy balance of moonlight or candlelight. All of these things Gil gets magnificently, but he loves to (like I do) work as a team in this sort of thing because one conceived the set, and it would be awful if one didn't think that one could call on the cameraman and he also call on the production designer to work together on a thing like this. So the final outcome is that I have a set looking as I designed it and Gil can light the actors—which is obviously the most important part of any scene. That happy combination of using the set to its full advantage and having the actors lit beautifully within it is really what we are after—and constantly are trying to achieve.

QUESTION: We have many film schools which are teaching the arts of film directing and, to a lesser extent, cinematography and sound recording—but I am not aware of many film schools that are catering for future art directors. How do you believe that youngsters should learn this craft and what background should they have, and what training, before they come into the industry?

MURTON: I am a great believer in really learning one's craft on the shop floor, as it were. The fact is that you can go and have an architectural training—like I had—and you use a quarter of it, and the other three-quarters you use so little that you wonder whether it was worth spending four or five years at architectural college. In the final outcome you do find it very useful—but I don't think there is any substitute for really coming into the industry at a young age, as a draftsman, and really seeing what happens within a studio—because it is the only way that you find out the problems of film design

Continued on Page 584



MOST COMPREHENSIVE COMPILATION OF CINEMATOGRAPHIC DATA EVER PUBLISHED !

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.

FOURTH EDITION

AMERICAN CINEMATOGRAPHER MANUAL

COMPILED AND EDITED BY
TWO VETERAN CINEMATOGRAPHERS

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

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!

THE AMERICAN CINEMATOGRAPHER MANUAL

P.O. BOX 2230

4TH EDITION

HOLLYWOOD, CALIFORNIA 90028

Please send _____ copies of the AMERICAN CINEMATOGRAPHER MANUAL @ \$18.50 each, plus \$1.00 handling fee. No C.O.D.'s.

NAME.....

STREET.....

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

California residents please remit 6% Sales Tax (\$1.13 per Manual). Foreign Buyers please pay by International Money Order or U. S. Funds.

Cinema Products' own

Ultra T ultra-fast prime lenses for 16mm cinematography.



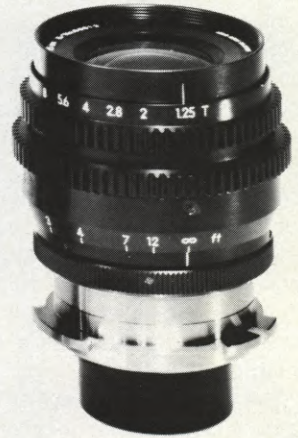
9mm (T1.35)



12.5mm (T1.25)



16mm (T1.25)



25mm (T1.25)

Especially designed to meet our own rigorous specifications for 16mm cinematography, and exclusively manufactured for Cinema Products, *Ultra T* high-speed lenses are the finest 16mm prime lenses available today. Regardless of cost!

Cinema Products' ultra-fast *Ultra T* lens series consists of four prime lenses: 9mm (T1.35); 12.5mm (T1.25); 16mm (T1.25); and 25mm (T1.25). *Ultra T* lenses are remarkably suited for filming night-for-night with available light, providing extremely sharp definition and high resolution, with excellent contrast, good depth penetration and well balanced color saturation... which makes them ideal for all professional 16mm production applications.

Outstanding design features include:

- Helical focusing mount utilizes an intermediate, fine-pitch, close-tolerance brass ring for *aluminum-brass-aluminum* thread contact for minimum wear characteristics and *zero focus shift!*
- Focus and iris rings with integral gears for motor drive operation.
- Iris ring marked in "T" stops only. Optional free or click-stop operation.
- Precisely calibrated focus scale is removable to permit change from footage scale to optional metric scale.
- Precision spacer shims under all mounts permit "fine tuning" by user, if desired.
- Easy interchangeability between CP mount and other lens mounts.

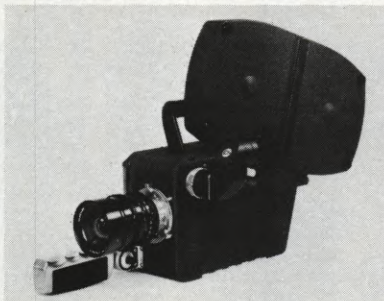
Ultra T prime lenses are presently available in CP, Arri B and Eclair CA-1 mounts. *Ultra T* lenses may be purchased singly or as a set of four.

For further information, please write to:

Cinema  products
CORPORATION

Technology In The Service Of Creativity

2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 • (213) 477-1971 • Telex: 69-1339



Ultra T 9mm (T1.35) prime lens shown with "new generation" CP-16R/A 16mm single/double system sound camera.

Ultra T 25mm (T1.25) prime lens shown with "state-of-the-art" GSMO 16mm camera (with 400' quick-change cassette-type coaxial magazine), CP orientable viewfinder and Universal 16FX fluid head tripod.

SIX DECADES OF "LOYALTY, PROGRESS, ARTISTRY"

After 60 illustrious years, the American Society of Cinematographers is still dedicated to the same high ideals upon which it was founded

Sixty years ago a small but dedicated group of Hollywood's leading cameramen formed the first organization in the motion picture industry to be devoted exclusively to furthering and honoring high professional achievement. Thus, it was early in 1919 that the American Society of Cinematographers was founded. The purpose of the new organization was to advance the art and science of cinematography and to bring together cameramen so that they could exchange ideas, discuss new techniques and promote the motion picture as an art form. This concept is still as much alive today as it was more than half a century ago when the A.S.C. was born.

The American Society of Cinematographers is not a labor union or a guild, but an educational, cultural and professional organization. Membership is by invitation only, to those who, "actively engaged as a Director of Photography," have demonstrated outstanding ability. Not all Hollywood cinematographers can place the now familiar initials "A.S.C." after their names. In a sense, the A.S.C. membership roster is as exclusive as that of the legendary London Clubs, for it has become one of the highest honors that can be bestowed upon a professional cinematographer—a mark of distinction and prestige.

The need of cinematographers for an organization conducive to their mutual benefit grew out of the early disputes

over the Edison patents—the so-called "patents war." Thomas A. Edison, inventor of the motion picture camera, tried to prevent unauthorized producers from infringing his camera patents by licensing the use of them. The producers licensed by Edison got together and formed the Motion Picture Patents Company, headed by J. J. Kennedy. Independent producers who were not licensed correctly branded this a "trust."

Kennedy was a tough fighter and used private detectives, spies and even thugs to seize or destroy the cameras of the independents and to run them out of business. It was not long before the independents—and members of the "trust"—were distrustful of everyone. All camera equipment was closely guarded and anything new was top secret.

It was a situation not calculated to further any progress in motion picture art and science.

The cameramen had no interest in the fights of the producers but they were interested in better cameras and more efficient lighting equipment. In 1913, three young cameramen at the Edison studios, in the Bronx, decided to do something about it. They were Philip E. Rosen, Frank Kugler and Lewis W. Physioc. Each was earning \$18.00 a week. None received screen credit or other artistic recognition; they and all other cameramen were regarded simply as technicians. Rosen, Kugler, and Physioc be-

lieved that if cameramen formed a sort of fraternal group they could establish and maintain professional standards and gain at least some recognition as creative artists.

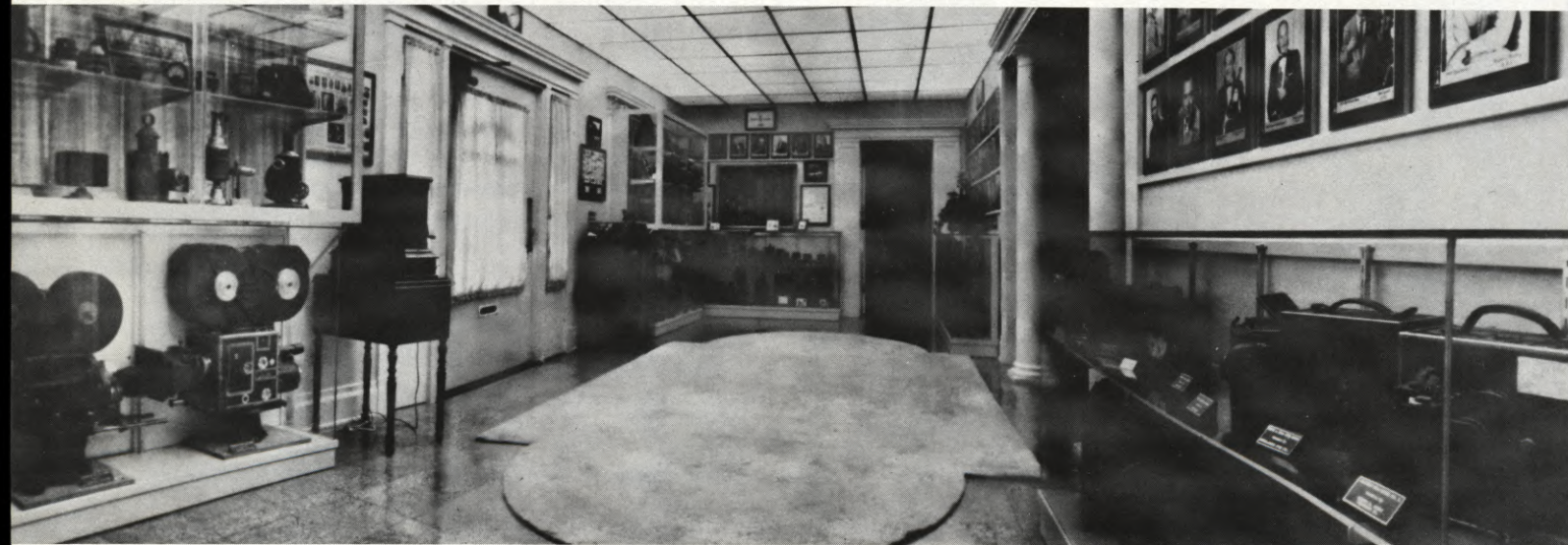
It was not until October 15, 1915, that the "trust" was declared illegal by the United States Supreme Court so it took real courage in 1913 to risk being black-listed. According to Physioc they discussed their problems a long time before they decided to act.

"We had no thought of a union, or of using the organization to obtain higher pay" Physioc recalled. "Our original purpose was to get cameramen to exchange ideas and thus encourage manufacturers to make better equipment, especially lighting equipment." Physioc, incidentally, was then working directly under Edison trying to combine motion pictures with the sound of phonograph records.

Finally the three Edison cameramen acted—secretively. They mailed unsigned notices of their purpose to all the cameramen they knew to be working for both the "trust" and the independent companies. Those interested were asked to reply to a certain address in the old Tribune building.

Enough answers were received to make a meeting appear to be the next step, so one was announced. It was held in Heinebund Hall, at 34th Street and Eighth Avenue. Thirteen men appeared. No one seemed to be in charge but after a

Upon entering the A.S.C. Clubhouse in Hollywood, a visitor finds himself in the A.S.C. Museum, which contains examples of all types of motion picture cameras and related cinematographic equipment. Students and historians of the motion picture often visit the Museum to study and examine the many rare exhibits on display. The door at the rear leads to the Walt Disney Room, dedicated to the famous filmmaker and containing Disney memorabilia.



few anxious moments, a waiter appeared and handed each man a slip of paper on which these words were written: "This meeting is yours."

Then things started to happen. A temporary chairman was appointed from the floor and the meeting got under way. Officers were elected—Rosen was voted in as President—and the Cinema Camera Club was born.

For the first six months the Club's meetings were held secretly, but the feared opposition of the producers never materialized. The membership grew rapidly and an office was secured in a building on Columbus Circle. By 1915 there were 120 members and the Cinema Camera Club moved to the Times Building.

About the same time all of this was taking place in the East, a small group of cameramen in California formed the "Static Club," so named because of the static electricity which plagued early cameramen by marking exposed film. There was less need for secrecy on the West Coast, because 3000 miles separated it from the eyes of Kennedy and his "trust." Early in 1913, Harry H. Harris, a cameraman working for Universal, was elected president. From the beginning the Static Club established membership reciprocity with the Cinema Camera Club in New York, and eventually adopted the name Cinema Camera Club.

By 1916 both Cinema Camera Clubs were publishing magazines. The Eastern edition was called "Cinema News," and the California "Static Flashes." Both were essentially house organs giving information on what pictures the various members were working on.

In 1918 Philip Rosen was elected president of the New York Cinema Camera Club for a third term but had to resign in order to accept an assignment in California to photograph George Loane Tucker's *The Miracle Man*, the picture that made Lon Chaney a star. He soon learned that the California Cinema Camera Club was waning. Its president, Charles G. Rosher, asked Rosen to head a reorganization committee. As a result of his experience in New York, Rosen



A photograph of Hollywood taken from the hill just above present-day Franklin Avenue and North Orange Drive in 1905 shows the palatial home in foreground (see arrow) which ultimately became the Clubhouse of the American Society of Cinematographers. (BELOW) The same view photographed in 1957 shows Hollywood much changed, with the A.S.C. Clubhouse sporting a new coat of paint.



had come to the conclusion that there should be a national organization, rather than two separate and loosely affiliated clubs, and that such an organization should be a fraternal society with very exacting membership requirements. Rosen believed that in order for the organization to have stature, membership ought to be by invitation only to those cameramen who had clearly demon-

strated their professional ability.

On a Saturday evening, December 21, 1918, Rosen and his reorganization committee met at the home of William C. Foster. A new constitution was drawn up which stipulated that membership should be by invitation only. A board of governors was formed from the ten members of the reorganization committee and the five
Continued on Page 596

"We use Tiffen filters exclusively at Opryland Productions. We've tried others, but have always returned to Tiffen."



Truett K. Smith

"Tiffen optical filters have enhanced our television production capabilities considerably, here at Opryland Productions.

"We are presently using Tiffen filters exclusively in our television cameras. We have tried other types, but have always returned to Tiffen for our needs.

"We have seven RCA TK-45 color cameras, two RCA TKP-45 cameras, and one RCA TK-76 color camera. Each camera presents us with its own unique filter requirements, and Tiffen filters have met each requirement successfully. The TK-45 cameras have an eight position filter wheel. The filters screw into each of the eight positions. Tiffen offers filters *already mounted in the proper threaded mounting ring*. There is no hassle with trying to buy a filter from one company and a mounting ring



from another and *then* hoping the ring will fit the filter. Tiffen supplies the complete package!!

"The same unique situation applies to the TKP-45. It requires an unusual rectangular filter in a custom slide-in mount. Once again, both are available from Tiffen. Since the filter is rectangular and obviously can't be rotated, as the circular ones can, for desired orientation of a four point starburst, Tiffen gives us the option of a 'cross' or an 'X' orientation.



"We have a complete assortment of four, six, eight and twelve point star filters to offer our clients. In the early days of the four and eight point starburst filters, we felt that we should offer something different—Tiffen came through with an assortment of six-point star filters for each of our cameras. We also use Tiffen's assortment of low contrast, diffusion, and fog filters. Many a complexion has been softened in a close-up shot by a Tiffen low contrast filter. Tiffen's line of low contrast and diffusion filters offer a range great enough to take care of any situation. The filters are effective and yet subtle enough to give the desired diffusion without giving any indication that the picture is being softened.

"We use the Tiffen series of Fog filters when we want to create a "dream" look in our productions. This effect was used several times on the production numbers of the 'Dolly' show taped here at Opryland Productions. The heavier fog filters are especially effective in producing this 'dream' look.

"We also use Tiffen's polarizing filters. These filters are very useful when we are shooting car

commercials, outdoor commercials around bodies of water where reflections on the surface are a problem, or outdoors where a deeper blue sky is desired. The polarizing filters are also useful for eliminating any undesired reflections and glares which would otherwise distract from the finished product.

"Price is of course always a consideration in choosing any item we purchase, whether it be an optical filter or a complete color camera system. We have learned, however, that it is very easy to be 'penny wise and pound foolish.' The prices of



optical filters vary greatly from manufacturer to manufacturer. The most expensive we have found, are not necessarily the best. Tiffen's prices are well within reason—they are not the cheapest, but neither do they fall in the most expensive group. Tiffen's lower cost

means that we are able to buy more

Tiffen filters and still remain within our budget.

The Tiffen filters we use have been very satisfactory. The availability, delivery, reliability, variety, and prices make Tiffen our first choice at Opryland Productions."

Truett K. Smith
Senior Video
Engineer



TIFFEN

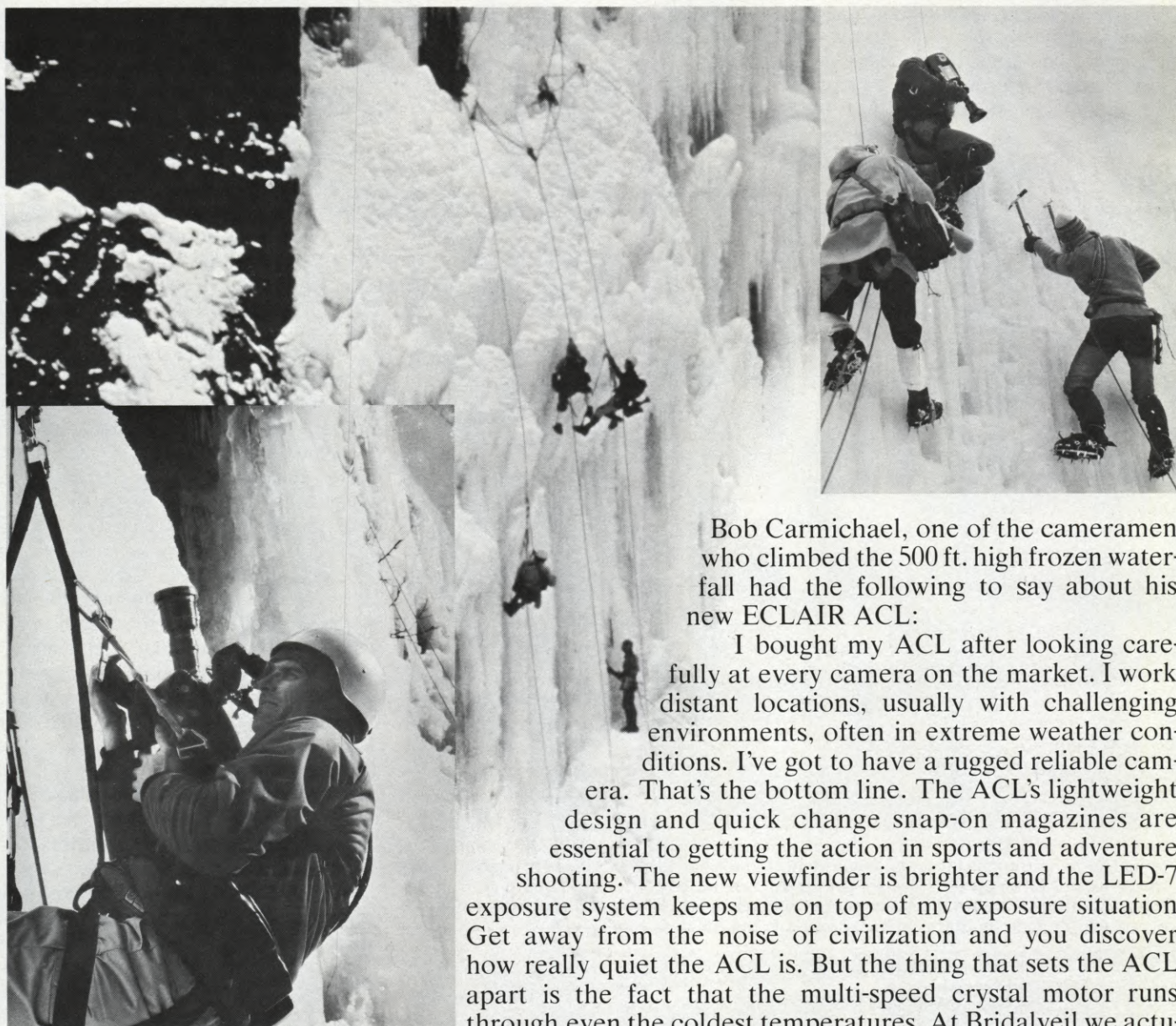
The first name in filters

90 Oser Avenue, Hauppauge, L.I., N.Y. 11787 [516] 273-2500 Telex 96-7748

Write Dept., ASC for FREE Professional Brochure & Price List

ECLAIR ACL: the rugged reliable quiet camera

ABC Sports selected three cameramen to shoot
Bridalveil Falls: All three owned ECLAIR ACL's.



Bob Carmichael, one of the cameramen who climbed the 500 ft. high frozen waterfall had the following to say about his new ECLAIR ACL:

I bought my ACL after looking carefully at every camera on the market. I work distant locations, usually with challenging environments, often in extreme weather conditions. I've got to have a rugged reliable camera. That's the bottom line. The ACL's lightweight design and quick change snap-on magazines are essential to getting the action in sports and adventure shooting. The new viewfinder is brighter and the LED-7 exposure system keeps me on top of my exposure situation. Get away from the noise of civilization and you discover how really quiet the ACL is. But the thing that sets the ACL apart is the fact that the multi-speed crystal motor runs through even the coldest temperatures. At Bridalveil we actually got ice build-up on the camera body and it continued to function perfectly. ECLAIR ACL is now so well proven that it really is an industry standard.

ABC Sports Bridalveil film crew:
cameraman/director—Scott Ransom
cameramen—Bob Carmichael, Greg Lowe
Soundman—Peter Palafian

ECLAIR ACL: the dependable quiet one

SOREMEC U.S.A. INC.
eclair



905 N. COLE AVE., HOLLYWOOD, CA 90038

TWX: 910-321-4192 Eclair USA LSA

THE A.S.C. CLUBHOUSE AND ITS COLORFUL HISTORY

The famed mansion, among the oldest remaining buildings of Hollywood, is now a landmark of the Film Capital and a reminder of its Golden Age

The land in Hollywood upon which the A.S.C. Clubhouse now stands was originally part of the old Spanish Grant known as Rancho La Brea. In the year 1887, Horace H. Wilcox, a land-poor realtor, made a considerable sum of money opening subdivisions, but sold little land in Hollywood. After the boom broke he bought back the 10-acre plots from the

small orchardists, sold his house on Hill Street and moved to his country home in the Valley of the Cahuengas.

Finally E. C. Hurd, a wealthy miner, came from Colorado and bought acreage at the corner of Wilcox and Hollywood Blvd.

H. J. Whitley bought the old Hurd place in 1900 and laid out what was known as

the Ocean View tracts, extending north of the boulevard on to Highland Avenue and beyond. In those days the term "Ocean View Tract" was quite appropriate because one could see the ocean some ten miles away.

The Los Angeles Pacific Boulevard and Development Company built a house on Lot 7, Block 2 of the Hollywood Ocean View Tract #2 in the architectural style called "Modern Mission". The house plan was like that of a Spanish hacienda in that all the rooms opened off a central patio. This "patio" however was completely enclosed and was actually a great central room with imposing pillars. A series of people owned this home from 1903 until 1910 when it was sold to Mr. James Henry Brown of Salt Lake City. Mr. Brown purchased this property for his ailing wife as a retreat from the severe winters of Utah. He persuaded his son, James Creighton Brown, to take his wife Flora and baby daughter Barbara to live here with Mrs. James Henry Brown.

The elder Mrs. Brown died in 1916, but the Creighton Browns remained in the house until 1923. Mrs. Creighton Brown was a beautiful and gracious lady who was very active in the social and cultural affairs of the community. The home became the setting for many receptions for musical and art gatherings. Friends and relatives from Salt Lake City would often be house guests for weeks at a time. This was gracious living.

Old photographs reveal that the center section of the home under the glass dome was filled with tropical plants. The front porch, which had originally spanned the front of the house, was enclosed on the South side to form a keeping room or a summer sleeping porch. There were four bedrooms, a parlor and a study up in the cupola. The house had an ample dining room, butler's pantry and large kitchen. Fireplaces provided a cheery warmth on cold days. Comfortable servants quarters were provided in the basement area.

In 1922, the Creighton Browns bought a new residence at 6626 Sunset Blvd. and the "Modern Mission" was sold to Conway Tearle, a prominent motion picture leading man of those days. Tearle and his wife, Adele Rowland, used to entertain here with lavish receptions. During those years he remodeled the house and put a fountain into the "patio" area and many of the elite film world gathered around it for the lavish parties.

Tearle and his estate retained owner-



An exterior view of the building in 1912, when it was a private residence, shows extensive formal gardening on the grounds. Some of this foliage had to be sacrificed to parking areas when the A.S.C. bought the house. (BELOW) Looking north from the Boardroom of the A.S.C. Clubhouse toward the main lounge, with its stately pillars and sculptured insignia over a marble-face fireplace. In background is the billiards room.



ship of the property until the Mortgage Guaranty Company acquired it at a foreclosure sale in 1935.

The American Society of Cinematographers had owned a suite of offices in the Guaranty Building. The mortgage company had acquired all the other offices and prevailed on the Society to sell their unit for \$20,000 so that they could own the building outright.

In the summer of 1936 the Society negotiated with C. E. Toberman to purchase the property at 1782 N. Orange Drive, a corner lot at Franklin and Orange Drive.

The lot was 150 by 220 feet, but the building and the grounds had been sadly neglected. The members of the club worked in their spare time to restore the building. One of the first things they did was to remove the now-rusted fountain from the center of the main room and fill in the flooring. Then, with their hearts in their throats, they removed two of the six pillars in the main room. This helped to enlarge the area for meetings, but they were not sure that the structure did not need the support. The porch area on the northern part of the building was enclosed and the adjoining room was opened up to form one large room for club members to use as a lounge or card room. The dining room was converted to a billiard room with no structural changes and one of the back rooms was converted into a bar.

The main room was later enlarged by removing the wall of one of the bedrooms.

In February of 1937 the new quarters were formally opened and the first meeting of the general membership took place. Over the years the club has held regular dinner meetings for its members, along with a ladies night in January and seminars throughout the year. Meals are prepared on the premises for these events.

In 1949 a well-equipped projection booth was built on the premises. Because of the fire hazard the building was set out about fifteen feet from the main building and the images were projected through two sets of windows onto a large pull-down screen at the other end of the main room, in front of the billiard room.

In 1968, after the fire ordinances were relaxed, the A.S.C. extended the Board room to join the projection booth, thus enlarging the capacity of the main room for meetings.

The building houses a museum of motion and still cameras and various artifacts of cinematography. The entrance holds a collection of cameras and houses pictures of the Academy Award winners since 1929. The Society's Emmy winners are also proudly displayed in this area. The old card room contains a collection of

cells and original drawings from such Walt Disney pictures as "FANTASIA" and is called the Disney Room. The Billiard Room has its walls covered with pictures of cinematographers in the early days of motion picture production. Charles G. Clarke, ASC, curator of the museum, is currently working on up-dating this collection to give cinematography a continuity through the years.

The Board room contains pictures of all former presidents of the American Society of Cinematographers, a collection of still cameras and the photos of Eastman

Award winners.

The main building presently houses the Society staff and some of the holding corporation personnel. At one time the *American Cinematographer* magazine was also produced in that building. Since 1974 the personnel for the magazine have been housed in a new one-story building at the rear of the lot, which also contains the Society library. ■

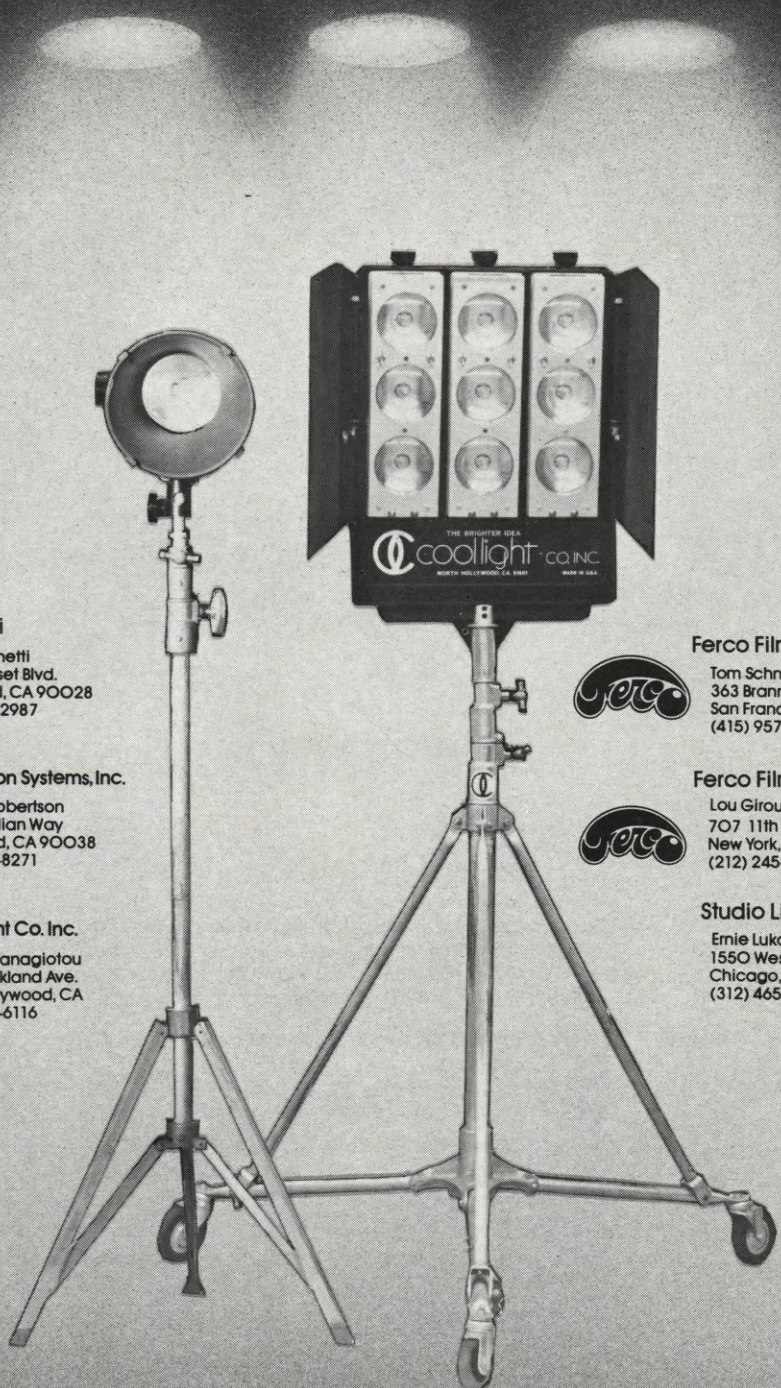
(Editor's note: We are indebted to Mrs. Barbara Martin, "baby-daughter-Barbara", and to Bruce Torrence for pictures and historical data used in this article.)



What is now the main lounge of the A.S.C. Clubhouse went through many changes of decor through the years, although alterations to the basic structure have been kept to a minimum. (ABOVE) In 1912 the room, with its clear glass roof, looked like a botanical gardens, with Art Deco overtones. (BELOW) By 1923 the owners, obviously plant-lovers also, had given it the look of a miniature jungle.



Introducing The Best Daylight Source In The World



Leonetti
Frank Leonetti
5609 Sunset Blvd.
Hollywood, CA 90028
(213) 469-2987



Production Systems, Inc.
Marcus Robertson
1123 N. Lillian Way
Hollywood, CA 90038
(213) 461-8271



Cool Light Co. Inc.
George Panagiotou
5723 Auckland Ave.
North Hollywood, CA
(213) 761-6116



Ferc Film Equipment Rental Co.
Tom Schnitzler
363 Brannan St.
San Francisco, CA 94107
(415) 957-1787



Ferc Film Equipment Rental Co.
Lou Giroulami
707 11th Ave.
New York, N.Y. 10017
(212) 245-4800

Studio Lighting Co., Inc.
Ernie Lukas
1550 West Devon
Chicago, Ill. 60626
(312) 465-3665

 cool light co., inc.

5723 auckland ave., no. hollywood, ca 91601
(213) 761-6116

Why it makes sense to use Arriflex Service:

Regular preventive maintenance is important. So is doing it right.

W Reputation Protection
e're in the service business to back up the cameras we sell. It's in our best interest to provide the best Arriflex service in America.

We're part of the worldwide ARRI organization.

Arriflex Corporation is a subsidiary of Arnold & Richter in Munich, where the cameras are made. Some of our technicians were trained there. Their technical advisers regularly visit our facilities. They keep us up to date on specs and techniques.

We work only on Arriflexes.

Practice makes perfect. All we know about is Arriflexes—and nobody knows more. All Arriflex parts are numbered and on a computer list. And we're in daily Telex contact with the Factory. That means efficiency. Generally, service takes ten working days. By appointment, two days. In an emergency, back the same day.

We use exactly the same equipment as the Factory.

At our facilities in New York and California, we have tools specially made for us by the people in Munich. They use the same special tools to assemble a new camera. We use them here to reassemble an overhauled camera.



Checking critical relationship between claw and register-pin on 16mm ARRI movement. Tolerance is 0.0004 inch. Screen image is magnified ten times.

What does the word "Overhaul" mean?

When *we* use that word, it means we completely dismantle the camera. We even submerge the empty housing in a special cleaning fluid. Then we reassemble the camera, checking each part and installing a new one if necessary. In terms of specs, it's then the equivalent of a brand new camera.

The more often you service, the less often you buy parts.

Not all service work requires an overhaul, of course. But regular cleaning and adjustment make the moving parts last much longer—and labor costs less than parts.

How much does service cost?

It's hard to pin down. Some people quote a lower hourly rate than ours, and

then may bill you for a longer time. As a sales and marketing company, we don't make a profit on service labor. We back up the cameras we sell—and we pay our very good technicians what very good technicians get.

There is no such thing as bargain service.

Why did you buy an Arriflex in the first place? Partly, confidence in its reliability. Now it's service time. How much is confidence worth?

Cutting compound? Mix oil and dust.

"I rent cameras mostly to people who make commercials," says ARRI dealer Denny Clairmont. "They shoot in helicopter-blade windstorms, ocean salt spray and desert dust. They mount the camera on a car and drive it down a dirt road."

"Dust mixes with the oil and grease in the camera to form a cutting compound! If you want to grind down a metal moving part, that's the way. Bumping along the road isn't good for a precision instrument, either."

"In my experience, though, Arriflex parts will perform like new indefinitely—if you keep them clean."

ARRI
ARRIFLEX CORPORATION

One Westchester Plaza, Elmsford, New York 10523. (914) 592-8510. And 600 N. Victory Blvd., Burbank, Calif. 91502. (213) 841-7070
In Canada: ARRI/NAGRA Inc., 6467 Northam, Mississauga, Ontario L4V 1J2. (416) 677-4033

**OF VAMPIRES, CASTLES
AND MECHANICAL BATS**
Continued from Page 573

and you meet the people who are going to teach you everything that you are going to need within the business. There have been some film schools that deal in set design and they are, of course, extremely useful. I think that a year's study at a film school would be a very good basis, but I would be inclined to think that in that same year—if you are an intelligent, bright person who wants to get ahead—you'll learn much more in an art department, keeping your ears and eyes open and trying to learn everything you possibly can and not rushing into wanting to be an art director. Give it time and it will come to you rather than rush into it. It is a great shame that students—and this has been said a great many times by many people—leave college with a very good degree and they come into the world, especially the film business, expecting not to start at the bottom. If they are any good they are going to jump ahead very quickly, but it's a great shame if they rush it. They should give themselves four or five years of good, solid grounding in the art department side, because it is a very technical business. It seems relatively easy at first, but I find that, even at my old age, I am still gaining knowledge from people who know more than I do and this is a great thing for young people to learn—that they'll never actually stop finding out about new ideas and they'll even be able to go back to the old processes, which are nearly as old as cinematography itself, in order to use them in conjunction with modern technology. I learned a lot from people like John Brian and Alfred Yunge in the early days and that knowledge is still coming back to me. I still treat it as law and I am grateful that I was able to learn from these people.

QUESTION: On any set presumably a lot of what you put into it comes of research. What are your sources if you have to build a set—where do you do your research or do you just imagine it all?

MURTON: One usually likes to get a few unfettered ideas of one's own without going into research too much. If you get the basic feeling of the design yourself, then you can go to many libraries. Obviously places like the London Library are superb, as is The British Museum. I have a vast library myself which I call on. But I don't think one must hang on to references too much in the early stages; otherwise, you get preconceived ideas of what it should be without having tried

a few alternatives first. So I generally scribble around and imagine what it is going to look like and then when I find that I don't know the detailing, or if I see some ideas which I like to incorporate, that is the stage when I find the research for it. Unless you are doing something that is really technical—where there are all sorts of things that you know you are going to have to recreate—a specific thing or a specific period—then you obviously arm yourself with the necessary references of those subjects. But in a movie like DRACULA there is little basis upon which one can create these sets from reference. You can take various artists' work that you know might have a certain style—people like Blake, Dore or rather surrealistic painters. But in the final outcome you have to create the designs, you have to supervise the modeling and, in fact, I actually was down in amongst the clay myself showing the modellers exactly what I wanted. They roughed it in and then I pushed it around until I liked it and they then cleaned the thing up prior to casting. The exercise is a matter of really putting your own feeling into it and reference can only go halfway into giving you new ideas which you may not have thought about—but the final outcome has to evolve from one's own mind and effort.

One hot, humid and smoggy day in Los Angeles, fed up with working on an outside construction gang, Roy Arbogast wandered into Paramount Studios and got himself a job as a carpenter.

He went to school in his spare time to study welding, chemistry and plastics technology. He is a studio-trained prop-maker who now specializes in physical effects, operating from a 3,000-sq.-ft. workshop on a 15-acre spread that he also farms, appropriately enough, close by "Magic Mountain" in California.

For DRACULA he moved the whole family to Europe, their first trip; save for the eldest boy who stayed back home "to mind the store."

He was once a miniatures man on FANTASTIC VOYAGE and can point to JAWS I and II and CLOSE ENCOUNTERS OF THE THIRD KIND in his recent past. Oddly enough, most new work has stemmed not from those blockbusters but the less successful EMBRYO, a film distinguished by some extraordinary Roy Arbogast mechanical foetuses.

A disciple of Director Steven Spielberg, he promises "a few surprises" for DRACULA fans who claim to have seen it all.

In the following dialogue with David Samuelson, Special Effects Supervisor

Roy Arbogast discusses his work on DRACULA:

DAVID SAMUELSON: Roy, you came over here from the United States to do special effects on DRACULA. What were your feelings about coming here to England to do a picture?

ARBOGAST: I turned down other pictures just to get the chance to come over here—mainly to learn more ways of doing things and to see how other people do them. I brought my family with me and the kids have been going to school here. It was a good opportunity, because I knew it would be a high-quality film—and I wanted to work with the Mirisches and John Badham.

QUESTION: Your credits include JAWS, CLOSE ENCOUNTERS and JAWS II. What were your beginnings in learning the craft of special effects? How does one go about learning to be a top special effects man?

ARBOGAST: In the States you start off as a carpenter. That's what I did. I started as a carpenter working on set construction, stage set-ups and things like that. Then I got the chance on FANTASTIC VOYAGE to film the plastic parts and nerves and all the miniatures. That was my first break into prop shop work, as we call it over there—which is not just special effects but the handling of such elements as wind, rain and fire. In the prop shop we also film mechanical gags, breakaways, miniatures and that type of thing. After advancing from carpenter to the prop shop I worked at Universal for quite a while and at Warner Bros. for a long time, doing a lot of things on their TV films—all types of gags. From there I just slowly graduated into special effects. At Universal props and special effects are combined and my first real chance to get onto a feature was JAWS, with Bob Matthey. They brought me onto the project mainly to do what we call the "cosmetic work"—in this case, building a skin for the shark. Then I continued with Bob Matthey for a long time and he taught me an awful lot.

QUESTION: On a picture like DRACULA, what are the most interesting of the "gags", as you call them, that you've had to provide?

ARBOGAST: Mainly it's been a matter of trying to improve upon the typical gags that are being done all the time. For example, one of the actors gets stabbed through the belly. The blade goes in one side and out the other. The melting and dissolving of DRACULA, as he dis-

appears at the end of the picture, was quite a challenge. Then we had the mechanical flying bats. I believe we had those built in the prop shop at Universal before I came over, but we were lucky to get a real fine job on those.

QUESTION: Mechanical flying bats? Are they on wires? How are they operated?

ARBOGAST: We have several. One is worked on a pole, in front of black velvet. We have two that are on hanging wires, and we have several that can be thrown or shot down wires. We have one that is loose—that we just pin on a guy's shirt or whatever—like it's attacking him. Each one does a special gag. We've had a lot of regular effects, like the storm sequence. We've had a unit just doing models all the time, which Brian Smithies is in charge of. They're doing some fine model work. We've had a lot of typical effects with wind and rain, fire and smoke. There's plenty of that. We've had some wire work, done by British wire specialists. When DRACULA broke Renfield's neck that was quite a gag for us to build. We had to make a latex foam model of Renfield, and then inside we put a large ball-bearing gag that allowed Renfield's head to spin completely around and, at one point, break clear back. He twisted Renfield's head back, broke it and threw him forward—which I think worked very well. It looked good.

QUESTION: I've seen a shot of a girl having her heart cut out, and her chest looks very real—but, in fact, her head

Looking like an equine ghost rising from the mists, this horse rears among the tombstones of huge exterior set built on the studio sound stage. Films like DRACULA depend very heavily on "hokum", but it must be so well done as to be credible to the audience. Production Designers and Special Effects experts work closely with cinematographers to achieve this result.

is real, but her chest is artificial. Just how did you go about that?

ARBOGAST: We had a model come in and they took a live cast of her chest, using dental casting plaster. Then we made a vinyl plastic chest piece with a fiberglass back and arranged that in place of her body. We could cut through it and have blood bags inside.

QUESTION: On "H Stage"—which is one of the largest stages in the world, I suppose—you've got a storm sequence with a model ship floundering against the rocks. Would you like to describe that a bit?

ARBOGAST: Well, that is being filmed by the unit I mentioned that is doing strictly model work. They're using all the wave equipment, wind, a lot of mist and a model ship that is run back and forth on a nice universal-type gimbal that Brian Smithies built. I think it's a 14-foot model with some breakaway sections on the ship. There is more than just a storm sequence. The ship has to crash onto the rocks. Then we cut to what we shot down in Cornwall, where they put a full-size ship on the rocks. They did all the First Unit stuff down there.

QUESTION: I gather that another one of your gags involved a wolf that tore a girl's throat out. How did you managed that?

ARBOGAST: We made a mechanical wolf. We used small air rams for the mechanics and a regular wolf hide. Then

we had the latex foam appliances of the wolf's head—the nose (so he could snarl) and a vinyl tongue (so he could pant). There was also the front part of the torso that could be made to lunge forward. It was all operated from a remote panel, using very small pneumatic rams.

QUESTION: Coming over here to do a picture like DRACULA and being away from all the facilities that you regularly have available—has that been a difficulty for you, and how have you overcome it?

ARBOGAST: Yes, that has been the biggest difficulty—just learning where to go to get what—and finding out who knows where to get what. We employed Effects Associates as a back-up. Being a rental/hire company, they have a full complement of equipment, so I could go right to them for whatever we needed, instead of having to find other sources. This served very well as our quick and easy way out.

QUESTION: Have you been able to find over here everything that you've needed?

ARBOGAST: No. They say we could get some of the things if we had a lot of time to spend waiting. A lot of people whom I called upon when I needed certain types of special effect equipment said things like, "Maybe we have it and maybe we don't. We might have it and we might not. If you can wait two weeks, we can probably find it for you." But as you know, that doesn't work in film production. I've had to call back to the States for quite a few items, simply because it was faster for me to phone California and have somebody put it on a plane. That way I knew I would get it on a certain date.

QUESTION: In the United States, do all of the people like yourself, doing the same sort of job, work together and borrow from and lend to each other—or how does it operate?

ARBOGAST: Yes—that's how it operates. There are a couple of different ways that it works. On the one hand, if you are the employee of a major studio, you will have available a full back-up of equipment. But if you do independent shows, like I try to do a lot of the time, there is a group of independent fellows, each of whom has a complement of tools and special effects equipment. I have not got everything, and the next guy might not have everything, but together we've got it all covered and we always

Continued on Page 625



What's this — a 16mm camera on a geared head, on a crab dolly, on tracks? "You still have to do the job, whatever size film you use," says Operator Tony Brooke. "Looking through the SR's finder, you can't tell the difference. It's a production camera."



Shooting a two-hour CBS Special in 16mm:

"We shot the whole picture as though it were 35mm," says Jack Priestley.



Director Ralph Nelson with Jack Priestley. "When you see this picture on the TV screen," says Mr. Priestley, "I defy you to tell whether it's 35mm or 16mm."

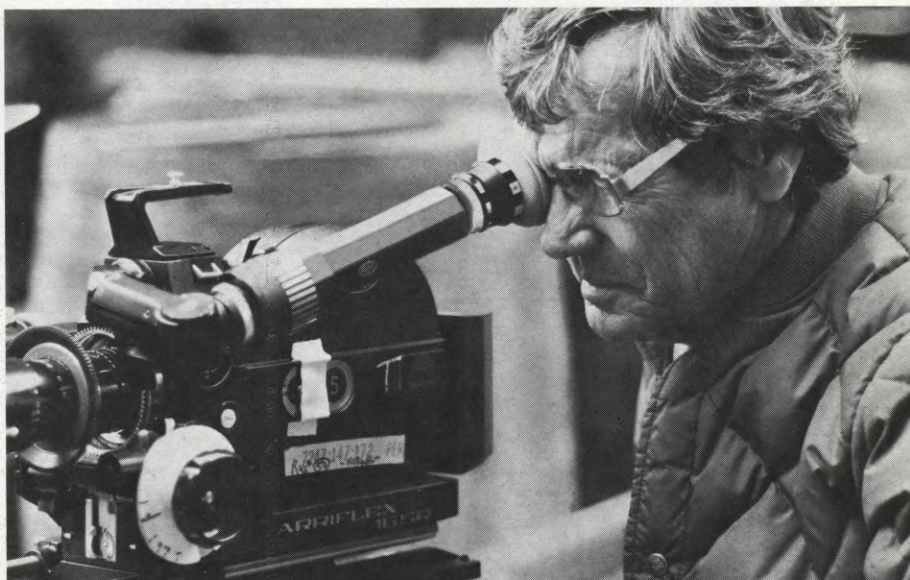
"After a while, you forgot whether you were shooting thirty-five or sixteen, or whatever. It was just *the camera sitting there*."

That's Director of Photography Jack Priestley, A.S.C., talking about making *You Can't Go Home Again* for CBS.

"There wasn't a hand-held scene in the whole picture," says Mr. Priestley. "And we weren't pressured for time—it was like working on a feature."



First Assistant Richard Reis positions a flag. "That camera really paid off on this job," he says. "It's a pleasure to work with."



Jack Priestley lines up a shot with the 16SR. Note the new white follow-focus marking disc.

"I ran tests before we started... was glad to have the Zeiss fast lenses. All our night exteriors we shot at T1.3. And we shot most of the interiors at T2, to get maximum effect from our low-contrast filters."

Shooting from a window, Tony Brooke uses the 16SR finder on the *right* side of the camera.



"16mm isn't fully accepted yet. Partly, that's because there hasn't been a 16mm camera adequate to *handle* a feature," says Mr. Priestley.

"But this Arri SR is studio quality. For example: we shot some closeups three feet away — and, I'm telling you, you couldn't hear that camera run."

The 16SR

ARRI

ARRIFLEX CORPORATION

One Westchester Plaza, Elmsford, New York 10523. (914) 592-8510. And 600 N. Victory Blvd., Burbank, Calif. 91502. (213) 841-7070
In Canada: ARRI/NAGRA Inc., 6467 Northam, Mississauga, Ontario L4V 1J2. (416) 677-4033

CHALLENGING NATURE TO FILM "ROCKY MOUNTAIN REUNION"

By MARK J. STOUFFER

We wanted to make a film that presented exciting solutions rather than doomsdayish problems. Everyone seemed to already be aware that many animals were endangered to the point of becoming extinct. And besides, we were working with John Denver, a man with some very positive and constructive ideas.

Thus emerged ROCKY MOUNTAIN REUNION—a one-hour ABC-TV Special in which John Denver takes command of a sort of modern-day Noah's Ark, venturing deep into the wilds where he releases into the mountains breeding pairs of

A Golden Eagle lands on the outstretched arm of popular singing star John Denver during the filming of ROCKY MOUNTAIN REUNION, a one-hour ABC-TV Special about the return of breeding pairs of birds and animals to mountain areas where their species had been nearly exterminated. Denver, a man with some very constructive ideas on ecology, was a natural for the role.

some of the most endangered species on earth—all of which had before been written off as forever extinct in the Rockies. The goal—to bring back to the mountains all those animals we have nearly exterminated.

To put the exposed film into the can would definitely require some very special and innovative photographic techniques, not to mention months of hard work. Like any film project, the first stage was to finalize the script, because if you haven't got it working on paper, chances are you'll *never* have it working on film. So, we waded through all kinds of options

before we settled on the eight major story sequences that would comprise the body of the film. Each was distinctly different and presented its own technical challenge. It was already Fall in Colorado, and with Winter approaching, we had to move fast or we'd have a "white" show on our hands. Within a month of locking the script into its final form, the shooting was underway.

Photography on a wildlife documentary can best be broken down into two major areas; hardcore animal work, or story line photography. The main difference between the two is that the latter goes rather smoothly and with an air of predictability, while the hardcore animal work is just the opposite—painstaking and unpredictable. Feeling it was best to first tackle the difficult stuff, my working partner, David Huie, and Director of Photography, John King, packed the gear and headed for South Dakota, where they were out to shoot the first of our eight sequences—huge male Bison, or Buffalo, battling for the females during the annual rutting season. The task was grueling for not only the Bison, but also for David and John who had to dodge hooves, horns and Buffalo pies for more than three weeks!

In a situation such as this, one has to shoot with eyes in the back of his head, for one daydreamy moment could result in a trampled cameraman and camera. The bulls weighed in at around 1,500 pounds each, and after three weeks of moving camera positions at least 100 times per day to accommodate the roving herd, that's just about what the equipment began to weigh.

Two systems were used. One was our Arriflex 16mm BL with an Angenieux 12-120mm zoom lens, and the other was our Photosonic 16mm Actionmaster 500 High-Speed camera with a combination of lenses including an Angenieux 12-120mm zoom, a 230mm and a 385mm Century telephoto. It was understood that David shooting the Arri would cover all the wide angle scenes, or establishing shots, while John shooting the Photosonic would cover all the close-ups. It has always been our experience to designate the responsibility of each cameraperson before the shooting begins. If it is done properly, it will render some magnificent continuity in the editing room.

We wanted to make the animals "feel" as massive as possible on the screen, so we used the Photosonic to shoot the

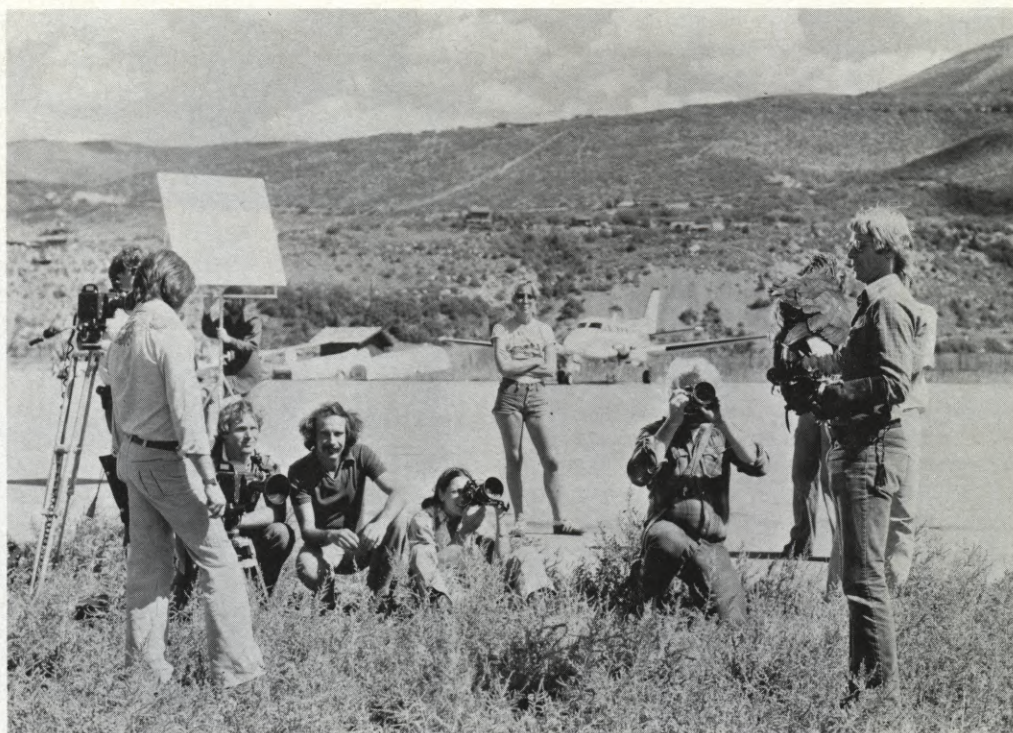


close-ups and some matching wide angles at double normal speed: 48 frames-per-second. This speed slows things down just enough to give it a "big" feel, while not generating an obvious slow-motion look. In all, we ran about 9,000' of 7252 ECO through the cameras and wound up workprinting around 4,800' for editing. We reduced our workprinted footage by selecting the original scenes to be printed on a scratchproof Moviscope Viewer. Many people frown on this technique, but if the viewing device is checked out well enough, it will not damage the original footage and it can save a substantial amount of workprinting cost. Of course, one must be shooting a reversal film in order to use this technique, and that is one of the main reasons we chose not to shoot this program in the 7247 negative stock. Other reasons for not using the negative were to reduce light leaks, dust marks, the necessity for loading the Photosonic magazines in a black bag and the general paranoia which comes with handling any negative stock in such adverse shooting conditions.

Sound for this sequence was given low priority, since we knew well that it could all be created later, and with much less difficulty. However, as a foundation for the soundtrack to be, our Nagra 4.2 1/4" tape recorder took in a variety of thundering hooves, snorts and grunts in the form of "wild" recordings at 7 1/2 inches-per-second.

After all the filming and recording was completed, and the risk of wearing Buffalo tracks past, the efforts yielded a grand total of six minutes within the framework of the film—a major undertaking, but in the world of filmmaking, only a beginning.

No sooner had the dust from the Buffalo shoot settled than we were smack in the middle of shooting our next sequence. Although it would become the final piece in the finished film, we decided to shoot it second in order because it promised to be one of the most difficult undertakings of all. If we were to encounter problems, we needed to know early in the game so we would have the time to salvage things with a reshoot or rewrite of the scripted sequence. The task—to create a beautifully choreographed aerial ballet of John Denver in a snow-white glider plane, shot and edited to complement the flight pattern of a Golden Eagle. In an effort to render a believable feel to the visuals, and to keep things from looking like a faked, cross-cut sequence, we decided that several shots of both the glider and eagle in the same frame would be absolutely necessary. Our first move was to hire the services of the most disciplined Golden Eagle in



The still and motion picture crew on location shoots scenes of John Denver with the Golden Eagle. (BELOW) Denver watches rare Greenback Trout "fry" being poured into the container he will use to transfer the fish to the waiting Cessna airplane for "air planting" into a carefully selected Rocky Mountain lake. They had to be placed high enough up so that they wouldn't be fished out the following year.



North America—his name was Phoenix, and he lived in Oregon with his equally-talented owner and trainer, Dav Siddon. A phone call was made, and much to our delight we discovered that Phoenix and Dav were already in Colorado working on another film project. It was fortunate too, because sometimes the federal permits necessary to transport such a creature over state lines can take months to se-

cure. Finding Dav in our neighborhood of the country, a deal was quickly struck, and within days the shooting was underway.

The way the sequence was scripted, our cameras move in on an eagle perched high in the cliffs of the Rockies. Suddenly, the bird spots John Denver soaring below in his sleek glider. Leaving his outlook, the eagle moves in to investi-

gate the strange intruder, and the resulting five minutes which follows represents the body of the sequence. Finally, the glider and eagle come back to earth and as John exits the glider, the eagle drops from the sky and floats onto his outstretched arm to conclude the piece. Well, believe it or not, it all worked, and was even further enhanced when John Denver composed for us an original song for the sequence entitled, "I'm Flying Again".

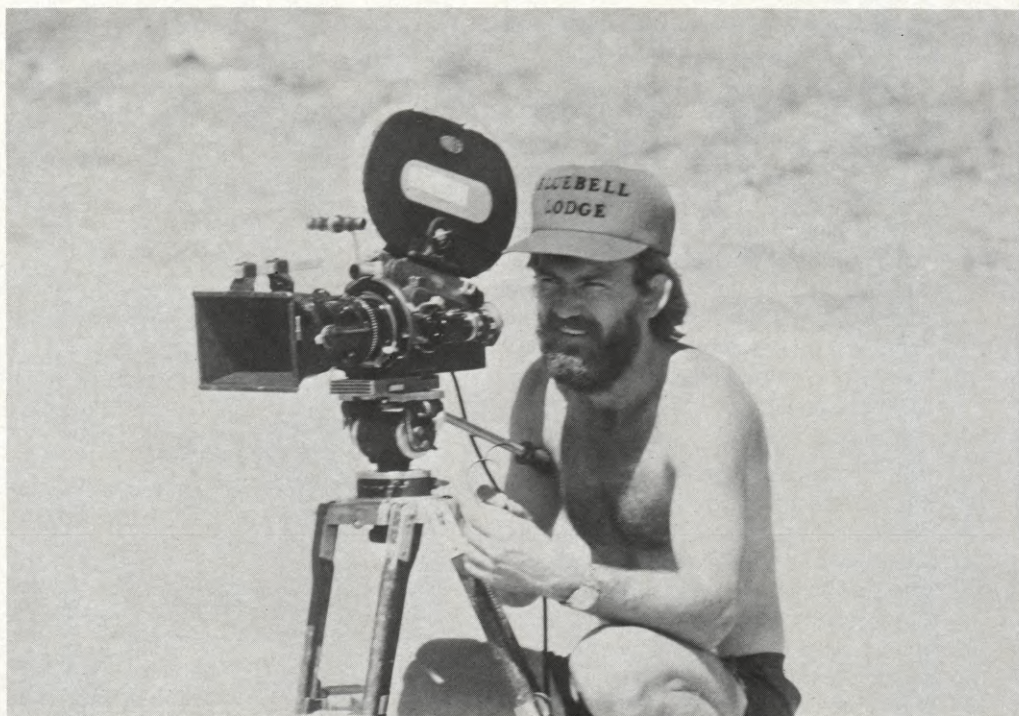
Technically, four styles of camera work were employed. The first step was to secure high quality cockpit closeups of John flying the glider. This was the only time we cheated a bit by suspending a velvet cloth above the cockpit glass hatch to enable us to control reflection and therefore shoot the close-ups on the ground. A slight rocking of the wingtips helped add motion to the shots, and of course, John's superb acting ability gave it all the polish it needed.

The actual flight photography of the glider was shot from two vantage points—one from a helicopter using a vibration-free mount for an Arri M, and the second from a high-altitude camera position atop the 11,000' Aspen Highlands Peak. Crack glider pilot, David Jones, performed most of the stunt piloting which appeared frightening even from the ground . . . not to mention how things must have looked from the cockpit. As the helicopter swished around the glider to cover the eagle point-of-view shots, a 385mm Century lens attached to our Photosonic camera recorded the glider close-ups at 48 and 100 frames-per-second. When all was over and done with, the ground-stationed camera proved to be the most valuable. All in all, we used a mere two shots from the helicopter-mounted Arri, and at a cost of over \$2,000.00! The problem with most of the air-to-air footage was primarily that it was too shaky to cut with ground-stationed scenes. Additionally, the helicopter had to keep a wide margin of safety from the glider which resulted in an image size too small to be visually impressive on the screen. The point of the whole story—Don't think that just because you're shooting from a helicopter things will look better on film. As we unfortunately found, it can sometimes backfire, and quite expensively!

The eagle photography went quite smoothly, a fact we attribute mostly to the well-trained eagle, Phoenix. It was performed upon the same peak the glider was flying near. In fact, it all happened at the same time and enabled us to obtain the two-shots we desperately needed. We would wait for the glider to approach our cameras, and then cast the eagle into



Associate Producer David Huie prepares to shoot with the Arriflex 16BL. (BELOW) John Denver (right) and Lou Wille free Trumpeter Swans into the wilds of Colorado. As the lids came off the boxes, each man grabbed one of the 20-pound birds and Colorado was blessed with a native species extinct in the state for well over a century.



the foreground air space for just long enough for both elements to share the frame. The results were spectacular.

With the glider and two-shots in the can, it was now time to concentrate on the eagle photography alone. We set up with two Photosonic cameras, one equipped with a 230mm lens, and the other with a 12-120mm zoom. As Dav Siddon, and his son, David, shuttled the eagle in flight between them, both cameras rolled at 48, 100, 200, 300, 400 and 500 frames-per-

second until we felt we had sufficient material for the delicate cutting necessary if the sequence were to succeed. And later, as we all sat in the screening room watching the "rushes", we were rewarded many-fold with the breathtaking images of the Rockies in Autumn with both John Denver and the Golden Eagle coasting over the snow-capped peaks.

It was still too soon to cruise on the merits of what was past, for months of

Continued on Page 606

Why is the CP-16(A) camera different from all other documentary cameras?



1. THE POWER SOURCE - The CP-16 has a built-in battery pack that provides 1600 frames of film at 16mm, 24mm, or 35mm.
2. THE CRISTAL-LINE SYSTEM - The CP-16 has a crystal-line system that provides a sharp, clear image.
3. QUICK ATTACH MAGAZINE - The CP-16 has a quick attach magazine that allows for easy film changes.
4. BUILT-IN AMPER - The CP-16 has a built-in ampere meter that allows you to monitor the battery level.
5. BUILT-IN METER - The CP-16 has a built-in meter that allows you to monitor the exposure.

Available from:

ALAN GORDON ENTERPRISES INC. VICTOR DUNCAN, INC. THE CAMERA MART, INC.

the hard news camera - cp-16

When you're looking for a camera that's different from all other documentary cameras, you need the CP-16. It's the only camera that's built for the hard news camera market.

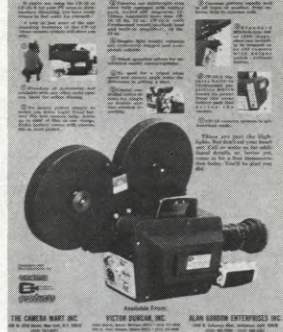
FEATURES:

- Built-in battery pack
- Built-in ampere meter
- Built-in meter
- Quick attach magazine
- Crystal-line system
- Power source

Available from:

ALAN GORDON ENTERPRISES INC. VICTOR DUNCAN, INC. THE CAMERA MART, INC.

Eat your heart out.

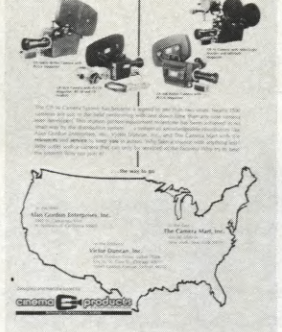


The CP-16 is the only camera that's built for the hard news camera market. It's the only camera that's built for the hard news camera market.

Available from:

ALAN GORDON ENTERPRISES INC. VICTOR DUNCAN, INC. THE CAMERA MART, INC.

you can't beat the system



The CP-16 is the only camera that's built for the hard news camera market. It's the only camera that's built for the hard news camera market.

Available from:

ALAN GORDON ENTERPRISES INC. VICTOR DUNCAN, INC. THE CAMERA MART, INC.

WHEN A CAMERA'S GOT MORE FEATURES DESIGNED INTO IT, YOU'VE GOT TO GET MORE OUT OF IT.



Available from:

ALAN GORDON ENTERPRISES INC. VICTOR DUNCAN, INC. THE CAMERA MART, INC.

The Camera That Shot Lincoln



The CP-16 is the only camera that's built for the hard news camera market. It's the only camera that's built for the hard news camera market.

Available from:

ALAN GORDON ENTERPRISES INC. VICTOR DUNCAN, INC. THE CAMERA MART, INC.

WHY MORE PEOPLE BUY CP-16 FROM US:

Choice: We offer CP-16s in two different models and three different accessories. You can choose the model that's right for you, and the accessories that you need.

Price: We offer CP-16s at a special price. This is the only camera that's built for the hard news camera market.

Backup: As the original Factory-Approved CP-16 dealers, we have more than 20 years of experience in selling and servicing CP-16s.

Available from:

ALAN GORDON ENTERPRISES INC. VICTOR DUNCAN, INC. THE CAMERA MART, INC.

IT COMES WITH A 2,000 PERSON GUARANTEE.



The CP-16 is the only camera that's built for the hard news camera market. It's the only camera that's built for the hard news camera market.

Available from:

ALAN GORDON ENTERPRISES INC. VICTOR DUNCAN, INC. THE CAMERA MART, INC.

SERVICE? GOSH, I HADN'T THOUGHT ABOUT THAT!



The CP-16 is the only camera that's built for the hard news camera market. It's the only camera that's built for the hard news camera market.

Available from:

ALAN GORDON ENTERPRISES INC. VICTOR DUNCAN, INC. THE CAMERA MART, INC.

"We have one of the first CP-16's and it's still our only camera."



The CP-16 is the only camera that's built for the hard news camera market. It's the only camera that's built for the hard news camera market.

Available from:

ALAN GORDON ENTERPRISES INC. VICTOR DUNCAN, INC. THE CAMERA MART, INC.

THE CP-16 AN ALL-NEW CAMERA Not a Conversion



The CP-16 is the only camera that's built for the hard news camera market. It's the only camera that's built for the hard news camera market.

Available from:

ALAN GORDON ENTERPRISES INC. VICTOR DUNCAN, INC. THE CAMERA MART, INC.

We know CP-16 the best!

It stands to reason that if you're in the market for a CP-16 you should check with the people who know the camera best. We've been selling and servicing CP-16s longer than anyone else. And we've backed up our know-how with a series of ads that date back to the time the CP-16 first came out in 1971.

If you're thinking CP-16, see us first. It just makes good sense.



THE CAMERA MART, INC.
456 W. 55th Street
New York, N.Y. 10019
(212) 757-6977

VICTOR DUNCAN, INC.
32380 Howard St. Madison Heights,
Michigan 48071 (313) 589-1900
200 East Ontario, Chicago,
Illinois 60611 (312) 321-9406
2659 Fondren, Dallas,
Texas 75206 (214) 369-1165

ALAN GORDON ENTERPRISES INC.
1430 Cahuenga Blvd.
Hollywood, Calif. 90028
(213) 466-3561 / (213) 985-5500

"film at eleven"

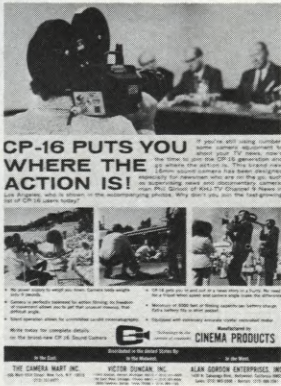


The CP-16 is the only camera that's built for the hard news camera market. It's the only camera that's built for the hard news camera market.

Available from:

ALAN GORDON ENTERPRISES INC. VICTOR DUNCAN, INC. THE CAMERA MART, INC.

CP-16 PUTS YOU WHERE THE ACTION IS!



The CP-16 is the only camera that's built for the hard news camera market. It's the only camera that's built for the hard news camera market.

Available from:

ALAN GORDON ENTERPRISES INC. VICTOR DUNCAN, INC. THE CAMERA MART, INC.

"DAYS OF HEAVEN"
Continued from Page 565

When I was initially contacted by Producers Harold and Bert Schneider, I advised them of my commitment to Truffaut, which would begin just as *DAYS OF HEAVEN* was scheduled to end.

Malick and the Schneiders accepted this condition with the hope that Truffaut's film, *THE MAN WHO LOVED WOMEN* would be delayed in pre-production. It wasn't, and to complicate matters, Canada experienced an Indian

Summer and the snows we needed for the story were late in coming.

Once the situation became apparent and I knew I would not be able to finish the film, I thought of all the great Directors of Photography in America, searching for someone who would be appropriate to replace me. I thought of Haskell Wexler, a man whose work I greatly admire, and a man I also consider a friend. I asked him if he would complete the work I had begun, and again, fortunately for me and the project, he accepted.

He overlapped with me for one week, observing the style we were using, screening all our rushes, sensing what we were after.

In the end I had shot for 53 days; Haskell shot another 19. I don't believe anyone can tell the difference between what I shot and what he did.

He was directly responsible for the final scenes in the city, after the death of Richard Gere; for all the snow sequences; and for completing shots in other sequences where additional angles or coverage was necessary.

The continuity he achieved is a remarkable achievement; an example of his immense talent for which I am forever thankful.

As often happens in films, a story with a particular setting may actually be filmed in a totally different locale that has the appearance of the real setting. Such was the case with *DAYS OF HEAVEN*.

Set in the Texas Panhandle, in 1916, the film was made in Canada, in a region of southern Alberta. And as so often happens in filmmaking, the elements of the location directly enhanced the design of the film.

The locale chosen was a vast virgin landscape owned and farmed by the Hutterites, a religious sect who emigrated many years ago from religious intolerance in Europe. Like the Mennonites and Amish in America, these people live in another era.

They communally own and work the great stretches of land, growing a wheat that is longer than the kind grown by modern farming today.

They make all their material possessions, including their austere furniture. They have no radio or television, eat homegrown natural foods, and even their faces look different from ours (some appear in the film). In the one-hour drive from our hotel we would pass from the twentieth to the nineteenth century.

There is no doubt that the atmosphere of this land added authenticity to the images in our movie.

In addition, rising out of and rolling across this extraordinary landscape were red-wine-colored silos and antique, steam-driven tractors and combines loaned to us from nearby private collections.

DAYS OF HEAVEN was my first opportunity to use a camera which was the rage in America but hadn't yet arrived in Europe: the Panaflex.

It is a very light, self-blinded, late American answer (but I believe superior) to similar European cameras.

Today's evolution is toward the miniaturization of equipment that will afford more freedom of movement during



In key with the period of the film (1916), kerosene lantern light (ABOVE) and campfire light (BELOW) are much in evidence and appear to be totally natural. Almendros pushed all of the night scenes one stop and, on occasion, two stops. He found no objectionable alteration in grain or contrast, even in the 70mm blow-up prints.



shooting. To this end the Panaflex was developed, with such versatility that now we have a studio camera with the flexibility and configuration of a documentary or newsreel camera. During our production its only drawback was a dim viewfinder, something that has since been corrected with great ingenuity.

It is a highly sophisticated camera, and adding the ultra-speed lenses, filming that was once impossible is now available to us all. DAYS OF HEAVEN could not have been made without this camera and those lenses.

Over the years, I have noticed a certain inertia among Hollywood technicians. Since they were the first in everything, it takes them time to catch up to date or to accept the need for modification or new design.

After World War II, Europe was the forefront of new equipment development. Light cameras were among the first items developed, allowing the filmmakers to be freed of the confines of only studio sets. As a further development, these cameras were made as reflex cameras, something that did not happen in America until much later.

Another example of this inertia is the use and development of the dolly. I prefer simple movements—and I find handiest for this the Italian Elemack, which is very versatile and light. On DAYS OF HEAVEN, the crew was determined to use a conventional studio dolly with hydraulic riser—a piece of machinery so heavy it takes six men to lift it, and its size precludes it from fitting where you need it. Obviously not a flexible unit for film-making.

I suppose there is an American weakness (or perhaps human weakness) which prompts men to resist simplification.

Typical of this resistance is the continued use of the gear head. Today there are gyroscopic and hydraulic fluid heads which move the camera as smoothly and directly as the old-fashioned gear heads, or even better. (Sachler and Ronford are two perfect examples.)

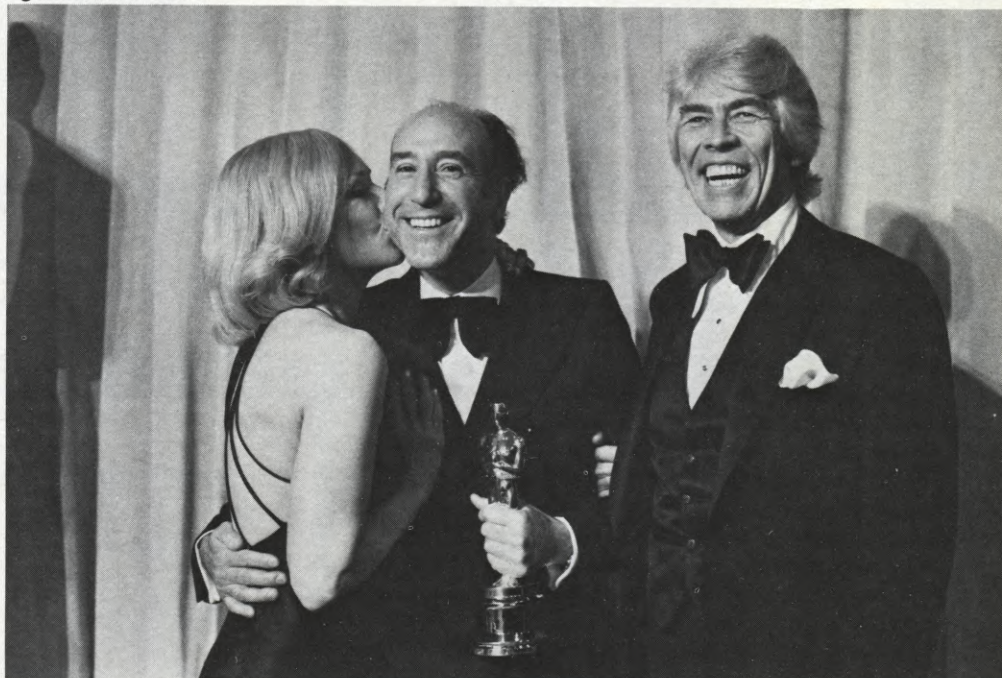
It does not require a great deal of experience to use them—a person with a good sense of rhythm can make a perfect panoramic sweep and accompany characters in their movements without losing the composition.

With a camera on a simple head with a handle, the man and mechanical elements become one, and the movement becomes almost human. The mechanical perfection of the gear head cannot compare with the almost human sense of a handmade panoramic.

If Americans resist on the one hand, on the other hand there is no doubt that



(ABOVE) Many of the scenes in DAYS OF HEAVEN have the American Gothic overtones of Grant Woods' paintings, with just a touch of Norman Rockwell. (BELOW) A happy Almendros, after winning his gold "Oscar", accepts a congratulatory kiss from film star Kim Novak, while co-presenter James Coburn looks on. Almendros' unconventional lighting techniques during filming often shocked the "Old Guard" American crew, but you can't argue with an Oscar.



when they put their mind to something, they are the greatest technicians and innovators in the world. And doubly praiseworthy is that whenever they seriously attack a technological problem, they offer the results freely to any nation.

On DAYS OF HEAVEN we were fortunate to have a perfect example of this ingenuity: the Panaglide System. This is Panavision's version of the Steadicam System, with several advantages.

In the beginning, Terry was very enthusiastic and wanted to do practically the whole movie with Panaglide. Very soon, however, we realized it was a useful gadget, virtually indispensable on occasions, but not universal.

Like the first filmmakers, who used the zoom lens and were so enthusiastic over their new toy that they made audiences seasick, we too paid to be freshmen.

Because we had the freedom to move

in all directions, the thing became a merry-go-round. The whole crew—sound, script, director, and myself—had to run behind the operator on every take so we would not be in frame.

The dailies were incredible—brilliant; but there was an impression of *tour de force*, of great effort. The camera became a protagonist, a living actor; and it was an intruder. We discovered that very often, nothing is worth more than a steady shot on a tripod or a very smooth, invisible classic dolly move.

Nevertheless, the main sequences and shots in *DAYS OF HEAVEN* could not have been done without a Panaglide. It is these scenes that the audience and the critics continually talk about.

For instance, there is a scene in the river where Richard Gere convinces Brooke Adams to accept the marriage proposition of Sam Shepard. This scene required movement, yet it would have been impossible to put track under the water for a dolly. Further, the actors improvised in the water, wading around knee deep, moving wherever they wanted without blocking, and the camera never lost them. Only the Panaglide made that shot possible.

Similarly, in the fire sequences, the camera could penetrate the flames and move around in a brilliant vertical movement that visually heightened the drama

of the moment.

Juxtaposed with these brilliant takes were editing problems. The novel improvisations of the actors and the camera prevented several cuts without continuity problems.

Also, it was quite difficult to shorten a sequence, and for this reason one of the most perfect scenes had to be eliminated in the final cut. The operator was standing on the crane arm, even with the balcony on the third floor of the mansion. Linda Mantz walked into the house from the terrace, through the bedroom, and down the stairs. The crane boomed down at the same time, following her, and we could see her intermittently through the windows. When she reached the ground floor, the operator stepped off the crane, and moved step-for-step with Linda, following her into the kitchen, where she encountered Richard Gere, and they exchanged dialogue (in sync sound).

The first part of the shot, the crane following her down the facade of a building, and describing along its way several actions as seen through the windows is nothing new. King Vidor did it in *STREET SCENE*; Max Ophuls in *MADAME DE*. On the other hand, what follows—the camera actually entering the building, is very, very new.

The French invention, the Louma, could penetrate into the building at the

end of *MADAME ROSA*, but only in one room because it cannot twist; it cannot bend and follow a character into another room. But with the Panaglide, you get the true impression of three-dimension and the real geography of the set is described perfectly.

For all its magnificent possibilities, however, the Panaglide has one very serious drawback. The weight of the system is considerable and the operator has to be an Olympic athlete. If the system becomes standard equipment in the state it is in now, we will have to create a whole new generation of cameramen-athletes, and the problem will be to find athletes who are also artists.

All three operators and myself tried to operate the apparatus, and we all gave up, breathless. Undoubtedly that is why Bob Gottshalk at Panavision sent a special operator with the camera; a very well-trained athlete, Eric Van Haren Noman who did his push-ups all day long, and who is also a great artist.

From the very start of filming, I consistently pushed the night scenes. A few years ago when *5247* was first released, the results of forcing the film were not very good, but when we began *DAYS OF HEAVEN*, the response of the new stock had come to perfection, and our tests at Alfa-Cine Laboratory in Vancouver were

Continued on Page 626

In Australia, New Zealand & South East Asia for everything required in Film & Television Equipment... Cameras, Editing, Lighting & Sound Equipment

Barry Pack 4-30
The new portable lighting system for TV news gathering. 150, 250, 350 W output 30 volt, 4 a.h. power pack with self contained automatic fast charge.



JOHN DARRY
GROUP • AUSTRALIA



Sales • Rental • Service

105 RESERVE ROAD
ARTARMON, NSW 2064
SYDNEY, AUSTRALIA
TELEPHONE: (02) 439 6955
TELEX: 24482

why

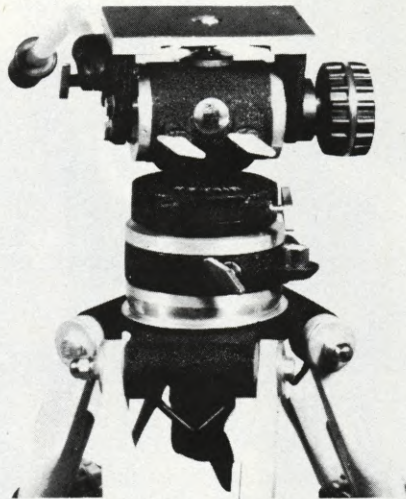
THE **Miller "Fluid Action"**
PROFESSIONAL
HEAD is the World's Finest!

*MILLER Equipment is precision-built of highest quality materials and every replacement part is available.

*MILLER Equipment is used throughout the world by leading photographers film and television studio giants.

*MILLER Equipment lasts indefinitely if properly maintained.

*MILLER Heads are being used with complete satisfaction from the freezing Antarctic to the excessive heat and humidity of the desert and tropics.



FEATURES INCLUDE:

- *Full 360° Horizontal Pan.
- *Slip control for filming of fast moving objects or events.
- *90° Tilt control up or down.
- *Positive Tilt Lock and variable tension controls for camera support up to 40 lbs.
- *There is a MILLER Tripod suitable for every Head.
- *Other MILLER Fluid Heads are available for cameras from 5 lbs. up to 200 lbs.

The MILLER world famous velvet like movement operates on a semi-hydraulic principle which is patented throughout the world, and should not be confused with any friction-type movement.



Leos **CAMERA SUPPLY LTD.** CANADIAN DISTRIBUTOR

1055 GRANVILLE STREET VANCOUVER 2, B.C. TELEPHONE: (604) 685-5331



(PATENTED)

HOWARD A. ANDERSON CO.



CREATORS OF DISTINCTIVE IDEAS
AND DESIGNS FOR
SPECIAL PHOTOGRAPHIC EFFECTS FOR
MOTION PICTURES AND TELEVISION

TITLES · GRAPHICS · MINIATURES
BLUE BACKING · INSERTS
MATTE PAINTINGS · OPTICALS
SPECIAL UNIT PHOTOGRAPHY

Main Office: PARAMOUNT PICTURES
5451 Marathon Street, Hollywood, Calif. 90038
(213) 463-0100

The American CINEMATOGRAPHER

VOL. 3, NO. 6 LOS ANGELES, CAL. SEPTEMBER, 1922 TWENTY-FIVE CENTS A COPY



those leaders in the cinematographic science whose achievements in that field entitle them to membership in this Society . . . maintaining the high standards set for themselves . . . promoting the interest of all who shall be called to membership . . . to the end that membership in this Society may become a mark of honor and distinction based on merit." The Society's motto: "Loyalty, Progress and Artistry."

It was the first craft organization of any kind in the American motion picture industry.

The following night, Sunday, December 22, at the home of Fred Le Roy Granville, Rosen was elected president; Charles Rosher, vice-president; Homer Scott, second vice-president; William Foster, treasurer, and Victor Milner, secretary.

On January 8, 1919, the American Society of Cinematographers was incorporated under the laws of the State of California and received a charter.

By the time the fifth meeting was held, permanent quarters had been established in Hollywood's Markham Building.

William S. Hart and Mary Pickford were the first producers to place the letters "A.S.C." after the photographer's name in screen credits. It was a tremendous boost to the fledgling Society in 1919 when Hart's latest picture, and posters, carried the credit line "Photographed by Joe August, A.S.C." and Mary Pickford's read "Photographed by Charles Rosher, A.S.C." Bill Hart and Mary Pickford were "super-stars" of the day, and, in many respects, they have never been topped. The Society still displays the autographed photographs of both star-producers wishing the A.S.C. success.

Over fifty cinematographers were invited to join the first year. By 1924, the Society was wealthy enough to move to the top floor of the then new Guaranty Building at Hollywood Boulevard and Ivar Street. It remained there until 1937, when the move was made to the present location, the house and grounds at 1782 North Orange Drive which once belonged to actor Conway Tearle.

During the depression an unauthorized strike of all cameramen was called by the International Association of Theatrical and Stage Employees (IATSE). The date was July 25, 1933. All cameramen, first and second cameramen, still photographers and assistant cameramen were members of the IATSE.

The strike failed, but it caused the A.S.C. to protect its members in the classification of first and second cameramen and still photographers.

In an effort to hold together the entire

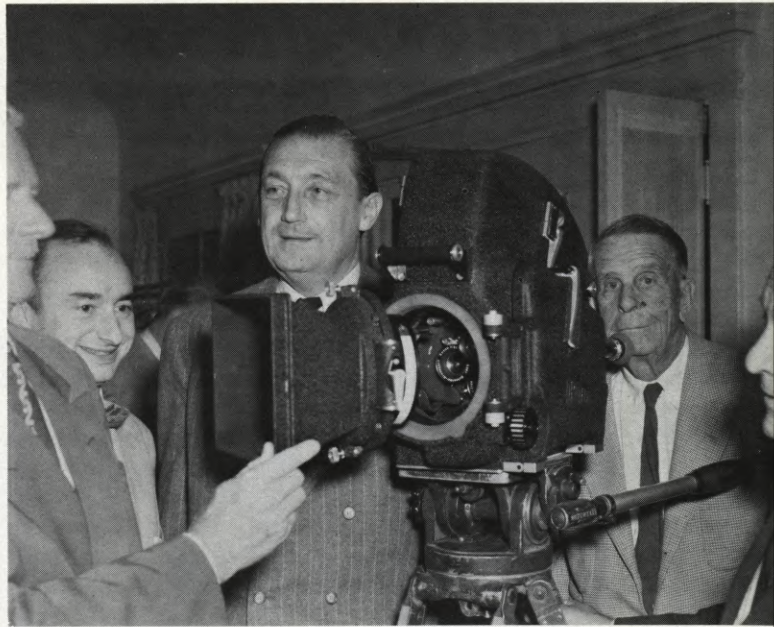
Not long after its inception, AMERICAN CINEMATOGRAPHER became a full-fledged magazine-format journal and began publishing technical and scientific articles oriented toward cinematography. The motto which read: "Give Us a Place to Stand and We Will Film the Universe" accurately reflected the lively spirit of the A.S.C.

SIX DECADES OF "LOYALTY, PROGRESS, ARTISTRY" Continued from Page 577

others who had been invited to the meeting. The fifteen men who signed the application for a charter under the laws of the State of California were Philip E. Rosen, Charles G. Rosher, Arthur Edson, Victor Milner, Joe August, J. D. Jennings, Homer A. Scott, William C. Foster, L. D. Clawson, Eugene Gaudio, Walter L. Grif-

fin, Roy H. Klaffki, Fred Le Roy Granville, Robert S. Newhard and L. Guy Wilky.

The constitution of the new organization, which was named The American Society of Cinematographers, stated its objectives to be: "To advance the art and science of cinematography and to encourage, foster, and strive for pre-eminence, excellence, artistic perfection, and scientific knowledge in all matters pertaining to cinematography . . . bringing into the closest confederation



The monthly dinner meetings of the Society have long been (and still are) occasions for the members from near and far to socialize and discuss the latest camera techniques. (ABOVE) The Hollywood members welcome distinguished Honorary Member from Munich, Dr. Robert Richter, of Arnold & Richter (Arriflex). (BELOW LEFT) The late Hal Mohr, President of A.S.C., introduces a dinner guest. (RIGHT) Associate Member Edgar Bergen and Charlie Macarthy entertain members in tent pitched on A.S.C. lawn during Ladies Night.



cinematographic craft, the A.S.C. amended its by-laws to accept second and assistant cameramen as members in a junior division of the A.S.C. An agreement was signed on January 3, 1934, between the Society and the Association of Motion Picture Producers covering the working conditions and scale of wages for first cameramen, second cameramen, still cameramen and assistants, to continue in force for a five-year period.

But, through a secret agreement with the producers and the IATSE, at a meeting held in New York on December 8, 1935, the second cameramen, assistant cameramen and still photographers were taken over from the A.S.C. to become

members of the IATSE. During the time the A.S.C. agreement was in force, meetings largely became labor and grievance forums and little could be accomplished in an educational and cultural way. Then, during the middle of the A.S.C. contract, the Association of Motion Picture Producers signed an agreement with the IATSE which caused all first cameramen to become members of the Cameramen's union.

After the IATSE had become the bargaining agent for all cinematographers, the A.S.C. returned to its original concept and, again, became a cultural and educational society.

November 1, 1920, was one of the most

important dates in A.S.C. history. On that day the first issue of THE AMERICAN CINEMATOGRAPHER appeared. It was a modest little four-page journal devoted primarily to what the various A.S.C. members were doing. But it was the beginning of a sincere move on the part of the members of the American Society of Cinematographers to render a service to its members and to other cinematographers. Within a very short time, the little magazine became more than just a "house-organ" and began publishing technical and scientific reports oriented toward cinematography. It was soon eagerly awaited for its articles on lighting,

Continued on Page 600

BRENNER

CINE SOUND

ANNOUNCES PRICE REDUCTIONS ON MARK 200 VHF FULL-DUPLEX SYSTEM:

COMMUNICATORS AND ACCESSORIES

MK200S	COMMUNICATOR WITH HS-200	\$2500.00
NB-200	NICAD PACK	120.00
AC-200	AC CONV PACK	94.00
AC-200E	AC NICAD CHARGER	12.00
HS-200	DY HEADSET SING	140.00
HS-200D	DY HEADSET DUAL	195.00
AK-200	ANT ASSEMBLY	39.00
SW-200	EXP SWITCH	18.00
XL-200	5 PIN & CORD	15.00
ANT-4C	HEADSET ANT HELEX	20.00
ANT-5C	COMM REC HELEX	20.00
DS-200	DIV COMBINER	150.00

THE NEW SWINTEK MARK 200 Full Duplex Communication System is the only closed loop inter-communication system specifically designed for clear two-way communication in high noise environments, with the added feature of carrying program material or functioning as a wireless microphone system when necessary. Closed-loop sidetone capability allows verification of the communication link and the system may be used as a conventional telephone when desired, or operated as a control-station/satellite set with several user options. It is a true hands-free intercom, although push-to-talk adaptation is provided for system expansion. The low-power, fully-portable system may be used for all communication applications, whether field or in-plant, and interfaces with many private-line systems and headsets. Swintek offers a choice of HI-band frequencies from 150 to 186 MHz, virtually free of static and/or dead spots. Any break in communication is immediately apparent due to loss of sidetone information.

Basic continuous two-way full-duplex

Unlike the conventional walkie-talkie, no transmit buttons have to be depressed to establish communications between two remote stations. This mode of operation limits false triggering of the transceiver system, thus blocking interfering signals. Any break in communications is immediately apparent at each station due to loss of sidetone information.



COMMUNICATOR

FEATURES:

- Compatible with many hard-wire PL systems including RCA, RTS, Clear-Com, etc.;
- True Hands Off Operation
- One-half mile usable range, typical
- Push To Talk for system expansion
- Data information input
- Compatible with many popular head-sets including PLANTRONICS MS50, BEYER DT109, SHURE SM12, ROANWELL, ASTROLITE, MINILITE, TELEX, etc;
- Dimensions and Weight — 7.5"L x 4.7"W x 1.9"D; 2 lbs.
- Fast change "SNAP-IN" NICAD battery Pack
- A MARK 200 System consists of two MARK 200 transceivers, antennas, batteries and carrying case, headsets

Please mail me additional information:

Service Sales Rentals

Name _____

Address _____

City _____

State _____ Zip _____

For more information on Motion Picture Equipment, Sales, Service & Rentals, call or write

5215 Wisconsin Ave., N.W., Washington, D.C.
20015 (202) 244-3800

BRENNER
CINE SOUND
Div. of Ritz Camera Centers

Angenieux Arriflex Arrivox Beaulieu Beyer Bolex Canon Cinema Products Colorfran Eclair Electro-Voice Guillotine Magna

optics, films, equipment and other items of special interest to cinematographers.

Today, THE AMERICAN CINEMATOGRAPHER is devoted to motion picture photography in all of its varied aspects. Its readers are cameramen and technicians, college students, military photographers, scientists, documentary, industrial, television and educational film producers in some eighty countries throughout the world. A perusal of the files of THE AMERICAN CINEMATOGRAPHER from its beginning to the present contains a wealth of motion picture technical history—probably more than any other journal. Unquestionably the magazine's prestige is synonymous with that of the A.S.C. for it represents an important educational contribution of the Society.

The A.S.C. membership is now world-wide and its administration is guided by an elected Board of fifteen "Governors." Candidates for active and associate membership must be approved by a two-thirds majority of the governors. Artistic and technical achievements are not the only prerequisites. Personal probity has always been an important consideration, and a "non-Communist affidavit" is obligatory. But membership in a union is not a requirement. Associate members are not directors of photography but must be engaged in work affiliated with cinematography. Honorary Membership is the highest honor the A.S.C. can bestow. It requires the unanimous approval by the Board of Governors and is given to those who have contributed notably, and fostered, the advance of cinematography. It has been bestowed only nineteen times. Three of the most famous Honorary Members were Thomas A. Edison, George Eastman and Walt Disney.

Only active members—and active retired members—may place the initials "A.S.C." after their names.

The monthly meetings in the A.S.C. clubhouse begin with cocktails and dinner and conclude with a program devoted in some way to cinematography, or to a related phase of motion picture production. The meeting room is equipped with the latest 16mm and 35mm projection facilities, including wide-screen and anamorphic. The latest motion pictures, especially any which contain new cinematographic techniques, are shown to members. So are new film stocks, new cameras and other new equipment.

The A.S.C. also publishes *The American Cinematographer Manual*, a reference book of detailed technical informa-

tion on cinematography and related production techniques. This manual has become the "bible" for cinematographers and motion picture production personnel throughout the world. A new edition of the manual is scheduled to be published late in 1979.

The patents on equipment and photographic techniques held by A.S.C. members embrace every phase of motion picture photography, and the informal contributions of A.S.C. members to the evolution and refinement of commercially manufactured equipment and materials are innumerable. There is hardly anything used today in cinematography which does not bear some trace of a contribution by A.S.C. members.

Another important educational and cultural activity of the A.S.C. is the ever-growing museum in the Society's clubhouse. It contains examples of all types of motion picture cameras and related cinematographic equipment. Students and historians of the motion picture often visit the Museum to study and examine the many rare exhibits on display. A.S.C. members frequently assist these researchers by giving them first-hand information about cinematography and related fields of motion picture technique.

Cameramen and motion picture studio dignitaries from all over the world visit the A.S.C. clubhouse when in Hollywood and are often invited to be guests at the monthly dinner meetings. The clubhouse, which was built as a palatial residence in 1903, is located in the heart of Hollywood, not far from Grauman's Chinese Theatre. It is a building of early California-Spanish architectural design.

Progress and communication have always been the goal of the Society. In 1950, a Student Film Award program was started—its aim to encourage young filmmakers in the perfection and recognition of their work. The first winner was Conrad Hall of University of Southern California. This inspired him to enter the field professionally, and he is now a member of the A.S.C. This student film program is continued today as the A.S.C. Best Photographed College Film Award. Heads of the various film schools are invited to submit their students' best work in cinematography. These are screened and judged by A.S.C. members. A handsome award is presented at a dinner meeting, at which time celebrities of the industry are invited to participate. Several past winners of the award are now actively engaged in the industry.

Also in 1960, the Society set up a Research and Scientific Committee, headed by Walter Beyer. Under his leadership many recommendations for standards were established, which have been accepted by the industry.

Two Hats



That's right, we're wearing two hats! Victor Duncan, Inc., the largest *film* equipment supplier in the Midwest is also a *video* equipment supplier.

As always, our *film* production rental inventories include the very finest in 35mm and 16mm cameras, optics, lighting, support, grip and electrical accessories. And our *check and double check* policy assures you that all equipment is as mechanically and optically perfect as skilled technicians can make it.

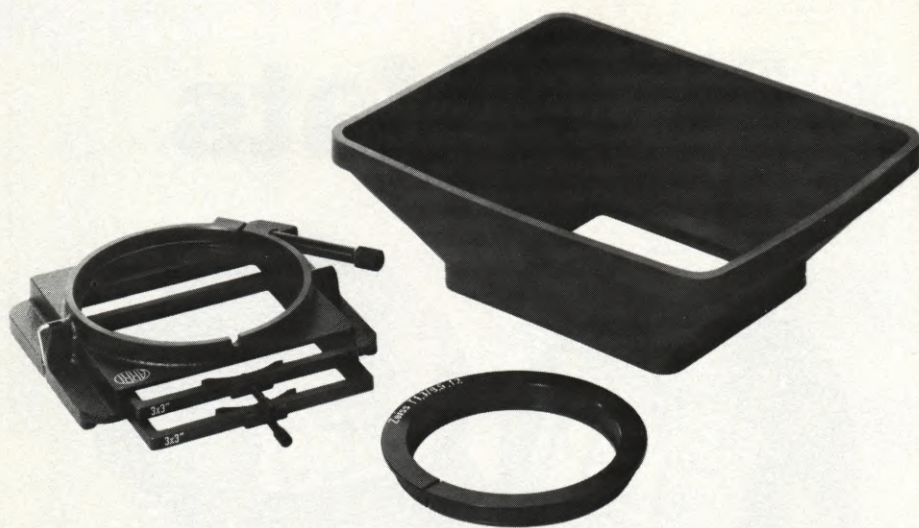
Our *video* production rental inventories are the very latest in professional ENG/EFP equipment: MNC-71CP prism optics video cameras, Bosch 1" portable recorders, JVC and Sony 3/4" portable recorders, Videotek monitors, plus the lighting, support, and accessories needed for any video production.

No matter which hat you're wearing today—*film* or *video*—contact Victor Duncan for any equipment needs.



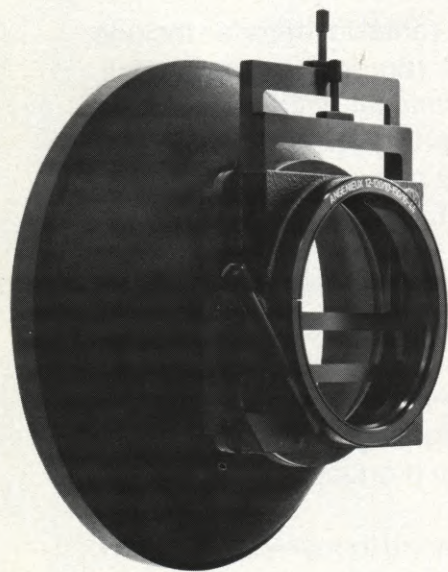
VICTOR DUNCAN, INC.
Film & Video Production Equipment

CHICAGO
200 East Ontario, Chicago, IL 60611 (312) 321-9406
DALLAS
2659 Fondren, Dallas, TX 75206 (214) 369-1165
DETROIT
32380 Howard, Madison Hgts., MI 48071 (313) 589-1900



The ARRI Lightweight Mattebox clamps onto most lenses, works with almost any camera.

The lightest weight, most compact and most economical way to mount two filters and a sunshade on all your lenses.



The Lightweight Mattebox has three basic components: a sunshade, a frame and an adapter ring.

The frame contains two 3 inch square filter-holders. The adapter-ring fits onto the back of the frame; the sunshade fits onto the front. The complete unit weighs 10 ozs and measures 3 inches front to back.

The frame, filter-holders and adapter ring are aluminum, milled for perfect flatness and finished in black. The sunshade is aluminum and black rubber.

You fit the adapter-ring over the front of the lens barrel and then clamp it tight. Various adapter rings are available, designed to fit Schneider and Zeiss fixed focal-length lenses, plus Angenieux and Zeiss zooms. You can use other lenses, too.

There's a choice of two sunshades: a 6 $\frac{3}{4}$ " x 5 $\frac{1}{4}$ " rectangular one and a round one 6 $\frac{3}{4}$ " in diameter. The round one is for use with zooms and hard lenses whose front end revolves.

Since the unit fits onto the lens, you can use it with any 16mm camera – and with several 35mm cameras, too. And with no extraneous support gear, it's easy to hand-hold any of them.

Whatever camera and just about whatever lenses you shoot with, you can use the same sunshade and the same standard 3 inch square filters – two at a time. It could simplify your life.

ARRI

ARRIFLEX CORPORATION

One Westchester Plaza, Elmsford, New York 10523. (914) 592-8510. And 600 N. Victory Blvd., Burbank, Calif. 91502. (213) 841-7070
In Canada: ARRI/NAGRA Inc., 6467 Northam, Mississauga, Ontario L4V 1J2. (416) 677-4033

At one time, an A.S.C. award for professional cinematography was given. This plan required screenings of many current films to be considered, and television exposure for the winner. We found this to be more ambitious than we could satisfactorily accomplish, so the plan was deferred in favor of the Academy Awards. To date, members of the A.S.C. have received 90 Oscars for cinematography. Many members have received special awards from Eastman House, while others have won Emmy awards for the cinematography of television productions.

Hundreds of interesting and instructive meetings have been held, providing knowledge of the newest developments in cinema. Our members learn of these innovations first. For more than 50 years of operation, most of the notable inventors, producers, directors and film stars have been our honored guests, sharing in discussions of many aspects of film production. Our motto is: "Loyalty, Progress and Artistry." We strive to apply that credo towards the perfection of cinematography.

We have grown up through orthochromatic film, cloth diffusers, tungsten light sensitive film, arc lights, incandescent lights, color films, sound pictures and scores of other techniques that have been developed over the years. These and many other subjects have been the topics of our monthly meetings. As earnings became available, the meetings also became "dinner meetings," and we pride ourselves in providing fine meals which are prepared in our own kitchen.

The membership presently consists of about 200 active and retired cinematographers. These are all distinguished directors of photography who have earned high acclaim by the productions they have photographed. Eighty associate members are invited who represent the kindred sciences of cinematography, such as laboratory executives, camera, film and lens makers and other related techniques. All these respected members contribute to the high standards of photography seen on television and film screens.

Once a year, we have our "ladies night," at which time our ladies share the pleasures of the clubhouse. They gain an insight into the A.S.C. and how their husbands spend many important evenings at the Society headquarters. They are proud that their men are members of this distinguished group.

One of the clubhouse attractions is our fine Museum of Early Cinema. Here are exhibited most all of the pioneer motion picture cameras. Also shown is the evolution of the zoom and anamorphic lenses, light meters, early projectors and a good

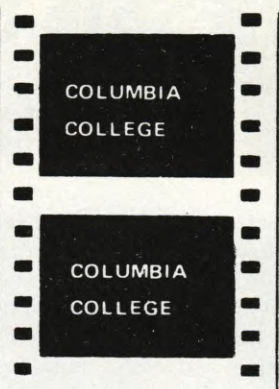
representation of the pre-cinema toys from which the idea for motion pictures evolved. This museum was enlarged by Arthur C. Miller, from a basic collection donated by Charles G. Clarke. Other donations have since been acquired of rare and unique objects, which have now made this one of the finest collections of its kind in the country. It gradually grows and is much appreciated by students who can see the actual apparatus on display.

The "Walt Disney Room," dedicated in 1976, contains a fine display of original drawings and sketches which demonstrate the care and attention that went into the films produced by this master of art and animation. Other plans are contemplated that will bring added respect to ourselves and to the film community.

PRESIDENTS OF THE ASC

Philip Rosen	1918-1921
Fred Jackman	1921-1923
James Van Trees	1923-1924
Gaetano Gaudio	1924-1925
Homer Scott	1925-1926
Daniel B. Clark	1926-1928
John W. Boyle	1928-1929
John F. Seitz	1929-1930
Hal Mohr	1930-1931
John Arnold	1931-1937
Victor Milner	1937-1939
John Arnold	1939-1941
Leonard Smith	1943-1947
Leon Shamroy	1947-1948
Charles G. Clarke	1948-1950
Ray Rennahan	1950-1951
Charles G. Clarke	1951-1953
Arthur Edeson	1953-1954
Arthur C. Miller	1954-1956
George Folsey	1956-1957
Burnett Guffey	1957-1958
Walter Streng	1958-1960
Lee Garmes	1960-1961
William Daniels	1961-1963
Hal Mohr	1963-1965
Ray Rennahan	1965-1966
Sol Halprin	1966-1969
Hal Mohr	1969-1970
Sol Halprin	1970-1973
Ernest Laszlo	1973-1975
Lester Shorr	1975-1977
Linwood G. Dunn	1977-1979
Winton C. Hoch	1979-1979
William A. Fraker	1979

Being organized on December 21, 1918, The American Society of Cinematographers is the oldest film organization on the Pacific Coast. It has been in continuous operation ever since. It is our fondest wish that the cinematographers of the future will carry on the ideals that were begun by the founding members of this world-respected Society. ■



Approved for Veterans

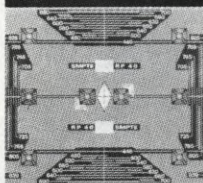
A study of the Motion Picture and Television Arts and Sciences within a degree program, taught by a distinguished faculty.

Now Registering. Write for a descriptive brochure.

COLUMBIA COLLEGE

925 No. La Brea Ave.
Hollywood, Calif. 90038
851-0550

Now!...
an ULTRA image
on the screen...
even in automated theatres



no fuzzy edges...
no dark pictures...
no "hocus focus"...
with ISCO Cinelux ULTRA
projection lenses

New Isco Cinelux Ultra MC projection lenses make a *dramatic* difference in the quality of the picture your customers see on the screen. *Sharper:* edge to edge, corner to corner. *Far brighter:*—actually 20 to 30% brighter. Clearer, more visible *contrast*. And... *pictures stay in focus*, even if your projection booth is unattended.

The Unique new *multi-coated* Cinelux Ultra has established a whole new standard of image clarity... studio quality you can use in *your* theater, on your *present* 35mm projector. You can see the proof on your screen. Call your Theater Equipment dealer, or write us for details.

ISCO Theatre Lenses

distributed in the U.S. by

Schneider

Corporation of America

185 Willis Avenue, Mineola, N.Y. 11501

FILMING "THE CHESSIE STEAM SPECIAL"

A documentary to celebrate the 150th Birthday of a railroad and also to salute a vanishing American legend: the steam locomotive

By MICHAEL L. AUTORINO

In 1977, the Baltimore and Ohio Railroad celebrated its 150th anniversary as the first common carrier railroad chartered in the United States. Today, the B & O is part of the dynamic Chessie System, a giant 10,000-mile railroad network. The founding of this pioneer rail line was commemorated in 1977 with a celebration that would eventually span two years. It was Chessie's intention to "bring the party to the people". And it did so in grand style.

The railroad assembled a twenty-car, steam powered excursion train called the "Chessie Steam Special". During its two operating seasons of 1977 and 1978, the Steam Special would carry over 55,000 passengers and tens of thousands more would come to see it pass by and wave to it. Its journey would take it through ten states in the East and Midwest and over 18,000 miles of track.

The passenger accommodations on board varied from the open-windowed

coaches which were so typical of the first part of the twentieth century, to the air-conditioned cars of the not-too-distant past. Elegant first-class parlor car and open-observation car seating supplemented the coach space, and offered riders a glimpse of life that existed aboard posh passenger express trains like the Chesapeake and Ohio's George Washington and the Baltimore and Ohio's Capital Limited.

The focal point of the Chessie Steam Special was its massive one-million-pound steam locomotive, No. 2101, which symbolized in face-to-face terms, the energy and vigor of the modern Chessie System, and yet provided a tangible link with the railroad's pioneering efforts of steam motive power.

The filming concept was to document the yellow, blue, and vermilion birthday train as it passed historic locations, rolled through scenic countrysides, and called many a person to trackside with its steam song. Quite naturally, all the people who came down to the station, as well as those who came to ride, became an integral element of the filming plan. The old and the young, the beautiful and the not-so-beautiful, and the workers and the spectators, all became the human side of this rare occasion.

Many times, before we did any shooting, we consulted railroad officials to help us determine the most photogenic spots in their respective areas. These men were invaluable with their insight and assistance. And frequently their knowledge proved to be a great help in our gaining access to difficult-to-reach locations. Also, our scouting efforts depended heavily on the use of U.S. Geodetic Survey maps, which adequately indicate all roads, rail lines, and ground characteristics.

Our 16mm camera equipment consisted of a Bolex EBM, and two Bolex Rex Vs, which were fitted with electric drives. They operated flawlessly, even though subjected to extremely dirty filming situations and heavy vibration. An Arrivox-Tandberg, together with a Sony 800TC, were used to record location sound. Despite an admixture of water, grease, cinders, and heat, these units also performed without any problems.

Some of the planned shots called for the use of custom designed and built camera mounts. A "ties eye" view shot required the use of a special mount for a



Locomotive of the steam-powered, 20-car "Chessie Steam Special", which operated during the seasons of 1977 and 1978 to celebrate the B & O Railroad's 150th Anniversary. Note the motion picture camera mounted above the coupler to shoot "locomotive point-of-view" shots. (BELOW) The ingenious hydraulic camera mount located on the side of the locomotive for filming men "driving" the train.





(ABOVE) The train steams through Harper's Ferry (West Virginia) National Historical Site. (BELOW) Like a ghostly image from some French Impressionist painting, the Chessie Steam Special slowly chugs and glides its way through beautiful downtown Wheeling, West Virginia. Since its completion, THE CHESSIE STEAM SPECIAL documentary film has been granted many prestigious awards.





A typical location set-up consisted of two cameras, plus wild sound recorded to be post-synchronized. (BELOW) Checking vertical trueness of the camera with a level for a "between the rails" shot. The ambitious production, made by a small crew from Avanti Productions, Verona, New Jersey, has enormous production value, thanks to cooperation from several railroad organizations.



between-the-rails, under-train shot. This was constructed from angle steel stock and was designed to be a universal size to fit on the varying widths of ties that are in use. This mount was securely clamped to a track tie with the camera mounted at a predetermined angle. The remote-controlled camera was positioned beneath the railhead and fixed in place with the aid of a level to check vertical accuracy.

Another trackside mount was designed and built to effect a 180-degree vertical rotation of the camera. This was also made of steel. Beginning and ending camera stops were incorporated into the design, since it was impossible to follow the subject through the viewfinder while filming and rotating the camera. In

this way a precise start and stop of the camera move was achieved, eliminating guesswork. The result is a vertical "pan" of the camera at trackside as the train rushes past, beginning with the train inverted and ending with it in normal position.

Other off-train mounts were constructed for use in a vehicle for tracking shots of the Steam Special. One was attached to a car door and was designed to easily disassemble and transport. Other camera mounts were more of a fixed, semi-permanent nature. These mounts were used to achieve smooth tracking shots of the locomotive and the train.

Three other special mounts were also

designed and built. All required remote-control operation of the camera. All were used on the locomotive for close-up cutaway purposes. And, in addition to being functional as a camera mount, all had to be unobtrusive while in place on the engine. This was so in order not to detract from the appearance of the locomotive and thus spoil the event for many of the onlookers.

A camera mount, complete with protective cover, was built of welded steel construction to house a camera with all its related control and power supply hardware. This mount was rigidly bolted to the front of the steam engine to film point-of-view shots of the right-of-way and the people nearby as the Steam Special rolled down the rails. A protective cover was used to hide the camera gear from view, and, in addition, to protect it from concrete and similar debris that were loosened by the locomotive's powerful exhaust.

This POV camera was operated "blind" by an operator who was located in the first car of the train, some 250 feet away. To avoid a voltage drop over this distance, a control circuit was employed to actuate a relay that operated the camera itself. Using this POV camera in the early morning hours enabled us to obtain footage of the engine chasing its own shadow down the rails with a magnificent plume of shadowy exhaust rising above.

Another camera mount was fastened to the side of the steam locomotive just forward of the engineer to film the engineer, himself, as he leaned out of the cab and peered down the rails. This mount, too, was bolted in place. This was due to the hard-riding qualities of the powerful and stiffly sprung locomotive. Its movement was such that anything not securely fastened would be loosened in short order. Hence, not even clamped mounts were deemed safe and satisfactory for this type of shooting situation.

A film featuring a steam locomotive would be incomplete without close-up, dramatic shots of the massive reciprocating machinery of the engine's six-foot drivers and whirring side rods. Any attempt to film this action would have to be done with a mount that could be extended and retracted by remote control. It was not practical to stop the train to fasten and unfasten a camera mount while the Steam Special was on a tight schedule. Likewise, it was not always possible to be certain that certain roadside clearance restrictions would not hamper shooting. So, in order to film within these constraints, a mount was designed to film safely and effectively. It was constructed from surplus aircraft and automobile parts.

Essentially, it was a hinged arm that could be extended outward and retracted by a hydraulic cylinder. In addition, it had the added capability to pan the camera while remote control filming was being done. It was fitted with a hydraulic pump which was operated with an independent power supply. Both this unit and the film camera were operated from the engine cab. In its extended position, the camera was placed three feet away from the engine for filming purposes and this distance yielded good results. In its retracted mode, less than eight inches were added to the width of the locomotive. This was necessary, since clearances were already close where the mount was secured to the engine.

In-cab shots were done with a hand-held camera. This was done for several reasons. First, the cab was fully occupied with the engine crew, itself, and Chessie personnel. Consequently, it was easier to use a more mobile camera to film in and around these men in a somewhat confined area. Secondly, a camera in a fixed, mounted position would have reduced the amount and variety of shots that we were able to obtain in the cab. And, lastly, it would have been next to impossible to use a tripod on the bouncing and jolting steel floor of the cab.

So, we did what railroaders have always done to smooth and dampen the effects of moving railroad equipment while they were standing; that is, bend at the knees. With a hand-held camera, then, and a battery-powered quartz light with a dichroic filter, in-cab action was shot. In order to film a three-quarter shot of the engineer, it was necessary to place my backside against the intensely hot firebox and steady myself on the always-moving cab floor. Indeed, in the engine's cab you feel as though you are part of a living, breathing steel creature as its powerful pulses throb all around you.

One of the main points of a finished film about the Chessie Steam Special would deal with the many thousands of persons who came to ride the historic train. These people would take part in a once-in-a-lifetime 150th anniversary of American railroading. Indeed, the celebration would have been incomplete without them. We would consider the myriad, representative types on board such as the nostalgia seekers, the younger set, the volunteers, the families, the couples, and the rail buffs.

During some of the excursion trips, a group of minstrel-type singers provided splendid musical entertainment for all of the passengers in each of the Special's twenty cars. Naturally, they were an exciting addition to our on-train film sub-



Checking the position of the end-of-travel "stops" used in flip shot where camera is tilted 180 degrees as train passes. The stops are the two rubber-covered rods in front of and behind the camera. The camera is fastened to a horizontally placed panhead (which the operator holds in his right hand in this photograph).

jects. This musical group, together with the interaction that they evoked on the part of the passengers, provided us with some enhancing and colorful footage.

Sometimes, many seats in one coach would be occupied by a large group of people who worked for one company. These friendly assemblages were quite spirited in nature and, quite naturally, were eager film subjects. They also gave us footage that had a happy, celebrating mood to it.

For rail buffs and steam fans, the Chessie Steam Special was almost heaven. For them, the sight, the sound, and even the smell of the steam locomotive are unequalled by any of man's creations. Their rapture was an emotion that we wanted to capture on film. They came in all shapes and sizes, in all ages,

and in some cases, extremely colorful garb. Their love of railroading could be graphically captured on film as these *aficionados* would lean out of the open coach windows with their engineer's caps, their goggles, and their jackets adorned with brightly colored railroad company patches.

Like our in-cab shooting, all on-train footage was obtained hand-held, and for similar reasons. We filmed while the sun was relatively low in the sky and used a battery-powered quartz lamp for fill purposes. Nearly all of the coach interiors had good reflectance values, so this method was effective. Also, keeping equipment to a minimum increased our chances of finding train passengers who were willing to become film subjects.

Continued on Page 616

Custom-designed and built camera mounts used on the steam locomotive, clockwise: (a) Bracket used to film closeup of engineer, (b) Adjustable angle mount for high position point-of-view of the locomotive, (c) Enclosed mount with cover, used for front locomotive point-of-view, (d) 12-volt power supply for control relays and hydraulic camera mount, (e) 12-volt controls, (f) Hydraulic camera mount.

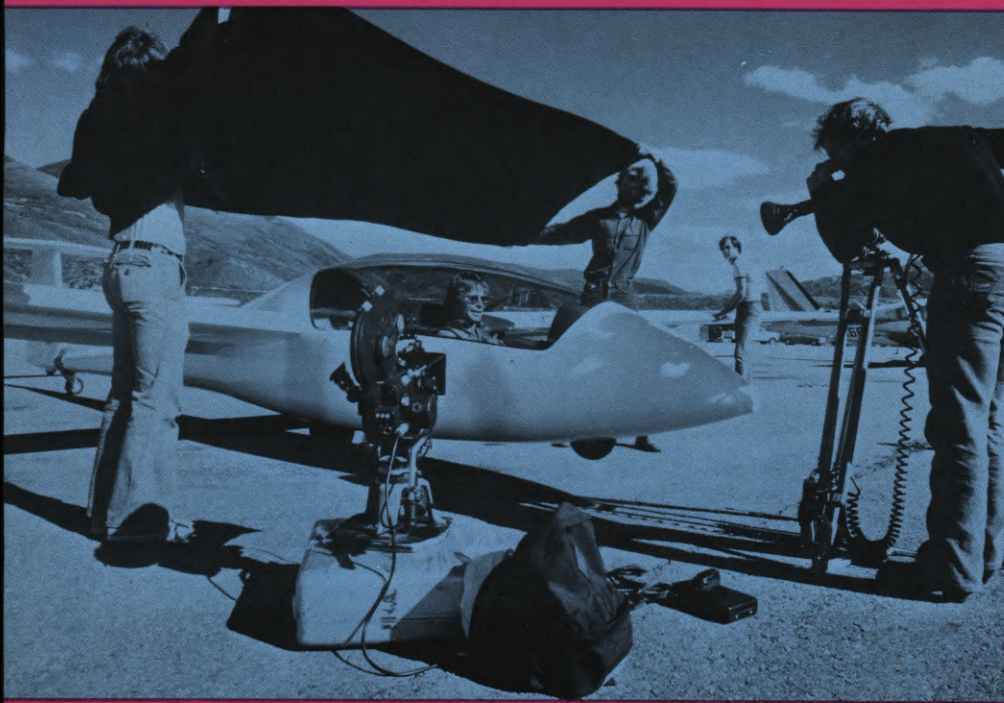


"ROCKY MOUNTAIN REUNION"
Continued from Page 590

new work were beckoning us into the future. Our next sequence might have been a bit less challenging, but it certainly did not come without its difficulties. The script called for John Denver to join swan expert, Lou Wille, in releasing back into the wilds of Colorado, a male and female pair of extremely endangered Trumpeter Swans. The men would transport the birds in separate boxes saddled upon a packhorse over hill and dale, and even through a few rivers, until they had reached the location for the release.

But before any shooting was to commence, each and every shot was logged on paper in an effort to best utilize John Denver's valuable time. The stage was set, and every piece of equipment was in its proper place an hour before John ever stepped foot on the location. Once the work began, he was ready to go home within three hours—a feat we attribute totally to pre-planning the sequence on paper.

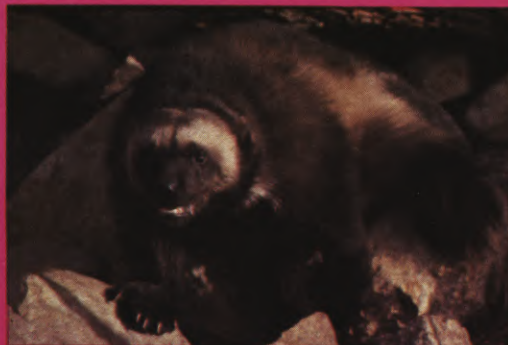
Our primary camera was the Arri BL, mostly due to its silent feature, necessary for sync-sound shooting. Several 4' X 4' silver reflector boards were brought



Crew suspends black reflection cloth over Denver in cockpit of glider, while Mark Stouffer shoots closeups of him with Photosonic camera. This is part of an ambitious sequence in which a Golden Eagle perched high in the cliffs of the Rockies spots Denver soaring below in his sleek glider. The eagle drops down to investigate and joins the glider in an airborne duet. When they both come back to earth and Denver exits the glider, the bird drops from the sky and floats onto his outstretched arm. Improbably, it all works on film.

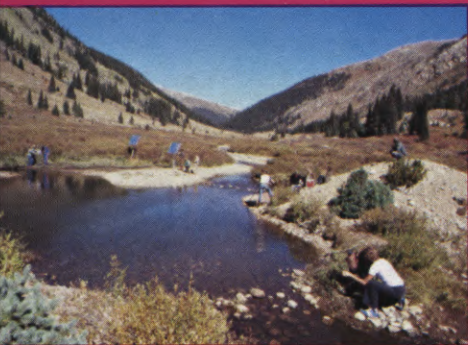


(LEFT) John King filming glider sequence shots from Jet Ranger helicopter with an Arri M camera. (CENTER) Wolverine in the wild, after having been released from its cage. The Wolverine is one of the most vicious animals on earth and transferring two of them to cages specially constructed for the filming turned out to be a harrowing experience. (RIGHT) Stouffer shooting scenes of shrews at night with unique set-up that consisted of an Arri 16BL and two Sun-Gun lights.



Several of the appealing wildlife "actors" who star in ROCKY MOUNTAIN REUNION. (LEFT) River Otter standing on a Colorado creek bank after release. (CENTER) Bull Elk in Wyoming. (RIGHT) Male and female Trumpeter Swans glide across smooth water of a Wyoming lake. The film includes magnificent slow-motion photography of these beautiful birds in flight.





(LEFT) Film crew scattered on bank of mountain lake inlet filming John Denver (blue and red wetsuit) as he prepares for River Otter release into the water. (CENTER) Denver moves River Otters into deep water for release, as Colorado Division of Wildlife people help out on camera. (RIGHT) John King (foreground) films Denver (holding cage) as he releases Otters, while Stouffer (foreground in water) shoots with underwater camera.

(LEFT) Changing locations during the filming of the Wolverine sequence called for a genuine safari in the snow. (CENTER) Mark Stouffer and John Denver discuss a shot during the filming of the glider sequence, which included the project's only instance of "cheating"—the shooting of closeups on the ground. (RIGHT) The fact that the eagle photography went so smoothly is due mostly to the professionalism of the well-trained bird, Phoenix.



in to fill the ugly shadows one must always encounter when working with the full intensity of the sun. The most specialized piece of equipment used for this shoot was our pair of Audio Radio Microphones channeled into our Nagra recorder. They were special because, unlike most radio mike units; we were able

to send the signal from two lavalier microphones into a single receiver wired to the recorder. These RMS8F mikes deserve nothing less than praise, and should one care to track down a set, they are manufactured by Audio Limited in London, England, at a cost of around \$2,000.

Following a fast-moving session of sync-sound shooting, John and Lou were standing on the bank of a beautiful Colorado river about to free the pair of rare Trumpeter Swans. As the lids came off the boxes, the two men each grabbed one of the 20-pound birds and the resulting struggle made the whole day worth-

(LEFT) Moving a crew of 15 people, three production vehicles, a trained badger, two prowling Wolverines and 1,500 pounds of equipment to timberline through the snow proved to be a nightmare. Only two of the vehicles made it to the top on the snow-covered Montezuma Basin road. (RIGHT) Mark Stouffer filming dead White Pelican on island near Fort Collins, Colorado. The bird was a victim of parent abandonment, a situation that is common in large colonies.



while. As the swans kicked and squawked for freedom, our cameras caught on film a very exciting conclusion to all the preceding travel shots. As the pair of birds glided onto the water, Colorado was blessed with a native species extinct in the state for well over a century.

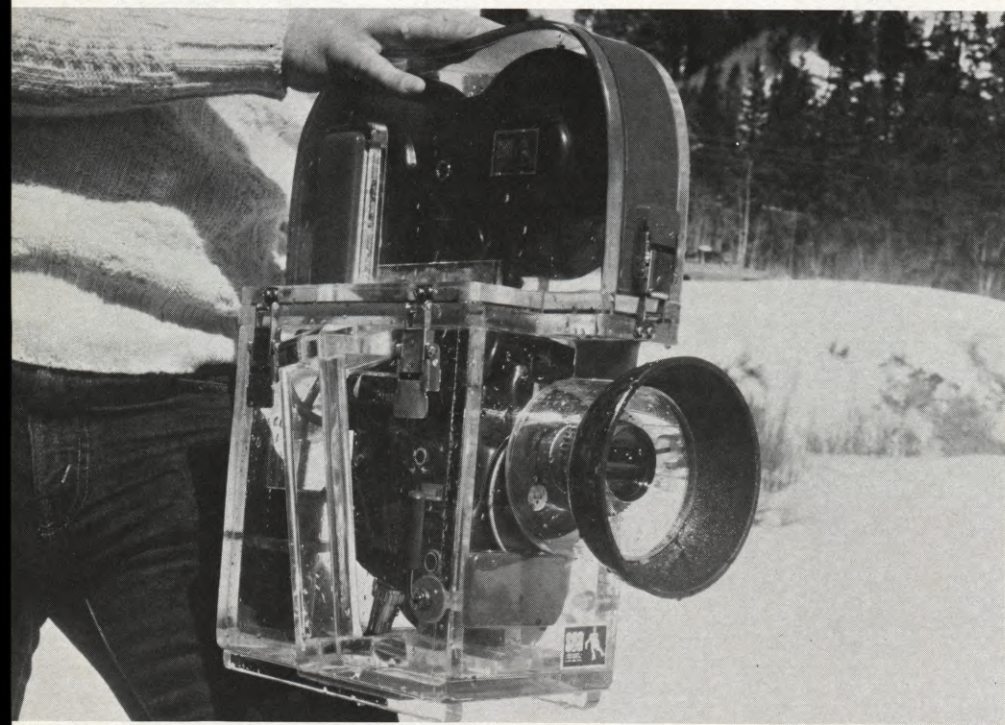
To add fuel to this already unique sequence, we then traveled to Yellowstone National Park in Wyoming to photograph wild species in their natural habitat. While our pair back in Colorado prepared for the coming Winter months, we were focusing our telephoto equipment on Trumpeters in the far North. Magnificent slow motion flight photography, cute in-

fant swan scenes and an underwater peek at their mountain lake home provided what we considered to be a complete Trumpeter Swan story for the film.

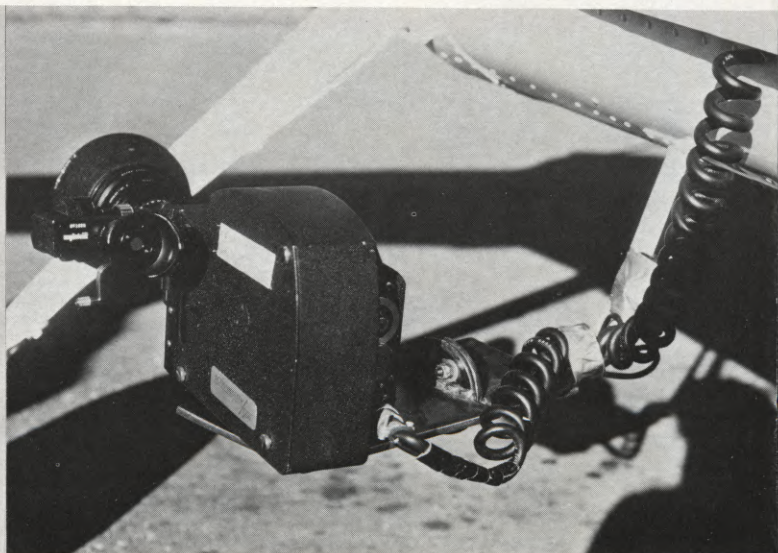
While in Wyoming, we also put to use perhaps our favorite piece of special effects equipment—a single-frame time-lapse system. Although homemade in origin, it seldom fails us and to date has rendered some spectacular time-lapse sunrises and sunsets. We would later use these scenes of rolling clouds and a fast moving sun to lead into and out of the program's commercials. The device is nothing new to the film industry, but the

way one uses it makes all the difference. As a rule of thumb, we usually choose to condense the 45 or so minutes of colorful sunrise or sunset time into a brief 15 seconds of screen time. It is a delicate decision with time lapse photography, as a movement slightly too slow, or slightly too fast, can destroy the visual effect.

As quick as we could roll back into Aspen, we were onto planning our next sequence. It would be the release of a male and female River Otter into a lake outside of Aspen. The first problem was to obtain a suitable pair to release. They had to be wild and able to fend for themselves once back in the Rockies, so with much assistance from the Colorado Division of Wildlife, trapping began in Newfoundland until our pair was caught. They were rushed via air freight to town, and only a couple of days later John Denver stood on the bank of a mountain lake preparing to release the Otters with the help of two men and a woman from the Division of Wildlife. The animals had to be released into the water so that they would know this spot was to be their new home. So, the chore called for John to don a wetsuit and paddle the cage containing the Otters into the middle of the lake. The situation provided for some comical relief as we watched John struggle into the skintight wetsuit. Again, our sync-sound system was used in conjunction with the radio mikes. Additionally, we stationed a Photosonic far enough away to eliminate any camera noise while providing a "master" shot of each scene. Reflector boards were again necessary to balance the light ratios on each person's face. Our normal key/fill called for a 1½ f-stop difference. Anything less feels too hot and anything more builds



(ABOVE LEFT) Close shot of the 16mm Beaulieu camera in its Sea Research and Development plexiglass underwater housing. This rig not only works extremely well for underwater work, but is considered a bit more expendable than the more expensive camera equipment on the shoot. (BELOW LEFT) Photosonic camera mounted to Cessna footstrut for filming of Greenback Trout planting sequence. (RIGHT) A closer look at the mount, which was built for filming dives on the lake.



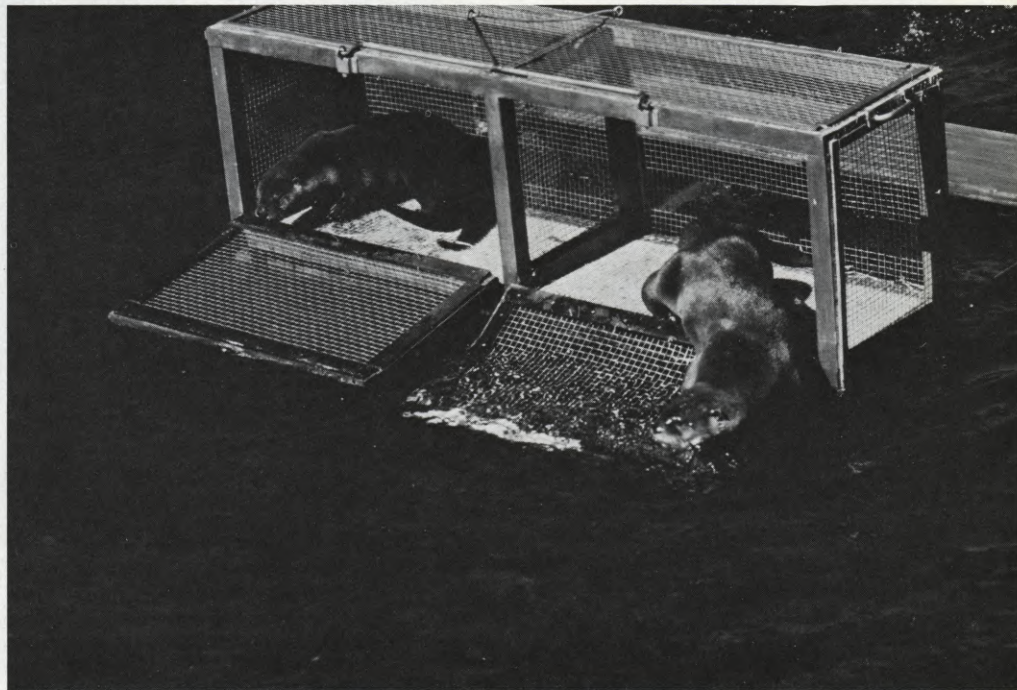


(LEFT) Ernie Wilkinson (lead), John Denver (center) and David Huie (rear) transport Wolverines to the location in the remote Rockies where they are to be released. (RIGHT) Crew member removes plastic camera cover for Mark Stouffer during filming of Wolverine sequence. The crew was astounded at the amount of deep snow that had fallen during the night. The penetrating characteristics of the cold and dampness made all of the cameras fail one-by-one, but not before the film was "in the can". (BELOW RIGHT) River Otters take quickly to the water, as Denver pulls the release cord of their cages from underwater.

too much contrast for portraits.

While the shooting on the bank called for nothing unusual in the line of equipment, once underwater, it was a different story. As with most of our underwater photography, we brought out our 16mm Beaulieu in a Sea Research and Development plexiglass housing. With all due respect to the Beaulieu company, we use this camera underwater so in case of a flooding, a principal piece of our equipment is not lost. Instead, we ship it in for repairs and carry on with our Arri and Photosonics. In the same light, our Beaulieu is also used in conjunction with our single-framing time-lapse system. Thus, one person can be shooting time-lapse scenes, while the others are off working with the other company cameras. In short, if a camera is to go underwater, be gaffed to the side of an airplane, or jeopardized in any fashion, chances are good that our Beaulieu will be elected.

Once underwater, it was quickly determined that all of the commotion in the water was starting to stir up bottom sediments and thus reduce visibility. To combat this anticipated problem, we brought out a 1-gallon container of what is known in the contractor's world as Nalcolyte. It is a coagulant which when thrown into the water causes the particles of mud and the like to cluster together and drop once again to the bottom. It does not work miracles. However, it cleared the water just enough to get the job done. Contractors use it when they are working in a stream or river, both for the sake of the work to be done, and that of the fishermen and swimmers downstream. It is absolutely potable which means it does no harm to the terrestrial or aquatic life in the



area.

As John yanked the trip cord to the cage doors, three cameras covered the action, two topside and an a third underwater. The Otters wasted no time in exiting the cage and taking to expressions of new-found freedom. For as long as he could, John stuck with the Otters and their underwater antics. The sequence was soon over and everyone, including John, helped pack the gear and headed for home. As with each time we shoot in wilderness locations, we go to special pains to leave things just as we found them. Only this time, we left knowing that the area could never be as it was before. Instead it was a form of life richer, a life

which would only multiply with the passing of each new year.

With John Denver leaving town for a couple of weeks, we took advantage of the time by shooting a sequence for the film which did not require his presence. By canoe, we paddled as quietly as possible to a small island outside of Greeley, Colorado. It was where the rare White Pelicans nest and spend their Summer months. As we unloaded the equipment onto the sandbar, we could hear them making all sorts of noise on the far side of the island. We had not been spotted or they would already be in the air. Like a group of Indian Braves stalking their quarry, we seemed immune to the biting

flies and cockleburrs puncturing our bare feet. We knew that if the birds spotted us, it could be hours before they would return to the island. Finally, we found cover in a pile of aged driftwood, and as soon as we had assembled the camera units, we were rolling film. I think watching the young Pelicans beg food from their parents and the everyday territorial disputes which occur between the adults was one of the funniest things I have ever seen. The birds are so large and clumsy that just about anything they attempt on the ground looks like a comedy act. Once in the air though it is a different story, for few birds fly with more grace or endurance than the White Pelican.

By nightfall, our Photosonics equipped with our longest optics had everything we had seen permanently on film. In the story line, the White Pelican represents a "success", because rather than vanishing with each new year, they are growing stronger as a direct result of man's willingness to protect their island nesting grounds from both predatory animals and human interference. This sequence was later combined with comical music and John's voice-over narration to render a comprehensive look at this unique species.

At this point, we could almost see the light at the end of the tunnel. With five of our eight sequences now in the can, completion of the shooting before the onset of Winter seemed possible. Not only were we thinking about the difficulties of working in the snow, but also a great deal about the welfare of the animals we were releasing. An animal released in the Autumn has enough time to gain its wits and prepare for the harshness of Winter, but one released in a world of snow would have much trouble

finding sufficient food and shelter to stay alive. In addition, how were we to air drop thousands of infant trout into an inaccessible mountain lake once the surface was frozen over? The answer was, plainly and simply, that we could not, so we were forced to move with lightning speed, for already, sheets of ice were beginning to form in the shallow waters of the lake we had chosen.

Greenback Trout have been extinct in

Colorado practically since the Gold Rush. While overfishing and pollution took their toll, the primary reason bringing about their extinction was the introduction into the state of more competitive trout species. These non-native, man-introduced species quickly spread and literally overran the Greenbacks, causing their extinction. Deciding to replenish the lakes and rivers of Colorado with these rare fish, the Colorado Division of Wildlife



(ABOVE RIGHT) The camera-wise Golden Eagle, Phoenix, does his thing in front of Mark Stouffer's lens. (BELOW LEFT) The most disciplined Golden Eagle in America, Phoenix lives with his owner and trainer, Dav Siddon, in Oregon. So pleased was Denver with the sequence in which he and the eagle glide through the skies together that he wrote an original song for it entitled, "I'm Flying Again". (RIGHT) In wetsuit and fins, Mark Stouffer explores the "set" in preparation for shooting an underwater sequence.



offered us thousands of the young "fry" which we were to drop from a specially-adapted Cessna airplane into a carefully selected Rocky Mountain lake. We had to get them up high so that they wouldn't be fished out the following year. Also, as they began to multiply, they would bleed down through the rivers into the lower altitude regions.

With the difficult shooting of the Peregrine Falcon now completed, it was time to concentrate on the story line sequence in the script. John Denver was to visit the renowned Peregrine Falcon Research Center in Fort Collins, Colorado, and take a close look at their success with breeding and raising these endangered raptors.

The sequence was first worked out completely on paper, and as usual, went smooth as silk. John arrived and learned from talking with Jerry Craig and Bill Burnhan how the facility operated. He even got to handle a living Peregrine Falcon, but most important, the incubating eggs which secured the vanishing bird's future.

Perhaps the most unique feature of the shooting was the interior photography technique. The sequence called for John to enter a laboratory environment and, through the use of an extremely intense light device known as a "candler", backlight a Peregrine egg, thus enabling him to actually see the living embryo in the shell. To create the feeling of a laboratory, we decided to filter all the lights a rich red and allow the light bleeding from the other rooms and windows to go greenish-blue. Fortunately it worked, and looked very laboratoryish.

Our second interior feat was to film the Peregrine embryo twisting and turning within the shell. To accomplish this, a black poster board was funneled large at one end and extremely small at the opposite. We then gaffer-taped the egg to the small opening and positioned it in front of a 1,000-watt bare tungsten bulb. The Arri-flex was used with a selection of closeup lens diopters to photograph the unusual sight through the large opening of the funnel. The technique worked quite well and in the end we were rewarded with the footage we needed. Later, these embryo close-ups were cut with the sync-sound scenes of John and Bill Burnham candling the Peregrine eggs.

As we called a wrap on the day's work, everyone was quite excited knowing that only one sequence remained to be shot—and it promised to be a doozy—not only because it called for the handling and release of two adult Wolverines, but also because the snow was beginning to fall quite heavily.

I was trying to sleep in for the first



(ABOVE) Electronic timing box which controlled the Beaulieu single-frame, time-lapse system. (RIGHT) Single-frame solenoid device for use on the Beaulieu. Both devices were "homemade".



morning in months when an alarmed air freight supervisor called me from the Denver airport with information that a couple of wild and dangerous animals like he had never seen before were being held in his freight room for inspection and pick-up. "They've been growling, scratching and biting since they got here, so you'd better come and get 'em," he told me. I quickly assessed that our Wolverines had arrived from my friend, Al Oeming, in Canada. The saying that, "there is no rest for the weary," must have originated from a filmmaker, for it has always been my professional experience. As quickly as we could get orga-

nized, we were off to Denver to collect the beasts.

So, the pieces were put together, and following several days in a machine shop making the appropriate plane exterior camera mounts, we were ready for John to step into the picture and execute the air planting of the Greenback.

With two cameras, one belly-mounted and one footstrut-mounted, both the fish

The film crew in general chaos during shooting of the River Otter sequence. Actually, this crew moved with extraordinary speed and efficiency, given the terrain and weather difficulties encountered. Time was of the essence, not only because of network deadlines, but to protect the animals involved from the harshness of the rapidly oncoming winter.



SHOOTING IN THE **NORTHERN CALIFORNIA** AREA
 CALL **CINEMA SERVICES CO.**

of San Francisco for all your

Lighting equipment, grip equipment, brutes,
 HMI lights, generators, grip trucks

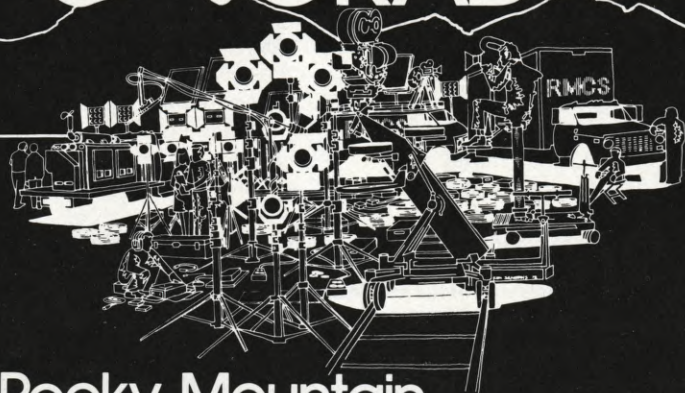
WRITE OR CALL FOR PRICE LIST:

CINEMA SERVICES CO.

3866 Bayshore Blvd., Brisbane, CA 94005
 Phone (415) 468-5220

Distributors of Mole-Richardson Products

If you're filming in
COLORADO



Rocky Mountain
CINE SUPPORT
 Puts it all together

• 16 & 35 mm Camera Rentals

- **CHAPMAN** Hustler Dolly
- **COLORTRAN** Crab Dolly
- **MOLE-RICHARDSON** Lighting Equip.
- **MATTHEWS** Grip Equipment • Grips
- Cameramen and Assistants • Gaffers
- 750 AMP High Altitude Blimped Generator
- 1½ Ton & 5 Ton Equipment Trucks
- Sound Engineers • Make-up Artists
- Script Coordinators • Production Managers
- Pre-production and Scouting Services

Call or Write for Information

ROCKY MOUNTAIN CINE SUPPORT 338 South Pearl St. Denver, Colorado 80209

(303) 795-9713

streaming from the underside of the plane, and the actual point-of-view lake dives would be covered. A cameraman positioned on the ground at the lake site would cover the approaches and dives on the lake, and inside the cockpit sat myself and John King.

I don't know if you have ever tried to squeeze a pilot, John Denver, a cameraman and soundman with all the necessary equipment into a small Cessna, but if you haven't, let me tell you that it is VERY COZY—in fact, it might have been the tightest fit I have ever attempted. And when you amplify the uncomfortableness of this situation with half-a-dozen hair-raising dives on a lake, you quickly learn what documentary filmmaking is all about! To say the least, I got airsick, but fortunately not before the shooting was completed. It went beautifully, and each camera position provided valuable footage for the final editing. At the end of the day, once my equilibrium had returned, I was struck with a very satisfying feeling. Not only because this phase of the shooting was now behind us, but also because the visual memory of those long-extinct Greenbacks reuniting with their native home was still fresh in my mind. We had given both man and the Greenback Trout a second chance.

Following a brief period of rest, the equipment was once again assembled as we took off for Missouri where we would hopefully film Peregrine Falcons diving on and hitting their prey in spectacular midair collisions. Ready with 300 frames-per-second and a battery of telephoto lenses, we staked out for the rare Peregrine to make its appearance. The hours passed into days, and a week later, still not an inch of film had been run through our cameras. Our trigger fingers were getting itchy to say the least, and two days later we aborted the mission.

Returning to Aspen, we decided to take another approach to the situation. So, we were off again, this time to the Peregrine's nesting grounds situated in the cliffs of southwestern Colorado. We arrived the following day, and within the week had the necessary film footage in the can. For the really magnificent closeup work, we decided to cheat a bit by asking Falconers, Bill Heinrich and Dan Cover, to provide the services of their trained Peregrine Falcons. We simply took their birds to an open field, tossed a pheasant or mallard duck into the air, and shot the action. Due to the over 200 mile-per-hour speeds the Peregrine achieves in its dives, a shoulder-held camera was mandatory. Even while shooting with a 230mm or 385mm telephoto lens, it was possible for hand-held camera work, due to the smoothing out effect that 300 frames-

per-second renders on film. Even though the actual "hits" would only take a second or two, the high-speed photography would always yield a 10 or 15-second look at what was going on. The Photosonic is a lovely camera for nature or animal photography—especially behavioral work, as it allows the audience time to study a particular animal movement.

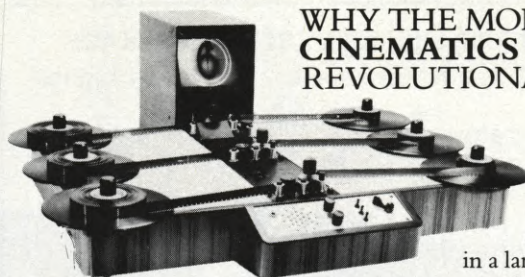
Following a very harrowing experience, we had the animals transferred to the cage we had carefully constructed for the film sequence. It provided for the remote control release of the spring loaded doors by means of a long cord—an important feature considering that the Wolverine has been declared one of the most vicious animals on earth!

In any case, the location for the release was a spot near timberline. It posed some difficulty because the snow continued to fall and it would be highly questionable if we would even be able to reach the site. Due to the worsening weather conditions, our shooting schedule was moved up to the following day. John Denver was in Los Angeles recording an album. However, he promised to appear early the following morning. In that regard, we knew we could count on him because never had we worked with anyone more dependable than this man. He always did what he said he was going to do, and if he did not, there would be a good reason for it. In short, John is a Director's dream of an actor. He was all help throughout the entire production . . . and this day would be no exception.

It was 3:00 a.m. when my alarm blared "GET UP!" into my sleeping ears. As I stumbled out of bed, I tried not to think about what we were soon to do. Moving a crew of 15 people, three production vehicles, a trained badger, two growling Wolverines and 1,500 pounds of equipment to timberline in pitch darkness would be a nightmare to any film Director. And this was my day. It took about six cups of coffee before I felt ready to tackle the event, and by 4:30 a.m. we were revving our 4-wheel-drives in preparation for an assault on the snow-covered Montezuma Basin road. An hour later, two of the trucks had made the top, the third a victim of Darwin's "survival of the fittest" theory.

As dawn began to break, we were astounded at the amount of deep snow that had fallen in the night. Every recognizable landmark was concealed and it was impossible to reach or even locate the areas we had chosen weeks before for the shots. Quickly we went to work in an effort to prepare for John Denver's arrival. Everyone was rather somber about their chosen duty, for we all knew that if the snow did not let up, it would be impossible for anyone to get in. We had to gamble the risk . . . just in case things did

WHY THE MONEY-SAVING NEW CINEMATICS SIX-PLATE IS NOT REVOLUTIONARY.



We would like to be able to say the new Cinematics six-plate is revolutionary, but all we did was expand our modular four-plate machine and put it in a larger case. And even our four-plate wasn't revolutionary when we introduced it two years ago. It simply does everything you expect a flatbed to do (very reliably as it's turned out) for about half what you'd expect to pay. Well, maybe just a *little* bit revolutionary?

Our detailed illustrated brochure reveals how we do it. Please send for one. We'll include complete pricing.

Modular Super-8 and 16mm. About \$3500 to \$5300.

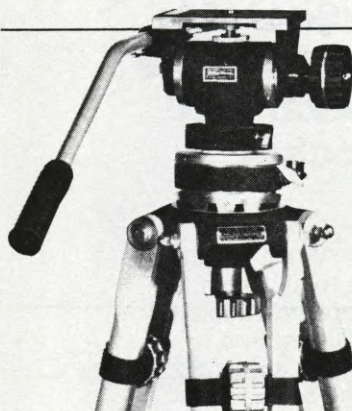
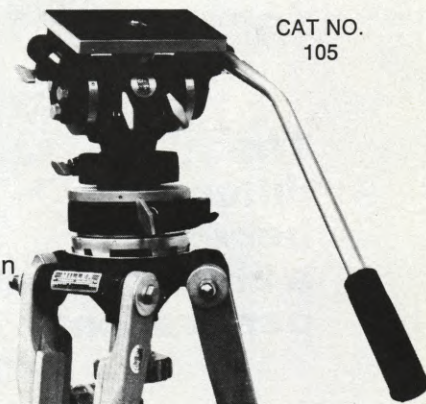
Box 16045
Baltimore, Maryland 21218
(301) 889-7900



FAR AHEAD... FLUID HEADS from MILLER

THE ORIGINAL FLUID HEADS PREFERRED BY PROFESSIONALS

- Miller Fluid Heads, number 105 and 107 provide the versatility and mobility needed by the professional filmmaker. Not only do these Fluid Heads have full fluid action but also have the Slip Pan Unit that facilitates the filming of fast moving objects, racing, sporting and rally events.
- The No. 105 is especially suited for use with the Arriflex 16 (or 35mm with adaptor plate), lightweight Auricon, Eclair, CP16 or similar cameras with magazine and motor incorporated drives. Also TV Cameras.
- Pans 360°, Tilts past 90°. Comes with tension control screws for Pan and Tilt units, and 360° azimuth scale for Pan. Optional right or left handle position.
- Recommended maximum load: 30 Lbs.
- Weight: 9 Lbs. 4 Oz. Height: 6½ Inches



- The No. 107 incorporates all the features of the No. 105 with the addition of the Positive Heavy Duty Tilt Lock. This added feature permits the use of heavier cameras.
- Recommended maximum load: 30-40 Lbs.
- Weight: 9 Lbs. 4 Oz. Height: 6½ Inches



Miller Professional Equipment

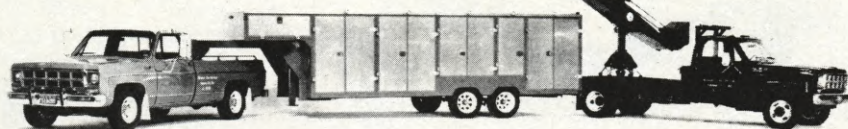
10816 Burbank Blvd. / No. Hollywood, CA 91601
Phone (213) 766-9451

COMPLETE LIGHTING AND GRIP EQUIPMENT RENTAL PACKAGE

featuring Mole Richardson 10K's to Inky's and L.T.M. HMI Lights

Insert Car, Dolly, Generators
Kenworthy Snorkel Camera Systems

18ft. Camera Crane



Contact John Burkley for brochure and rate information

MIDWEST CINE SERVICES

626 EAST 75TH STREET KANSAS CITY, MISSOURI 64131 (816) 333-0022

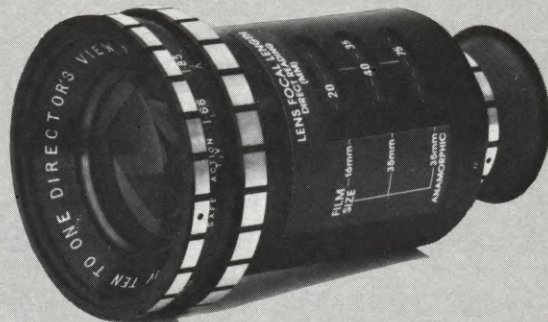
**mark IV
director's
viewfinder**

10:1 zoom

An indispensable tool for the director or cameraman in composing scenes and choosing appropriate lenses. Full 10:1 zoom in both 35mm and 16mm formats.

PRICE: \$335.00

(Includes neck strap and case)



U.S. and Foreign Patents Pending

alan gordon enterprises inc.

1430 N. Cahuenga Blvd., Hollywood, Calif. 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

**The
difference
between
a film with torn
perforations**



**and a
projectable
print can be a
LaVeZZi VKF
sprocket**

LaVeZZi's new "VKF" sprockets are adding life to all 35mm film, CS CinemaScope and standard KS film, by reducing film damage caused by abnormal contact with the sprocket.

Brochure L70-6 tells how you can add reel life to film, reduce costly film maintenance, and minimize projector wear. Call or write for it.

LaVeZZi
machine works, inc.

900 North Larch Avenue
Elmhurst, Illinois 60126
(312) 832-8990

break.

My first blow came when our Nagra failed to operate with no apparent cause. The second came when the falling snow caused one of our Photosonics to cease working. And the final blow came when 9:00 a.m. arrived with the heavy snow still coming down. The situation looked as bleak as any I had seen before. Then, suddenly, as if God-sent, the snow stopped, the clouds parted, and seemingly from Heaven, John Denver's jet-powered helicopter came into view. As the engines whined an echo through the mountain valleys and kicked a halo of snow a good 500' into the air, everyone scrambled to their duty in preparation for the landing. After several dangerous attempts, the helicopter was down and we were ready to shoot. I knew from past experiences in working with John that he had a reputation for bringing good weather with him, but this was too much.

With no tape recorder and only a two-camera system, we began. Our first mistake was that we had underestimated the difficulty of carrying the cage full of Wolverines through the deep snow. They were heavy and the terrain steep. It kept everyone, especially John and the two men who helped him in the sequence, breathing heavily. About an hour into the shoot, our Arriflex BL started running at around 12 frames-per-second and then finally stopped entirely. With only one camera left alive, our Photosonic, we began to get nervous about the remaining shots. The snow had begun to fall once again, and we took every precaution to shelter the system from the dampness. Large sheets of plastic were suspended over the camera, for if it were to fail, we would be forced to reshoot the entire sequence.

John was being led by Ernie Wilkinson, a government trapper for over 30 years, to a spot where Ernie recalled trapping one of the last Wolverines in that spot of the Rockies. Following much toil and trouble, the site chosen for the release was reached. The men made short order of preparing the cage for the final moment. They moved a good distance uphill from the cage, and let us know they were ready to yank the cord leading to the mechanism on the doors. As John triggered the doors open, the two Wolverines literally bolted for freedom. They moved across the snow like speedboats on the water. Within a couple of minutes, they were gone . . . leaving only their tracks in the snow and the film in our camera to tell the story. As John King focused for what he felt would be the last shot of the day, our final camera sputtered and died. Never in my entire life have I encountered such a high degree of camera failure. I attribute our problems to

both the cold and dampness of the day. I do not blame any of the camera manufacturers for the malfunctions, but rather the penetrating qualities of cold and wetness. We later learned that rather than a short in any electrical component of our Photosonics, the extreme cold had caused the internal thermostats to freeze open and thus drain all of our batteries. Of course, in the field, we could not determine just what the problem was.

As the helicopter braved the snowfall in making a hasty retreat, all of us left behind threw a mild celebration for completing the shooting on the film and then we started back down the mountain.

Being as carefully pre-planned as this film project was, the editing and post-production went like a breeze. The entire picture and soundtrack was cut on our 16mm 6-plate flatbed Moviola M-77 Console Editing machine. It was mixed and printed by Western Cine in Denver, Colorado, and was telecast over the ABC-TV network on April 29.

Aside from the personal reward one receives from completing any major project, we all share a very special feeling from this particular film, for each time we reflect on any phase of the production, we cannot help but think of the new life we have brought back to Colorado through this ROCKY MOUNTAIN REUNION. ■

"ROCKY MOUNTAIN REUNION"—CREDIT LIST

Produced & Directed by	Mark J. Stouffer
Executive Producer	Jerry Weintraub
Director of Photography	John E. King
Associate Producer	David D. Huie
Photographed & Edited by	Mark J. Stouffer John E. King David D. Huie John P. Gilligan
Written by	John P. Gilligan
Original Music Composed & Conducted by	John Murtaugh
John Denver Musical Themes Arranged by	John Murtaugh
Still Photography & Production Assistant	Deborah Beaudet
Special Thanks to	Colorado Division of Wildlife
Lab Services & Re-Recording by	Western Cine
Production Company	A STOUFFER ENTERPRISES/ JOHN-JER Co-Production (copyright: 1979)

IN MEMORIAM
Lucian Androit
1892-1979



TYLER
camera systems

**VIBRATION ISOLATION HELICOPTER CAMERA MOUNTS
FOR 16 / 35 / 70 mm AND TV PHOTOGRAPHY**

Hollywood 213-989-4420 — San Francisco 415-864-4644 — Mexico City 905-559-4845 — New York 212-431-3930
Miami 305-757-5988 — Boston 617-266-7468 — Denver 303-777-7699
Atlanta 404-451-4624 — London 01-452-8090 — Paris 328-5830 — Sydney 428-5300

Send for brochure — Tyler Camera Systems, 14218 Aetna Street, Van Nuys, California 91401 U.S.A.

HELICOPTERS CAMERAMEN CAMERA PILOTS

**Your equipment.
It's only as good
as the lab
in back
of it.**



You invest the most you can afford in your equipment. After all, it's what you make your living with. For the same reason, you spend precious time selecting a lab that is of the same caliber as your equipment.

Photo Processors follows this same philosophy. We've invested in the finest color equipment available. Our team of color specialists is among the best in the country. They are here to assure you that you will receive the best end-product possible. Send your next job to us and let us prove it. We can back you up.



photo processors inc.

Box 2116A, Austin, Texas 78767
AC 512-472-6926

**Nine ways
PALMER FILM SERVICES
can work for you:**

- 1 Complete Range of 16mm Laboratory Services:** Color and black & white processing and printing, edgenumbering, magnetic striping, opticals, and special effects. Many Super 8 services too.
- 2 Video Transfers:** We make high quality 16mm video to film transfers, using the Palmer Video/Film Camera—internationally known for excellent picture and sound recording characteristics.
- 3 Mail Order Service:** Because Palmer Films is centrally located in San Francisco (½ hour from International Airport) we can serve customers everywhere promptly and efficiently. Write for free Price List including Laboratory, Editorial, Art, Video and Sound Services.

(TO BE CONTINUED)

to get the whole story, call:

W. A. PALMER FILMS, INC.

611 HOWARD STREET • SAN FRANCISCO, CA 94105 • PHONE (415) 986-5961

San Francisco's complete 16 mm film service

16mm to
super
super **8**mm
reduction
prints

Russell Film Lab has added Super 8 mm reduction printing to its list of complete laboratory services.

For full details and information call toll free ...

1-800-874-4311

In Florida call 904-389-2316



**RUSSELL FILM
LABORATORIES**

P.O. BOX 6938
4805 LENOX AVENUE
JACKSONVILLE, FLORIDA 32205



"CHESSIE STEAM SPECIAL"

Continued from Page 605

Not all our subjects were eager to be filmed, however. Such was the case with the Chessie System's widely-loved corporate symbol that adorns everything from letterheads to locomotives: Chessie the cat. After a good deal of searching, we located a cat almost identical to Chessie in appearance. It was our intention to place the cat near a coach window and film her as she duplicated the famous "Sleep like a Kitten" pose that the C & O began using in 1933 to advertise the comfort of its new air-conditioned sleeping cars. Fortunately, we were able to use one of the bedrooms in the luxurious observation car for filming purposes. Our film star needed nearly a full day to feel at ease in her new domain. After countless, frustrating attempts at filming our feline friend throughout the morning as she stubbornly refused to act as Chessie should, we gave her, and us, a rest. The shots we had filmed with her nervously moving her tail from side to side, jumping from the lounge seat to the bed, and hiding under just about everything, proved just about worthless.

Then, later in the day, Chessie informed us that it was her "nap time", and she consented to look like the sleepy kitten of C & O fame. We placed her on a pillow that was in front of a window, covered her with a white towel, and turned on the quartz lights. There she stayed like a cat basking in bright, warm sunshine. She extended her left paw like all good Chessie cats should while riding on the Steam Special. Our eight-hour-long, several-hundred-foot, ten-second shot was on film at last. And Chessie was asleep, dreaming of her new glory.

One of the most rewarding aspects of the shooting effort was filming the kids. Few human expressions could match the awestruck looks on the faces of youngsters who are seeing a massive steam engine pulling a long passenger train for the first time ever. Once, we filmed two boys who were racing across a cow pasture to get near to the train as it passed their locale. The result was a shot that graphically illustrated the magnetic appeal of the Chessie Steam Special as it traveled its historic course.

At the suggestion of Franklyn J. Carr, Director of Visual Media and Design for the Chessie System, we returned to this farmland setting some three months later. We hoped to find the two youngsters and then film close-ups and slow motion shots to improve continuity. Our quest was extremely profitable, since we retraced our steps, found the boys, who happened to be brothers with All-American good looks, and who were ex-

tremely willing to become part of a film about the Chessie Steam Special.

After we had told them about the train and what we were doing with our filming, the two boys changed their clothes to match what they were wearing that day when the Steam Special thundered past their home. They ran back and forth across the field to duplicate the action of the original day. We filmed medium, close, and slow-motion shots of the youngsters as they raced to the tracks. Then, they were filmed close-up as they recreated watching the Steam Special pass. My wife, Marianne, ran along the tracks so that the boys could follow her with their eyes as if they were looking at the train roll past.

Nearly two weeks were spent filming diverse types of shop activity. This was because the preliminary work involved in the restoration and preparation of various types of railroad equipment would ideally belong in a film about the Chessie Steam Special. Of course, this was especially true where the locomotive was concerned. Most of the shop areas benefited from adequate ambient light so that artificial lighting was needed just for fill-in purposes. Even though the shop buildings were usually old, they were constructed with ample window space which permitted good natural illumination.

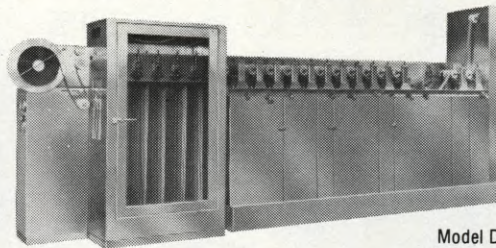
Individual shop processes such as lathe turning, press work, and shaper operations were lighted with 600W and 1000W quartz lights with dichroic filters, plus sunlight. The bulk of the lighting had to be kept as simple as possible, since quick set-ups were the rule. The bulk of the shop-related shooting had to be done without staging action, since the work being done was under tight time restrictions. Close-ups of the men were shot at another facility, at a later time, to improve editing continuity.

The most challenging shop event to film was "the lift". This was a rare moment when No. 2101, all several hundred tons of her, was lifted from her cribbing, after extensive repairs had been performed, and carried effortlessly by a gigantic crane to a position over her eight driving wheels. Then, slowly, the huge boiler and engine frame were reunited with the wheel assembly.

Historically, what made this engine work even more important was that the steam locomotive had "come home" to Reading, Pennsylvania. For it was in the selfsame erecting shop that she was built in 1945. And some of the shop employees who were helping to rebuild the engine were on the scene a third of a century ago when she first rolled out of the shops. For the shops. For them, especially, part of them had come back.

Whatever the speed—Micro-Demand meets the need.

Filmline's Citation Series Processors with Micro-Demand Drive.



Model DC28-35/16

Now any lab regardless of size, can have the quality and reliability of Micro-Demand, at prices geared to the volume of its operation.

Now the patented Micro-Demand film transport system comes in a full line of Filmline continuous, commercial film processors. Priced from \$8,900. With speeds from 7 FPM to 325 FPM.

Introduced in 1968 in its "Custom Line" machines for professional commercial labs Micro-Demand remains the most advanced demand drive transport system yet devised for film processing.

Micro-Demand dependability is outstanding—it will run 24 hours a day, seven days a week, at top speed, with virtually no maintenance.

The inherent design of the Micro-Demand system allows the use of conventional film rollers and bearings, eliminating the need for fragile plastic spring bushings, eccentric wob-

ble rollers or other mysterious contrivances. "Push-Button" operation and reliability allows the operator to perform other functions while the machine is running.

All Filmline processors use stainless steel construction throughout except where other alloys or formulations are recommended or proven superior.

Every Filmline machine is designed for "Zero Down Time" and backed by a superb performance record compiled in over 25 years of continuous service to the industry. Twenty-five years in the forefront of processing machine design and innovation.

Partial Listing of Filmline Installations: Deluxe-General, Technicolor, Inc., Capital Film Labs., Byron Motion Pictures, TVC Labs., Movielab, Radiant Laboratories, Guffanti Labs., Precision Film Labs., Bellevue-Pathé, ABC, CBS, NBC Network TV, NASA, General Motors, RCA, IBM, AEC... and thousands of others.

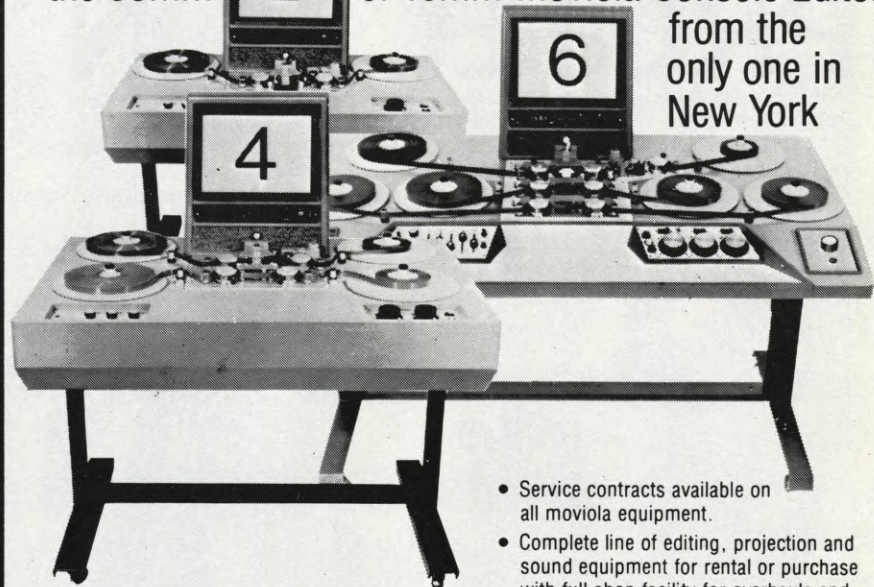
Distributed Overseas by:
Bell & Howell Ltd.
Wembley, Middlesex
Hao 1 EG, England



Filmline Corporation
Milford, Connecticut 06460
Area Code 203 - 878-2433
TWX 710-4623733

RENT-LEASE-PURCHASE

the 35mm **2** or 16mm Moviola Console Editors



from the only one in New York

- Service contracts available on all moviola equipment.
- Complete line of editing, projection and sound equipment for rental or purchase with full shop facility for overhauls and service.
- Complete stock of editing supplies.

LAUMIC CO. INC.

306 EAST 39th ST., NEW YORK, N.Y. 10016
(212) 889-3300-1-2

Isn't it nice to know we'll be around to service your equipment . . . **AFTER THE DEAL IS CLOSED?**®

EDITING CONSOLES

35mm, 16mm

Economical, reliable, gentle

For literature please call, day or night:

(800) 821-7700 ext. 815



Twenty-Fourth Frame

p.o. box 2167, christiansburg, va. 24073 (703) 382-4135

ZERO HALLIBURTON...THE CASE FOR PROTECTION

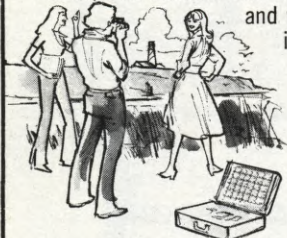
ZERO Halliburton aluminum cases. The easy-to-customize, incredibly rugged ones more professionals count on than any other, for their finest-quality equipment.

ZERO Halliburton quality starts with a super-strong, super-light prestressed aluminum shell, with moisture and dust-resistant tongue-and-groove construction . . .

and with resettable, digital lock and interchangeable polyester-foam inserts to customize your case to meet your needs.

Eight sizes to choose from, each in silver or black finish . . . each unexcelled in quality — and, surprisingly affordable!

Case closed . . .



From the Creators of the
Post-Recovery Apollo
Moon Rock
Containers.



Marketed in the U.S. exclusively by
Berkey Marketing Companies,
Box 1102, Woodside, N.Y. 11377



In Canada: Berkey Photo Canada, Ltd., Ontario

To film this action, we employed three cameras, two in fixed positions, and one hand-held for mobility. The front of the locomotive, as well as the undercarriage, had to be lighted with 1K lamps. These areas were poorly lighted by sunlight, so additional illumination was necessary. The lifting operation took about two hours. All major elements of the event were filmed and later edited to a thirty-second sequence.

Shopwork was filmed in three locations. Some engine rebuilding and parts machining were shot at Grand Rapids, Michigan. Coach repainting and restoration efforts were filmed at Chessie's sprawling Huntington, West Virginia, shop complex. The bulk of shooting of the various stages of locomotive rebuilding was done at Reading.

Exterior shots were obtained on many different days, at different locations, and with different weather conditions, since the format of the finished film production would accommodate, and even require, these inconsistencies. While our scenic long shots benefited from bright sunshine, some of the most unique and dramatic shots were filmed on gray, rainy days.

One type of shot that demanded that the weather cooperate with us was a sunset shot. In addition to finding a sun that was low in the afternoon sky, we had to have the Steam Special roll past at the right moment. And it had to be traveling in a North to South direction, in flat territory, preferably slightly elevated on a low embankment. Fortunately, all these variables were satisfied when the train, which was rarely late, was behind schedule enroute to Baltimore. This caused it to be in an area ideal for such a backlit shot, during a time when it normally would not have. And the shot was made.

Another "must" shot was filming the Special as it crossed the Potomac River at Harpers Ferry, West Virginia. This is both a railroad and national landmark. We selected a spot on a bluff which overlooked the famous twin railroad bridges at the site. Our vantage point was on private property, so after receiving the owner's permission, we set up our equipment in a good position.

However, a cantankerous old man who was a neighbor, objected to our presence and the disruption of this quiet solitude. Nothing we could tell him would satisfy him that we had indeed received the owner's consent to film from the overlook. So he got into his car, and began to blow the horn, effectively ruining any location sounds that we were recording. This was the only instance while filming the Steam Special that we found people

who were intentionally uncooperative. Fortunately, later dubbing saved the sound portion of the event.

Another challenge that we faced while shooting the Chessie Steam Special was the almost constant competition from the railroad buffs. This was because these enthusiasts also wanted to film and photograph the unique excursion train.

On one occasion, we were situated inside a tunnel to film the Special as it neared the tunnel bore and then plunged into it. Our position was on a service road that ran alongside the right-of-way through the bore. So there was ample clearance between the track and the tunnel wall.

Scarcely 45 seconds ahead of the train, an automobile came careening down the service road and into the tunnel. It was one of the more daring rail enthusiasts who was driving his car along the side of the track just ahead of the train, itself, which was now within earshot. Our immediate fear was that he would not see our camera set-up because his eyes might not have adjusted to the darkness of the tunnel. The car's headlights were turned on, and luckily, we were able to get the driver's attention just in time. He eased his car around the equipment and quickly drove out the other tunnel entrance. Then, the train came thundering into the opposite portal. And, in the nick of time, we were able to capture it on film as it entered the 800' shaft, and pan with it as it headed to daylight at the other end.

For many days we had been free of any competition from autos being driven along the right-of-way. Then, on a dimly dark day just outside of Cumberland, Maryland, our luck would match the weather. It was the legendary Sand Patch grade, a tortuous climb on the railroad through the mighty Alleghenies . . . and a mecca for rail buffs who like to watch locomotives, particularly steam locomotives struggle with their loads up the mountain.

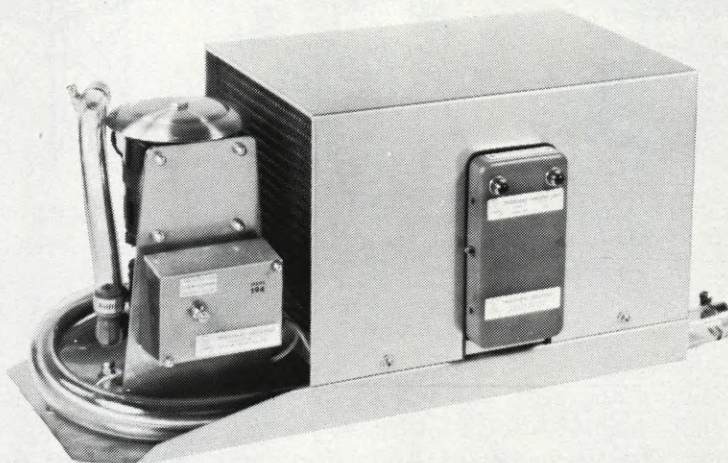
An extremely heavy rain, coupled with very low visibility dampened and altered our shooting plans. The rain, itself, was so torrential that it obscured our vision at times. As the Steam Special moved into view on the Sand Patch climb, our cameras rolled. It was on an S-curve, which first revealed the left side of the train to our position. Then the engine gradually swung to the right, unveiling a pick-up truck that was traveling right next to the engine! In spite of our frustration and dismay, we kept the cameras rolling. Later, this scene was saved with inserted cutaways.

From this point on, we blocked the service road whenever the situation war-

FRIGIDHEAT PRECISION HEAT PUMPS

FOR LIQUID PROCESS OR LASER TEMPERATURE CONTROL

For some 1800 customers over the past fifteen years, Frigidheat has become and still is their preferred 1/10°F. temp-control system for liquids. One of our smallest units is shown below with its 194-1 adjustable control attached to the stainless steel pump bracket. Its probe is mounted in the magnetic pump's inlet elbow. Other sizes have either type 316 or Hastelloy steel exchangers and are available with attached or remote controls as well.



FRIGIDHEAT INDUSTRIES

BOX 40947, NASHVILLE, TENN. 37204 / (615) 383-4255

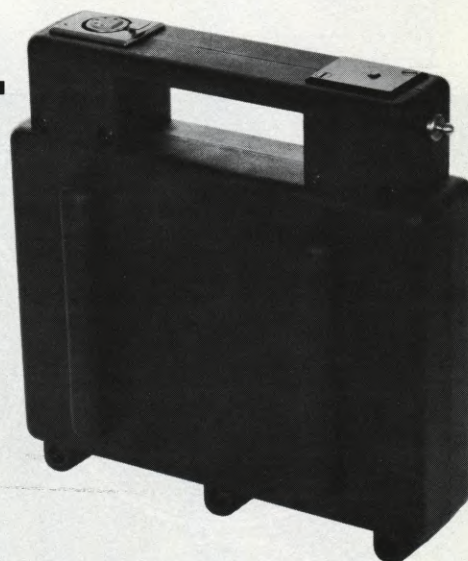
THE ARRI ENERGY SET

12V/4AH BATTERY AND CHARGER

The Energy Set Battery uses nickel-cadmium cells fused together for low internal resistance. They're sealed into a resilient hard-rubber case. You can use the Battery with any camera that runs on 12VDC. It weighs 5 lbs, 2 oz.

With 4AH capacity, the Battery can drive 4,000 feet through the 16SR, 1,600 feet through the 16BL and 2,000 feet through the 35BL. A resettable circuit-breaker fuse automatically protects the camera's electric circuits against external shorts.

The Energy Set High/Low Charger shows a red light as it brings the Battery up to 80% of capacity (about 6 hours from fully discharged). It switches automatically to a trickle charge (about 5 hours) for the last 20%, showing a green light. A thermal sensor protects against overcharging. The Charger automatically switches



to work with 110V/60Hz or 220V/50Hz AC power. It weighs 2 lbs, 10 oz.

You can carry the Battery three ways. It comes with a shoulder-strap that snaps on. (Spring-loaded locks stop the strap from accidentally snapping off.) And a handgrip and belt loops are built into the case.



In this partial view of Charger, red and green lights are both on, showing trickle-charge mode.

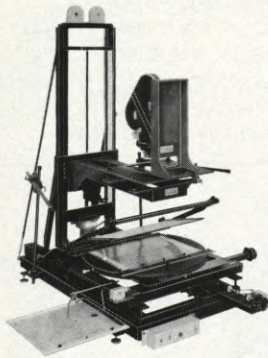
ARRI
ARRIFLEX CORPORATION

One Westchester Plaza, Elmsford, New York 10523. (914) 592-8510. And 600 N. Victory Blvd., Burbank, Calif. 91502. (213) 841-7070
In Canada: ARRI/NAGRA Inc., 6467 Northam, Mississauga, Ontario L4V 1J2. (416) 677-4033

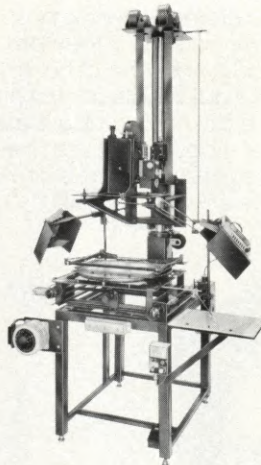
For Animation **THRIFTFAX** Camera Stands

Ask us about

'JR.' THRIFTFAX



Versatile, accurate,
productive



THRIFTFAX 'SR.'
Top performance

MINI-THRIFTFAX



For the mini-
budget

For all ANIMATION/TITLING/FILMSTRIP production and preparation equipment, for animation supplies of all sorts, get the facts, first, from FAX Company. A two-part descriptive price list covering "The Mechanics of Animation" and "The Art of Animation" is yours free, on request. Tell us of special needs.

FAX COMPANY

374 S. Fair Oaks Ave., Pasadena, Calif. 91105 - 213/681-3084

ranted. Only in this manner could we protect our camera set-ups and our planned compositions. Such a measure did serve, on several occasions, to save our shooting efforts by preventing auto traffic next to the tracks.

One of our goals in shooting this historic event with the intrinsically photographic Chessie Steam Special was to record the subject on film in a manner that would appear uncommon and exciting on the screen. In keeping with this objective, we set out to create the illusion of moving the camera from the side to the center of the tracks while filming the train at full speed from a head-on angle.

Reverse filming was ruled out because the engine's exhaust would detract from the planned effect. So we decided that short of actually placing a camera in front of the onrushing train, we would use a mirror positioned at an angle 45 degrees to the rails, and then shoot into the mirror. The mirror, of course, would be demolished by the speeding train.

The mirror shot required that we build two fixtures. The first was a frame for the three-foot-by-eight foot mirror we had to use to film the shot. This was constructed out of 1x3 white pine. The second part was a dolly "track" installed parallel to the rails for dolly movement. The platform was made with 2x4s and leveled on cinder blocks. All the elements had to be perfectly vertical, horizontal, and at 45 degrees to one another for the proper film effect.

The camera was fitted with a second mirror to correct the reversed left to right image of the first. We used first quality mirrors for the shot and image trueness did not suffer. However, alignment problems are compounded with the use of two mirrors. A reverse optical print would have eliminated this condition.

The apparatus for this particular shot had to be set up on the track within fifteen minutes, since we were shooting on main line trackage when rail traffic was exceptionally heavy. In spite of some anxious moments, the mirror shot was carried out as planned. This, and countless other shots would have been impossible without the splendid cooperation and assistance that we received from William F. Howes, Chessie's Vice-President for Casualty Prevention. He was in charge of the overall operation of the Steam Special and was eager to see Chessie's sesquicentennial event recorded on film in a creative manner.

Likewise, our filming efforts on and near locomotive 2101 were enthusiastically helped by the men of the Steam Locomotive Corporation of America, from whom Chessie leased the huge steam engine. Locomotive crew members and 2101's owner, Ross E. Row-



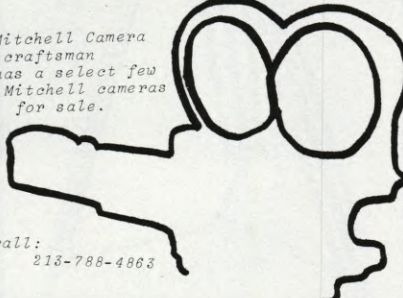
ARRIFLEX REPAIRS
Expert & Reliable Repairs
 on all Arriflex Equipment
 Including Lenses

ROESSEL
 Cine Photo Tech
 48-20 70th St., Woodside, NY 11377
 Wolfgang Roessel (212) 424-1600
 Former Service Manager of Arriflex Comp.

AMNI
 AMERICAN MOBILE VIDEO, INC.
 COMPLETE VIDEO PRODUCTION FACILITIES

(213) 465-7146
 5823 Santa Monica Blvd. Suite #110
 Hollywood, California 90038

Mitchell Camera craftsman has a select few Mitchell cameras for sale.



call: 213-788-4863

ECO TYPE 7252 SUPER 8
 100 FOOT ROLLS
 AVAILABLE FROM

NIL
 NEWSFILM LABORATORY, INC.
 516 North Larchmont Boulevard
 Hollywood, California 90004
 (213) 462-6814

SEND FOR OUR NEW CATALOG

LEE MOTION PICTURE
 RENTAL SALES SERVICE
 (213) 876-1100

1016 NORTH SYCAMORE AVENUE
 HOLLYWOOD, CALIF. 90038

SALE!
SEE OUR CLASSIFIED AD.

land, offered their help and technical advice while engine-related shooting was being done. These hardworking individuals, who routinely put in sixteen-hour work days, were unparalleled in their willingness to run through their paces for us.

Film footage that we shot we used in several public relations-oriented film productions. The Chessie System, as one of the nation's most progressive railroads, was firmly committed to bringing the 150th anniversary of its B & O, and American Railroad, itself, to the people on a first-class level. Its determination was further realized in its decision to record on film the historic celebration which was symbolized by the Chessie Steam Special's colorful journey. The corporation had the vision to recall its nostalgic and dramatic past, and to make it part of its present-day vitality that will become, too, its legacy in days yet to come. ■

DRACULA BITES AGAIN
 Continued from Page 569

tion or some other familiar trick. Properly balanced, you can't beat the kind of highlights that you get on people's skin from that laser beam.

QUESTION: Were there no problems in synchronizing it with the camera?

BADHAM: There is some sort of roll bar effect and we didn't figure out how to lick it in the short time that we had. There needs to be some kind of crystal motor or something to sync up the laser beams and the camera. It's like the roll bars on television. Possibly there may be a good shutter setting on the camera, similar to setting your PSR to 144° to eliminate television. roll bars. It is just a matter of experimenting to find out.

QUESTION: I could also see that if you were going to shoot with red lasers that we shall have to provide Panavision cameras with green Panaglows on them—so that you can see your limits.

BADHAM: Well, the Panaglow was a big help—because we couldn't have seen our limits. The light from the Panaglow was bright enough to see, yet it didn't flair, once we learned how to adjust it.

QUESTION: You brought Roy Arbogast over here from the United States to work with you on this picture. Would you like to talk a little about your view as a Director on special effects and the way you use them?

BADHAM: Well, at the time we were set-

WESTERN Cine
 16mm to 35mm
BLOW-UPS

Best acuity in the state of the art today!

Sharpness! The way people see it on the big screen. Nothing else matters. At Western Cine we are uniquely qualified to blow-up prints from 16mm to 35mm with excellent acuity -- actually the best in the state of the art today.

If you are contemplating a 35mm blow-up of your 16mm film production, we will furnish a test of your work at no charge.

WE PROVIDE COMPLETE FINISHING SERVICES

Processing
 Printing
 Titring

Theatrical Sound Mixing
 Optical Effects

For information, call or write...



312 So. Pearl St. - Denver, Colo. 80209
 (303) 744-1017

Cine Craft:
 8764 Beverly Blvd. - Hollywood, Calif. 90048

National Geographic offers you the world on film!

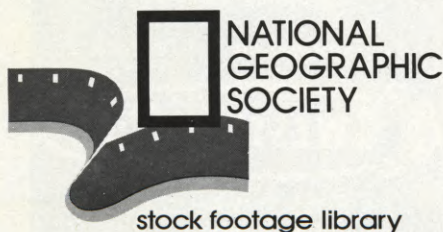
Footage from 15 years of National Geographic's award-winning television documentaries is now available for film and TV production.

- Choose from presentations that have won:
 - Emmy Awards
 - Oscar nominations
 - Television Critics Circle Award
 - George Foster Peabody Radio and TV Awards
 - Golden Reel Award
 - and many others
- More than two million feet of film available
- All full color, 16 mm.
- Shot worldwide and cataloged for easy access in many subject areas, such as:
 - Wildlife
 - Exploration
 - World lands and peoples
 - Recreation
 - Adventure

One-minute (36 ft.) minimum; six-minute maximum per production.

For information and rates, write or call:

National Geographic Society
 Stock Footage Library
 Washington, D. C. 20036
 (202) 857-7691



ting up the production none of the top English people were available. Everyone was working away on the latest BOND picture, or FLASH GORDON or SUPERMAN etc., etc. Roy had been working on CLOSE ENCOUNTERS and on JAWS. He is a very ingenious fellow. We were having to do a lot of ingenious things, magical sort of effects, that either had not been tried before or people had forgotten how to do. There was a lot of research and development put into figuring out how we were going to make a mechanical bat look like a real flying bat instead of a mechanical one. How we could do a lot of our storm sequences, various disappearances and appearances of Dracula. Not to mention the burning up of DRACULA at the end, which has been a big job. Roy had to make casts of DRACULA's body and then be able to melt it and dissolve it in an exciting manner. All quite tricky effects. Quite a bit of technology has had to be developed.

QUESTION: You were talking about old techniques that have had to be re-discovered. Of course, glass matte technique is something that has been re-discovered in say the last five years or has come back into prominence. Now you have got Al Whitlock. What sort of things is Al doing for you and how is he going about them?

BADHAM: For a period picture or for fantasy he can provide invaluable kinds of services because he's able to paint something that would cost you millions of dollars to build. For example, when we were in Tintagel shooting DRACULA's castle, very often we would look out and we would see modern buildings with television antennas that could be wiped out, and replaced with the exact landscape that we wanted, such as a nice period village. You can save an enormous amount of money in set construction by using your matte shots cleverly. In fact, THE HINDENBURG, which was one of the best examples of Whitlock's work, has extraordinary shots where he got a shot of the Hindenburg passing over New York City and in it you see the dirigible itself moving, you see the water sparkling below, you see clouds moving and the city itself has a very alive feel. There is not one real object in the whole shot. Al painted New York City, he painted the water, he painted the dirigible, he painted the clouds, he animated all of them and you would never know that it is a matte painting. There is a tremendous amount of skill that is involved in something like this. The difference between a first-class kind of job that Whitlock can give you

ON THE SCENE

with the metal

JUNIOR TRIPOD

by Peter Lisand



Includes the adjustable new Spider Assembly

Spider Assembly can be bought separately

Patented Model No. JR-A-74

Made by professionals for professionals

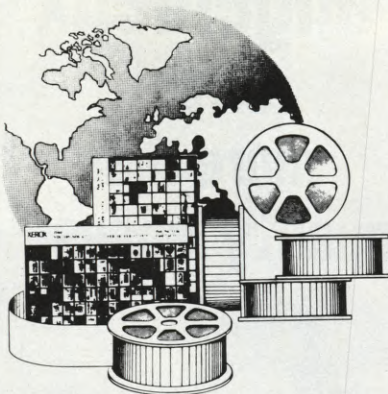
- **Tops of tripod available in 7 popular sizes.**
- **The new light-weight Junior motion picture and video tripod weighs in at a mere 9 1/2 lbs.**
- **Finely machined tubular aluminum legs and stainless steel parts and nylon bushings. Rustproof and noiseless too!**
- **Available in 3 sizes: Regular—43" closed to 65" open; Intermediate—32" closed to 48" open; Baby—25" closed to 35" open.**
- **Rigid construction—no movement when panning. No metal to metal contact.**
- **And economically priced.**

Available from Lisand or your local dealer. For further information and price drop us a note or call:

Peter Lisand
 MACHINE CORP.

352 River Rd./Edgewater, N.J. 07020/ (201) 943-5600

This Publication....



is Available in MICROFORM

For Complete Information

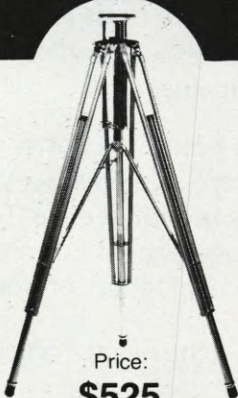
WRITE :

**University
Microfilms
International**

Dept. F.A.
300 North Zeeb Road
Ann Arbor, MI 48106
U.S.A.

Dept. F.A.
18 Bedford Row
London, WC1R 4EJ
England

FOBA TRIPOD



Price:
\$525

The Foba all-metal professional motion picture tripod features a Pro Jr. flat-top plate which accepts Pro Jr., O'Conner C and 50, Miller F and Pro heads. Foba's unique tubular adjustable legs allow the tripod to be used in both standard and baby positions. Legs can be adjusted individually or simultaneously. Tripod comes complete with triangle-type leg locks and elevating riser plate. Foba was selected for use in filming the 21st Olympiad.

alan gordon enterprises inc.

1430 Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

and a slightly lesser sort of job is the difference between an audience accepting a shot and saying, "Doesn't that look nice?" or "That looks phony". If they think it looks phony you have lost their attention and suspension of disbelief, so important to being able to enjoy a film. I see bad paintings quite frequently in recent movies. So I feel lucky to be able to get Whitlock's services because his work is so first-rate that those problems don't arise.

QUESTION: What sort of shots is Al Whitlock getting into your film?

BADHAM: We wanted to see Dracula's castle in the distance as a coach is going toward it. As our coach and horses travel down the road Whitlock has painted in the castle with the sun setting during the shot and a whole new sky. Now, the only real element in the shot is the coach and a bit of road. During the eight seconds that the shot goes on the sun actually sets at a believable speed. One element very important to his technique is that he firmly believes in working completely from the original negative. He shot the scene with us on the location—with the camera locked down absolutely. He exposed only the part of the frame that had the coach going down the road. The rest of the frame is completely blacked out and unexposed. He then takes that film, puts it in his refrigerator undeveloped, except for about the first ten feet that he cuts off as a test. He always makes you shoot plenty of test footage. He uses that to line up his paintings of the castle, and what he is going to do with the sun and all of that. The next time the film comes out of the refrigerator is when he is ready to shoot the painting—and this time he blacks out the part that we exposed for the coach going down the road—and only exposes his paintings. Then and only then, when he has done all of that, does he send it to the lab to have the film actually developed. What you get back from the lab is a completed matte shot. The reason for doing this and it's a lot more trouble to do it this way than to dupe everything—the reason for holding onto this original negative method is the amount of aerial perspective that you maintain in an original negative and what that means can only be demonstrated by holding up two shots side-by-side—one that's a duped scene and one that's an original negative. In the dupe everything flattens out, you lose the depth. In the original negative method you have all the depth in the world. Just hold the two pieces of film side-by-side and there is no argument at all. The original negative is just much better. So the extra work that you go

BUY SELL TRADE



Good Used Equipment

BUY FROM IDI

Arri 16 S/GS, 12-120, V.S. motor, battery belt, cable, very clean _____ **\$4995**

Nagra 4.2L, ALC, 2-preamps, case, very nice _____ **\$4395**

16MM Moviola opt/mag; opt/pix UL20, real nice _____ **\$2495**

SELL TO IDI

IDI will purchase your used motion picture film equipment regardless of condition. We buy outright or we display your equipment in our showrooms on a consignment basis. Call us for details. We're ready to work with you NOW.

TRADE WITH IDI

IDI is an authorized dealer for just about every brand of film or video equipment. Buy that new camera, lens, recorder, or quartz head from us and we'll take your equipment in trade. Because of our large volume, we can afford to give you **top trade-in** dollars on good used equipment.

Major credit cards accepted

CALL TOLL FREE

800 • 327-5181

IN FLORIDA CALL 305/945-1111

IMAGE DEVICES INCORPORATED

MIAMI

1825 N.E. 149 Street
Miami, Florida USA 33181
PHONE 305/945-1111

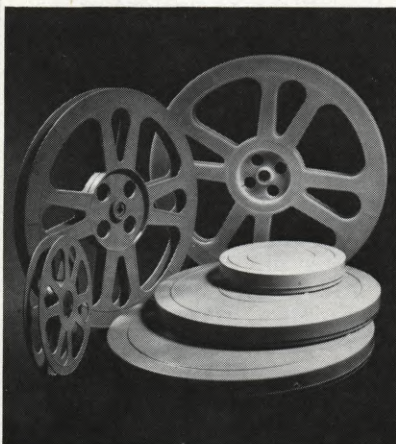
ATLANTA

1651 Phoenix Blvd.
Atlanta, Georgia USA 30349
PHONE 404/996-0000



See us at Film '79, at Stand Nr F-10, London, 2-6 July 1979.

REELS. CANS. CASES.



STEEL-PLASTIC FIBER

Specify **GOLDBERG**
for all your REEL needs!

IF IT'S SPECIAL...
we make it!



**GOLDBERG
BROTHERS**

P.O. Box 5345, T.A. — Denver, Colo. 80217

through in shooting by the original negative method is really worth it in the final product.

QUESTION: So looking back at the end of the picture—what was amongst the most interesting shots that you had to do?

BADHAM: There was a particular one where we had to fly one of our bats, our mechanical bats, down a long, long flight of stairs towards a man who was falling down the stairs as we were flying towards him—and we didn't want to do back projection, front projection, blue screen or any of that; we wanted to do it live. We wanted the camera to be over the back of the bat as though we were over the back of an airplane dive-bombing something. The trouble is that our bat has only a two-foot wingspan and there is no way that you can hold focus on the bat a foot in front of the camera, and hold focus on a man falling down the long flight of stairs at the same time. We tried it with the bat in soft focus—then we put a split diopter on the camera, with the bat in the bottom of frame and the falling man in the top of frame. The fact that the bat's wings crossed the diopter split line didn't matter because they were in rapid movement and a blur anyway. The diopeters made the difference between a good shot and a mediocre one. You just have to be willing to try new things—swinging on that great big 30-foot crane arm through the air with a little tiny two-foot bat. It seemed like over-kill but that's the equipment we had available at the time to do the shot. ■

American Cinematographer

P.O. Box 2230
Hollywood, CA 90028

Please enter my subscription
for 1 year—

\$9.00 U.S.

\$10.00 Foreign

and send me a
free copy of the
Four-In-One Reprint.
I am enclosing
my remittance.

*(offer available only
with remittance)*

Name _____

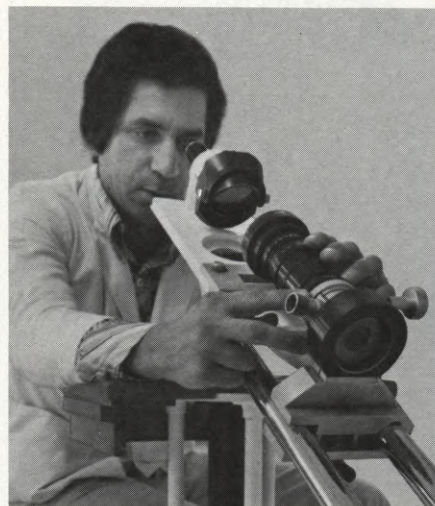
Address _____

City _____ State _____

Zip _____



angēnieux offers more than quality lenses...



...quality SERVICE

We stand behind our quality products — with quality service. Dedicated professionals using angenieux designed test equipment, spare parts and the skills of experienced factory trained technicians.

You bought superior quality, therefore, we believe you will want superior service. To prove it, please accept our offer for a FREE evaluation of your lens.

Contact the nearest office today.

angēnieux corporation of america

NY (516) 567-2424

1500 OCEAN AVE., BOHEMIA, NY 11716

CA (213) 821-5080

13381 BEACH AVE., VENICE, CA 90291

ONT (416) 291-2363

4 HAVEN HILL SQ., AGINCOURT, ONT., M1V-1M4



"THE ENVELOPE PLEASE ...
THANK YOU ...
AND THE WINNER IS ..."

FOTO-KEM with two Academy Award winners and one Academy Nominee ... 'Teenage Father,' 'The Flight of the Gossamer Condor,' A Different Approach'.

"Well Major Flick, we're mighty proud to have been selected as the motion picture lab for three great Academy honored films. It just shows, if you add Foto-Kem quality to a quality production you get winning quality pictures. Congratulations to the Live Action winner 'Teen-age Father', producer Taylor Hackford; Short Subject winner 'The Flight Of The Gossamer Condor', producer Jacqueline Phillips Shedd; and Live Action nominee 'A Different Approach', producers Jim Belcher and Fern Field."

GERRY BRODERSEN
The Prez

FOTO-KEM Industries Inc.

MOTION PICTURE LABORATORY
2800 West Olive Avenue
Burbank, California 91505
(213) 846-3101

OF VAMPIRES, CASTLES AND MECHANICAL BATS

know who has what. That is how we do it. There are about four of us over there who work together all the time and there is nothing we can't do. But when you get out alone in a foreign country and you don't know anybody and you're trying to learn everything at once, it is very difficult to get your act together quickly. Next time it will be easier.

QUESTION: The whole spectrum of special effects has been on the up-beat during the last few years. Why do you think this is so—and do you think the art has advanced a lot in this period?

ARBOGAST: Since I've been working in the business—which isn't such a long time—the whole special effects scene has changed a lot. I can remember back when shows seemed much easier to do. But now the more you do the more you have to try to outdo the next guy, and it does get very difficult. Now we are into electronics in Hollywood and are getting some of the finest electronics engineers from the space technology program working with us. Sometimes I lie awake at night wondering what's next. It's a long way from being a carpenter. Much more fun, too.

MOVING?

PLEASE NOTIFY US
6 WEEKS IN ADVANCE

Miss/Mrs./Mr. _____
Name (please print)

New Address Apt. No.

City State Zip

MAIL TO
AMERICAN CINEMATOGRAPHER
P.O. Box 2230
Hollywood, Ca.
90028

ATTACH LABEL HERE for address change or inquiry. If you are receiving duplicate copies of AMERICAN CINEMATOGRAPHER, please send both labels. If moving, list new address above.



for fast, low-cost creative effects in your own studio.

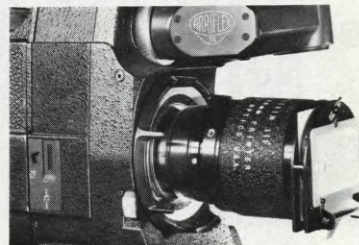
These unique attachments offer the professional cinematographer an alternative to expensive, time-consuming lab effects.



DUPLIKIN II

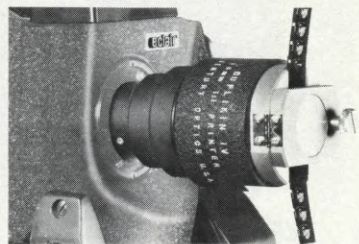
16mm Enlarging Head for 35mm SLRs.

Makes clear, sharp 35mm color slides or negatives from any 16mm motion picture frame. May also be used to produce black-and-white prints from color or black-and-white film.



DUPLIKIN III

Printer Head for Converting 35mm Color Slides to 16mm Film. Makes possible the incorporation of 35mm color slides into 16mm motion picture films with crystal-clear sharpness and brilliantly saturated colors. Great for adding location establishing shots from 35mm slides.



DUPLIKIN IV

For 16mm "Freeze Frames". Allows stopping of action any place in a scene with 16mm camera. No cutting of original film necessary. Excellent for subject emphasis, "shock value", trick or humorous effects and low-cost, rapid production TV commercials.

Call today for complete technical details and price sheet. And mention this ad to get a free lens test chart.



SUSTAINING
SMPTA
MEMBER

Member Professional
Motion Picture
Equipment Association
mppea

Century precision cine/optics
A DIVISION OF CENTURY PRECISION INDUSTRIES, INC.

(213) 786-3715 TEL. 66-2419
10661 BURBANK BLVD., NORTH HOLLYWOOD, CALIFORNIA 91601

Battery Problems?

Now available from Film Equipment Service Company—a battery system that overcomes common problems with

- "Memory" effect
- Charging
- Cold weather operation
- Short running life

Film Equipment Service Company's power units feature true sealed lead-acid batteries. Result: no "memory" effect. Excellent cold weather operation. Cycle life to 2,000 cycles. No corrosion or leakage. With a built-in meter.

FESC's two-step constant current charger senses when power unit is charged. So charger will not overcharge batteries.

Battery packs and belts for all film and video cameras and 30 volt lights. 2.5, 5 and 10ah units.

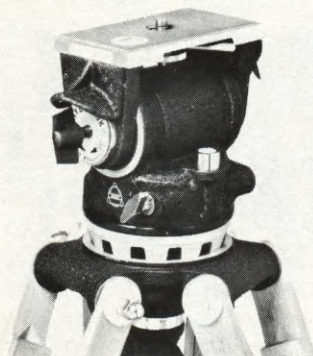
To inquire about free 2 week trial, call or write:



**FILM
EQUIPMENT
SERVICE
COMPANY**

1875 South Pearl St. • Denver, Colorado 80210
303-733-1980

UNIVERSAL FLUID HEAD Model 2030



For film and video cameras weighing up to 30 lbs.

- With Hydralok® & Autoslip® Pan.
- Quick leveling claw-ball and cavity system.
- Weighs only 8 lbs.

Manufactured by Universal Fluid Heads (Aust.) Pty., Ltd.

Sole U.S.A. Distributor:

cinema E products
CORPORATION

Technology in the Service of Creativity.

2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 • (213) 477-1971 • Telex: 69-1339

"DAYS OF HEAVEN" Continued from Page 594

more than satisfactory.

Our night scenes were overdeveloped one stop, to ASA 200, and in extreme cases, two stops, to ASA 400. Astonishingly, the grain was not noticeable, even with the 70mm blow-up.

These ASA ratings, combined with the new ultra-speed lenses, enabled me to shoot at lower light levels than I had ever done before. For example, the speed of the 55mm lens is T/1.1, and you can literally shoot with the light of a match or a flashlight. Very often we would shoot at T/1.1, pushing one stop, without the 85 filter, using the last glow of the day.

Even though I was sure of the exposure, I was concerned about the focus, since the depth of field was at an absolute minimum, and my concern doubled when we began to consider blowing the release prints to 70mm.

Again I was fortunate to have a second assistant who was an artist. Michael Gershman was responsible for the focus, and he knew he was gambling with his job. Difficult as his task was, he proved himself to be a perfectionist, and he rehearsed and rehearsed until he was sure of his gauge. Whereas some became impatient with him, I can never thank him enough for his dedication. I was using no diffusion and I wanted a very crisp, clear image. The sharp images in the film are directly attributable to his professionalism.

Professional cinema does not risk underexposure and focus very often, but Malick wanted the film to have a certain style, which carried with it those risks. To achieve this style, he allowed me to go very far—as far as I wanted.

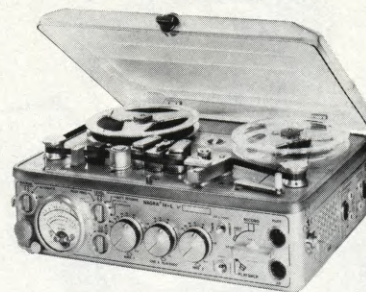
The night exteriors in 1917 would have been illuminated by bonfire or lantern. In our bonfire sequences, to give the impression of reality, our challenge was to light the scene as though the light came only from the flames.

Westerns are famous for these scenes, when the characters are sitting around the campfire. Usually electric lights are hidden behind the firewood to increase the natural light given by the flames. I always thought these scenes looked very fake.

Even in a marvelous movie, like *DERSU UZALA*, they have a photographically ridiculous scene near the fire. Not only is there too much light, even overpowering the flames, it is white, conflicting with the color temperature of the fire and ruining the atmosphere.

Another often-used technique is to shake things in front of the lights to give the impression of flickering flames across a person's face.

Where to rent the best for less. \$79/week



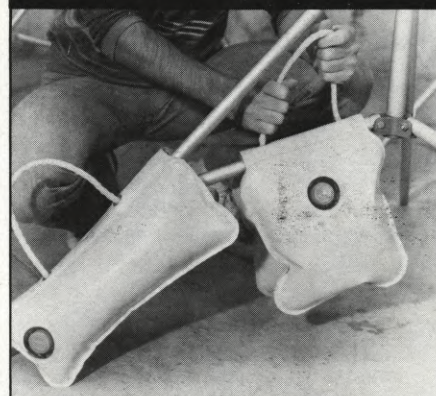
We guarantee professionally maintained equipment at the lowest price on Nagra, Vega, Sennheiser... all your sound equipment needs.

Similar saving on Sony Video-cassette rentals.

For daily delivery in NYC or immediate air express anywhere, call our Hot Line service anytime: 914-769-5087.

**Scharff
Communications**
Sound and Video Equipment Rentals

WATER-PAK WEIGHTS



Water-Paks are ideal weights for a variety of cinematographic uses. They are easy to transport and store and weigh only one pound empty. Filled with water they weigh 14 lbs., with sand, 16 lbs., and are most adaptable for weighing down light stands, "C" stands, triangles, etc. Two configurations are available: the standard Water-Pak I — Saddle Bag model, and the Water-Pak II — "Banana" model.

Either model only \$23.95

DEALER INQUIRIES INVITED.

alan gordon enterprises inc.

1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

NCE ANIMATION MOTOR



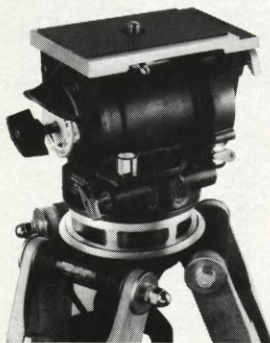
If you own an Arri, Mitchell, Cine Special, Maurer, B&H 2709, Eastman Reflex or any other camera with an outside drive shaft you can have a motor driven single frame camera for either animation or stop motion photography by adding the NCE Animation Motor now manufactured by AGE Inc. The NCE is an integral system of motor, adapter and control unit which, with the correct adapter, connects to almost any 16mm or 35mm professional camera. Standard features include built-in counter, on/off and continuous run switches, forward and reverse function indicator lights and manual motor release for threading. Write or call for detailed data sheet.

alan gordon enterprises inc.

1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

UNIVERSAL

FLUID HEAD Model 205B



For film and video cameras weighing up to 50 lbs.

- With Hydralok® & Autoslip® Pan.
- Additional Positive Tilt Lock.
- Quick leveling claw-ball and cavity system.
- Weighs only 8 lbs.

Manufactured by Universal Fluid Heads (Aust.) Pty., Ltd.
Sole U.S.A. Distributor:

cinema E products CORPORATION

2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 • (213) 477-1971 • Telex: 69-1339

orange. For these scenes I usually used a very soft frontal fill colored with a doubled 85 orange gel. This supplementary light was only to add a little exposure and color to the shadow areas.

DAYS OF HEAVEN was the first time I used a new method for photographing back-and-front-lit actors whose shots would be intercut as cross-cuts.

When shooting exteriors a problem that is continually encountered is this cross-cut. In nature this situation looks normal, but photographically it is a disaster, the edited cuts creating a sensation of not matching (one character being in shadow, the other in sun).

The typical solution is to light the face of the back-lit character, giving him the same relative luminosity as the front-lit character. The drawback to this is that now the sky behind the back-lit character is white (overexposed) and the sky behind the front-lit character is blue. (Unless of course you over-light the back-lit character for exposure, which looks equally as horrible.)

Totally in contradiction to my realist preferences is the perfect solution, which I discovered by mistake in one of the scenes from the film FEMMES AU SOLEIL, (WOMEN IN THE SUN).

What it amounted to was placing each of the actors against the sun for the cross-cut shots, taking caution to insure that the eye-line and direction of the actor's look was correct. In this way each face and each background had exactly the same luminous value, and the edited cross-cuts came without shock.

Of course, the geography was totally to our advantage. The land was all flat and covered with the same wheat in all directions.

When there was a geographic restriction, we would shoot one character in the morning and the other in the afternoon, after the sun had come around to the other side of the sky.

Two people facing each other, each back-lit; two suns on the planet Earth—and I don't think anyone was the wiser.

If during the day scenes, a very careful moviegoer can count two suns, in the sunset scenes, he will not be able to count even one. I believe this is precisely what called unconscious attention to the light in DAYS OF HEAVEN.

Generally speaking, the most beautiful moments of light in nature are in the extreme situations; those moments when you think you cannot shoot anymore; when every photographic manual advises you not to try.

Malick wanted a major portion of the film photographed during one of these extreme situations, a period of time he called "the magic hour". The time be-

FREE

New Arriflex Film:

"16SR CLOSE UP"

Fascinating details of design and manufacture, plus vivid footage of the 16SR in use. 16mm color, 17 minutes. We'd like to lend you a print. Please write on your company or university stationery to Film Department, Arriflex Corporation, 1 Westchester Plaza, Elmsford, NY 10523. Thanks.

ARRI

LEE ROSCO

Gets to go.

10,000 Rosco and Lee color sheets and rolls of reflective, diffusing, color-correcting media always in stock—plus all the newest, like new super-thin 2-mil for TV and ¼-inch 4' x 8' panels for display. Everything for the professional—ready for immediate off-the-shelf delivery! Send \$1 for complete swatchbook.

Complete line of Supersaturated Roscopaint in stock for immediate delivery—literature on request.

Nationwide service for over 25 years. Same-day shipment anywhere in US. Rush delivery in Manhattan.

(212) JUDSON 6-1620

BARBIZON ELECTRIC

426 W. 55, NYC 10019

UNDERWATER

If you're looking for the most creative, experienced, hardest working, knowledgeable, budget-wise, well-equipped, dynamic and competent cinematographer—

YOU'VE JUST FOUND THE BEST.

35mm only. spherical & anamorphic (especially TotalVision)

I care enough to develop and own my own equipment.

ALAN GORNICK, JR.

DIRECTOR OF PHOTOGRAPHY, IATSE 659

(213) 223-8914

4200 Camino Real, Los Angeles, CA 90065

HAWAII

16mm color motion picture processing and printing
ECO-3 ME-4 VNF-1

9kgmbtv Colorfilm

1534 KAPIOLANI BLVD., HONOLULU, HAWAII 96814
Telephone: (808) 944-5225 or 944-5200

WRITE FOR PRICE SCHEDULE

WE BUY Film Stock

Will Consider All 16/35mm Types
Sealed, Opened and Ends

TOP CASH

PLUS 50% OF SHIPPING

RAFIK (212) 473-5851
814 BROADWAY, NEW YORK, N.Y. 10003

PIONEER-
TREBES
PRINTERS

OPTICAL PRINTERS
ANIMATION STANDS
LAB EQUIPMENT

(213) 843-0530

CABLES PMAGIC
1021 N. Lake St.
Burbank, CA 91502

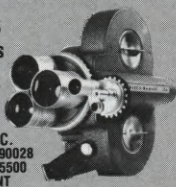
PIONEER Marketing Corporation

B&H FILMO 70 SERIES
Professional 16mm Cameras

Sales • Service • Repair

An exclusive product of

ALAN GORDON ENTERPRISES, INC.
1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT



THE FIVE C's OF CINEMATOGRAPHY

Seventh Printing \$15 Postpaid

MASCELLI'S CINE WORKBOOK

Incredible Value \$20 Postpaid

Calif. add 6% Tax. Foreign add \$1 per book.

10-Day Trial Offer! Free Brochures!

Cine/Grafic, Box 430, Hollywood, CA 90028 USA

BLOW-UP

HIGH QUALITY
35MM NEGATIVES
FROM YOUR 16MM ORIGINALS

Stock Shots Enlarged to Match-in with
your 35mm Negative
Complete Pictures Transferred to 35mm

Call—Adrian at (213) 463-3178

CINESERVICE, INC.

1459 North Seward Street
Hollywood, California 90028

tween when the sun has set and the fall of night—when the light seems to come from nowhere; from a magic place. It is a time of extraordinary beauty.

Actually the time between sunset and total darkness is only about twenty minutes, so the term "magic hour" is an optimistic euphemism.

Malick's decision to shoot so much of the film in this light was not simply gratuitous aesthetics. Historically and in story context, this was the period when these scenes would really have occurred, for the field workers would rise before the sun and work until it set. Their only "free" time being this "magic hour".

Because of the talented intuition and daring of Malick, these sequences are the most interesting scenes in the film—"daring" because it is not an easy task to make all-Hollywood technicians understand that we would only shoot for twenty minutes a day.

To be as prepared as possible we would rehearse the scenes with the camera and the actors during the day. And then, with everyone poised and ready, as soon as the sun had set, we would shoot as quickly as possible—even frantically—fearful of even wasting a minute.

Everyday Malick would be like Joshua in the Bible, wishing he could stop the inexorable running of the sun.

And yet, some days, because of the length of the sequences, we would be unable to finish before darkness engulfed all. We were forced to complete these scenes on the following day, waiting again for the "magic hour".

"Magic Hour" scenes were always forced one stop, to ASA 200. As the light waned, the lens was opened wider and wider, until finally we would use our fastest lens, the 55mm, opened to its maximum aperture, T/1.1.

Next we would pull the 85 filter, gaining what I consider in this situation the equivalent of nearly a full stop.

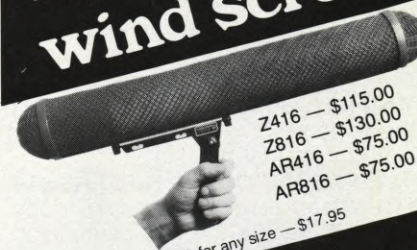
As a last resort we would reduce the shutter speed and shoot at 12, then 8 frames per second, careful to instruct the actors to move very slowly so their movements would appear "normal" when the film was projected at the normal projection rate of 24 frames per second.

Dropping from 24 to 8 frames per second, we effectively increased our exposure time from 1/50 of a second to 1/16, gaining a stop and a half.

Shooting with this last breath of light meant the negative would have different tones, almost mutations, and these would increase in variation the deeper we shot into the "magic hour".

MGM was the laboratory that took these unmatched variations and harmonized and timed them into a smooth,

Zeppelin® wind screen



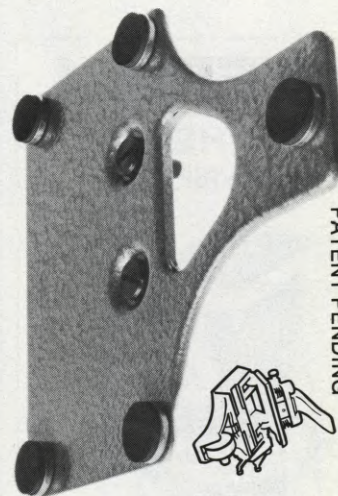
Z416 — \$115.00
Z816 — \$130.00
AR416 — \$75.00
AR816 — \$75.00

High-Wind Sock for any size — \$17.95

The Zeppelin® Wind Screen insures perfect sound recording in all conditions where wind or air movement is present. Its aerodynamic design screens the microphone from wind but allows sound in. Although extremely lightweight, the Zeppelin is virtually indestructible and can be boom mounted or hand held with the Independent Suspension Shock Mount. There are Zeppelins available to house Sennheiser 816 and 416, AKG CK-8 and CK-9 and other similar microphones. Zeppelins and ISS Mounts are all-American made.

alan gordon enterprises inc.

1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT



SKIDPLATE!

PATENT PENDING



Rubber feet stop
splicer from sliding.
Fits quickly onto
any CIR-type splicer.

Now available
at your dealer.

CIRO
EQUIPMENT CORPORATION
6820 Romaine Street, Hollywood,
California 90038. (213) 467-1296

A Frank
Question from
Frank Hood



It's the Water?

We've heard that some filmmakers have had trouble in getting good processing of ECN 11 type 7247.

TEKNIFILM, along with most other labs in the northwest, has experienced very little trouble with this film.

WHAT ARE WE DOING DIFFERENT? NOTHING!—all good labs use good equipment, handle the film carefully in clean surroundings, filter the air and water, have good chemical control and handle the film EXACTLY as Eastman recommends.

SO WHY IS THERE A DIFFERENCE? Frankly we don't know.—We do know that here in the Northwest we still have clean air and VERY PURE water. Maybe, as a famous Northwest Brewer says, "the Water makes the Difference."

Maybe water is as important to film processing as it is to brewing.

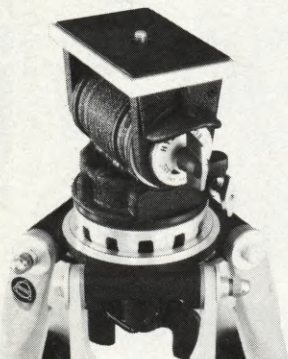
If you are having trouble getting GOOD negative processing in the South, the East or the Midwest why not try a Northwest lab?

WE HOPE IT IS **Teknifilm**TM

503/224-3835

1923 N.W. Kearney, Portland, Ore. 97209

UNIVERSAL FLUID HEAD Model 16FX



For film and video cameras
weighing up to 20 lbs.

- With Hydralok® & Autoslip® Pan.
- Quick leveling claw-ball and cavity system.
- Weighs only 5 lbs. 1 oz.

Manufactured by Universal Fluid Heads (Aust.) Pty., Ltd.
Sole U.S.A. Distributor:

cinema E products
CORPORATION

2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 • (213) 477-1971 • Telex: 69-1339

consistent flow. Bob McMillan was given screen credit as color consultant, and the results of his work are miraculous.

Often the rushes and rough cuts seemed like patchwork because of the color differences. His work unified it all and, unquestionably, I am very indebted to him.

Other than the sequences mentioned, the film was shot without artificial or supplemental light. When light was needed, we made every effort to make it appear natural and to justify its source.

To this extent even our night interiors in the house were "illuminated" by the small electric table lamps of the time.

These lamps were on dimmers that reduced the color temperature of the light bulbs from their modern brilliance to a more appropriate warm, low-wattage appearance of original tungsten filaments. Softlights were the only supplemental lights used for these scenes.

Our day interiors were photographed without any supplemental or fill lighting. We shot only with the natural light that was coming through the window. It was like photographing a Vermeer.

I had already had experience with this technique on other films, especially the French-German production LA MARQUISE D'O, (THE MARQUISE OF O) by Eric Rohmer.

As with so many moments on this project, I had used the technique before, but never to the limit encouraged by Malick. For instance, in THE MARQUISE OF O, although we timed every day interior to the optimum moment when the sunlight through the window best illuminated the shot, we added supplemental fill for the shadows, because Rohmer doesn't like high contrast.

With Terry, however, we added absolutely nothing. The result was, frankly, that the backgrounds are in darkness. Only the characters stand out as exposed.

The technical advantage to this, besides the extraordinary beauty and quality of pure natural light, was the freedom given to the actors from glaring lights and the asphyxiating heat from artificial lights—not to mention the lost time running cable, bringing in equipment, and adjusting lights.

The negative aspect is the shallow depth of field. With the lens wide open, the depth of field is at an absolute minimum. Fortunately Malick is a unique director, and he readily understands and knows photographic techniques and restrictions.

Any other director would not have taken into consideration the lack of depth of field; at least, he would not have accepted it so readily and designed the blocking so the actors were always on the

ECLAIR

Repairs and Service
NPR — ACL

All Work Guaranteed

Ecamm Company
1430 N. Cahuenga Blvd.
Hollywood, CA 90028
Telephone: (213) 466-7301

ANIMATION
LEARNING KITS,
SUPPLIES, EQUIP.
New No. 106 Catalog #102
heath productions, inc.
1700 N. Westshore Blvd., Tampa, FL 33607

BEHIND-THE-LENS FILTER HOLDERS

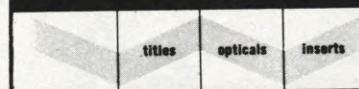
For Angenieux lenses on all Arriflex 16, Eclair NPR and CM3 cameras, and for the 25-250 Angenieux for 35 mm - in kits with gel cutter, tweezers, spare gel container and other convenience features.

Ask for brochures

CUSTOM PHOTOGRAPHICS

P. O. Box 25007, Portland, Oregon 97225 • 503-292-5569

WESTHEIMER Company



Joseph Westheimer, A.S.C.

TITLES, TRAILERS, INSERTS AND OPTICAL EFFECTS

FOR MOTION PICTURES AND TELEVISION

HO 6-8271

736 Seward St., Hollywood, Calif. 90038

ROSCO

color media

ROSCO, PORTCHESTER, N.Y. 10573

UNDERWATER PHOTOGRAPHY

I.E. COLUMBIA PICTURES

THE DEEP

16-35 PANAVISION

AL GIDDINGS

415 530-1122

CALL A PROFESSIONAL Cine-Craft, Inc.

A full service laboratory for
16mm, Super 8, Regular 8
Any quantity Best prices

3611 San Fernando Blvd., Burbank, CA 91505
(213) 843-7036
Write for free brochure



T-Shirts for Filmmakers

Twenty-one popular professional film equipment designs. Write for free brochure.

alan gordon enterprises inc.
Dept. TS
1430 N. Cahuenga Blvd. Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500

COMPLETE LABORATORY
SERVICES & SUPPLIES

LEO DINER FILMS, INC.

332-350 Golden Gate Ave.
San Francisco, CA 94102
(415) 775-3664

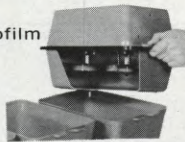
16MM / SUPER 8

AUTOMATIC DAYLIGHT PROCESSOR

- Processes up to 200 Ft.
- Super 8 to 105mm
- Movie—X-Ray • Microfilm
- Motor Driven—Portable
- Film Dryers Available
- Guaranteed

Write for Free Literature
OUR 32nd YEAR
Micro Record Corp.

487-14 South Ave., Beacon, N.Y. 12508



D R

HOLLYWOOD'S OLDEST
FILM SCHOOL
NOW ACCEPTING ENROLLMENTS
FOR OUR NEXT

MOTION PICTURE COURSE

CAMERAS • SOUND RECORDING
LIGHTING • EDITING • EFFECTS
COMPOSITION • SCRIPTING • ETC.

Two Week Courses— Evening Classes

DANNY ROUZER STUDIO

7022 Melrose Avenue, Hollywood, California 90038
Request Brochure HC (213) 936-2494

R-2 Reflex Auto- COLLIMATOR

Focus Testing Equipment is made by
RICHTER CINE EQUIPMENT, ESSEX, N.Y. 12936
for people who care about image quality.
Cost? Less than one good lens or
one out-of-focus scene.

same focal plane. (i.e., no over-the-shoulders or foreground vs. background placement that would have made one actor out of focus).

Our creative effort was always aimed at simplification. Again, like the great silent filmmakers, we used fundamental illusions or tricks that were done simply, quickly, effectively, and—contrary to today's tendency—always in the camera.

Audiences have learned a lot over the years (if not consciously, then at least subconsciously). An audience recognizes immediately when there is an optical trick because the grain of the film becomes noticeable and the color tones shift. To avoid this optical stage for our special visual effects, we kept everything in the camera.

From my European experience I brought a technique my camera crew at first considered a sacrilege, the in-camera fade.

At the end of some scenes, we would fade to black by closing the lens stop slowly. For instance, if our exposure was an F/2.8, we would fade slowly to an F/16, and then close the variable shutter on the Panaflex until we achieved total black.

Another technique we utilized was a stylized method of shooting "day for night". During the years of black and white, "day for night" was a way of shooting wide exteriors during the day and making them appear as though they were night scenes. (Interestingly, in Europe this technique is known as "American Night", a semantic acknowledgment of its origins.)

The standard black and white method that is used even with color today is to underexpose the scene and print down in the positive print. The main difference with black and white was the use of a red filter that added luminosity to faces, added overall contrast, and, most importantly, darkened the sky.

In color, to affect the sky and the contrast, polarizing filters or graded neutral density filters are used. I find both these methods unsatisfactory.

For DAYS OF HEAVEN, we simply avoided the sky by elevating the camera and shooting down, or by choosing spots where the horizon was not visible—such as at the foot of a mountain.

To accentuate the night effect, besides the standard underexposure and printing down, we also pulled the 85 filter and placed the actors so that they were backlit.

The result was an intense cold, blueish moonlight—a supplementary advantage of shooting in color.

Throughout the production of DAYS OF HEAVEN, Terry Malick created an atmosphere and space for improvisation,

BIRNS & SAWYER Film Books..



Cinematography —
Malkiewicz (paper) \$7.95
American Cinematographer Manual —
(cloth) \$18.50
Professional 16/35 Cameraman's
Handbook — Carlson (cloth) . . \$19.95
Tiffen Practical Filter Manual —
Smith (paper) \$5.95
Motion Picture Camera and Lighting
Equipment — Samuelson (paper) \$8.95
Videotape Recording —
Robinson (cloth) \$18.50
The Lens and All Its Jobs —
Ray (paper) \$8.95
Calif. residents add 6%. Add \$1.00 for
shipping. Dept. C

BIRNS & SAWYER

1026 N. HIGHLAND AVE.
LOS ANGELES, CA 90038
(213) 466-8211 • TELEX 673280

super grip

... the ideal camera mount
for difficult situations

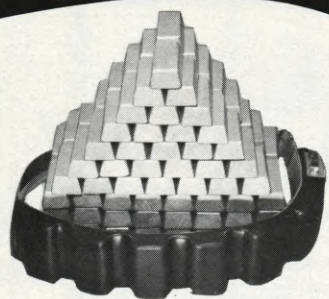


Super Grip's single, powerful "gripper" makes it a quick, strong and efficient means of mounting cameras and lights in an unlimited number of difficult situations. It will mount on curved, irregular or flat surfaces in a horizontal, vertical or in-between position and may be tilted through a 360° circle by turning the gripping pad on the surface.

PRICE: \$375.00
(Includes Super Grip complete with carrying case, angle camera bracket, mounting bolts, wrench and instructions)

alan gordon enterprises inc.
1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

Goldtop[®] Battery Belts



- Completely rechargeable in three to four hours.
- All Goldtops have built-in chargers.
- Batteries can be recharged over 50% more times than other fast-charge batteries.
- Goldtops operate in temperature ranges from -40°F to +150°F.
- Belts incorporate special braided cable for long flex life.
- Belts have five-year warranty on housing and unprecedented one-year warranty on all electronics and cells.
- Goldtop belts include all the skilled craftsmanship found in Chiles Battery Belts.

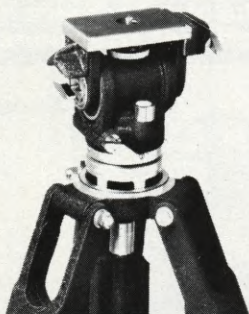
There's a Goldtop battery belt for use with any professional 16mm and 35mm motion picture camera and all ENG cameras. Write for prices and additional information.

alan gordon enterprises inc.

1430 N. Cahuenga Blvd., Hollywood, Calif. 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321-4526 • Cable: GORDENT

UNIVERSAL

FLUID HEAD Model 808



For all super-8 cameras, and lightweight 16mm and video cameras* weighing up to 12 lbs.

- With Hydralok[®] & Autoslip[®] Pan.
- Quick leveling claw-ball and cavity system.
- Weighs only 2.8 lbs.

*with low C.G. configuration

Manufactured by Universal Fluid Heads (Aust.) Pty., Ltd.
Sole U.S.A. Distributor:

cinema E products
CORPORATION

Technology in the Service of Creativity
2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 • (213) 477-1971 • Telex: 69-1339

enabling us to take advantage of each moment.

His striking understanding of cinematographic techniques and his continued artistic encouragement and support were, more than anything else, responsible for the visual achievements we obtained.

When the plague of locusts descends on the fields of wheat, Terry's atmosphere of daring and essential simplicity made me suggest a simple technique that would allow us to maintain optimum image quality (without resorting to an optical), and allow us to obtain the maximum dramatic effect.

For our foreground, we used live locusts supplied to us by the Canadian Department of Agriculture, but for the wide panoramics, silhouetted tractors and blackened workers, we used a technique used in THE GOOD EARTH: running the camera in reverse and dropping peanut shells from helicopters.

When the film was projected forward, the "locusts" would appear to be flying up. Of course, this meant *everything* had to act or perform in reverse, specifically the actors and the tractors.

Virtually everyone said "No, it will never work." But the few believers convinced them to let us try—again, special thanks to Terry's daring. And when they saw the rushes, they were astounded. It worked perfectly.

All because of Malick. Truly one of America's finest filmmakers, a man of universal culture.

In cinematographic terms he belongs to the same artistic family as Rohmer and Truffaut. A man whose daring and artistic talent encouraged me and complemented my photography. He made it easy for me to adapt myself to my new work on the new continent. The days we worked together were, indeed, DAYS OF HEAVEN. ■

To Classified Advertisers

Copy deadline for classified advertising is the 1st of month, preceding publication date. Mail copy and remittance to cover cost to

AMERICAN CINEMATOGRAPHER
1782 No. Orange Dr.
Hollywood 28, Calif.

UHER
AKG JVC
SONY SUPERSCOPE
SENNHEISER
electronic
JAC ARPENTER
PO BOX 1321
MEADVILLE, PA 16335

SHOOTING
in
CANADA?
Contact Jim Grattan for top equipped crews. Single and double system.
4606 St. Catherine Street, West
Montreal H3Z 1S3, P. Q. Canada
(514) 932-1463
GRATTAN PRODUCTIONS

The PRETTIEST FILM FOR SALE
Why not cut your TV commercial around something incredibly beautiful — saving money and headaches in the process! From the aerial photographers of "Jonathan Livingston Seagull" comes the "Prettiest Pictures You'll Ever See!"
HANG GLIDING SURFING
DUNE BUGGIES SEAGULLS
AIRPLANES BALLOONS
INCREDIBLE AERIAL SCENICS
and MORE Ring (714) 494-1055
Box 205, So Laguna, CA 92677
MACGILLIVRAY-FREEMAN FILMS

OXBERRY.
Division of Richmark Camera Service, Inc.
Tel. (201) 935-3000
Cable: Oxberry Carlstadt N.J.
180 BROAD ST., CARLSTADT, N.J. 07072
OPTICAL PRINTERS
LIQUID GATE
ANIMATION & FILMSTRIP EQUIPMENT

CP and FREZZOLINI
CORDLESS CAMERAS
COMPLETE OUTFITS
used, reconditioned **\$2995** up
Includes Ang. 12/120 Zoom lens,
magnetic recording head, amplifier,
400' magazine, battery.
PHOTOMART
CINE EQUIPMENT SUPPLIERS
6327 S. ORANGE AVE., ORLANDO, FLA. 32809
Phone (305) 851-2780

Let the PRO'S tell you how to Buy a 16mm Sound Projector
FREE We will send you the article which appeared in FILMMAKERS NEWSLETTER on buying a "Used Projector."
HECHT — Box 443 — Ellenville, NY 12428

BUY — SELL — SWAP HERE

EQUIPMENT FOR SALE

CAMERA CLEARANCE SALE—NPR's, 400 mags, Beala Xitals, Angenieux eyepieces, cases, complete accessories! ARRI 16BL, 12/120 with snoot, 3-400' magazines, case, accessories. ECLAIR ACL, 3-400', 2-200' magazines, 12/120, case, accessories, 16 ARRI-S, 3 lenses, case, accessories. Bolex H16, case. Beaulieu Super 8, 10/1 Schneider, accessories. NAGRA III, external XTAL. NAGRA SN, accessories. LOTS MORE MISCELLANEOUS EQUIPMENT! LEE MOTION PICTURE, 1016 N. Sycamore Ave., Hollywood, CA 90038 (213) 876-1100.

BEAULIEU R16B, Angenieux 12.5-75mm zoom, 200' magazine, batteries, charger, accessories, \$1000. (212) 762-1411.

KILFITT COMBIE LENS, 400/600/800/1200mm with cradle support and A&J traveling case, \$1850. ECLAIR handheld Leopard support new, \$80. Anton Bauer Belt battery, \$90. MICHAEL BROWN, (805) 495-2652.

MOLE longboom, \$600. Call (415) 834-2000 ex. 272.

NAGRA 4.2L, Siemens interlock projector, ACL Eclair, Arri S, many other items, send for list or telephone. C. W. FILMS, 714 W. 6th St., Austin, TX 78701. (512) 476-5310. In Texas (800) 252-9358.

STEENBECK 6-plate, Bolex Rex 5 w/10mm, 25mm & 17-85mm compact Switars; J-K optical bench; O'Connor 50 fluid head, NCE legs. Call 10-5. G. COHEN. (413) 863-9363.

BOLEX H-16 EBM camera w/power grip, Nicad & charger, \$1995. Bolex H-16 Rex 5 body, \$1595. Switar 25mm f1.4 RX mt, \$350. Write or call HELIX, the Midwest's largest audio-visual retailer. Ask for our complete camera and editing price list. HELIX, 325 W. Huron, Chicago, IL 60610 (312) 944-5325.

35mm Bell & Howell, 2709 w/unit-I shuttle, animation lens & mount, stop motion motor, 400' mag, \$3000. Write; C. H. PROD., 2616 Curtis Ave., Redondo Beach, CA 90278 (213) 542-2464.

RCA ARC PROJECTOR for sale, 16mm Marc 300 manual load with power pack, 2" and 3" lenses, \$1000. REDHILLS FILMS, Cholame, CA 93431 (805) 238-4820.

COMPLETE 16mm LIP-SYNC PRODUCTION OUTFIT. INCLUDES MINT BOLEX 400' REX-5 w/100 POE LENS, FULL ELECTRIC DRIVES, COMPLETE ACCESSORY LINE, S-321 MAG/OPT RECORDING PROJECTOR, UHER 4000L RECORDER, AND COMPLETE CINE SOUND SYSTEMS SOUND SYNC OUTFIT. COMPLETE PACKAGE ONLY, \$4,000. ARNOLD CHASE (203) 521-5252.

ARRIFLEX 35mm IIC high speed w/BNC hard front, quick change adapter for conversion to Arri bayonet mount, follow focus, variable and constant speed motors, 2-400' and 2-200' mags, periscope finder, Cine 60 flat base, battery belts, 16mm Distagon w/BNC adapter, KOWA primes w/follow focus gears, 20mm, 25mm, 32mm, 50mm, 75mm, 100mm, Angenieux 25-250mm zoom w/2x extender, Cinema Products zoom motor, 4 1/2" round filters, O'Connor 50 fluid head and full set legs, hi-hat, triangle. Custom cases, Excellent condition!! Phone (213) 277-0060.

SIEMENS 2000 Dual projector, cases, speaker, instructions, \$1,500. THOMCO, 6540 E. 21st, Tulsa, OK 74129 (918) 835-9941.

FOR SALE: Magnasync 16mm edge track sound/interlock system including recorder, 2 dubbers, distributor with control, interlock motor for B&H projector, mixer, cables and relays, excellent. A steal for \$6000. (414) 332-7111.

16mm XENON Lamphouse including bulb, model-1000 Optical Radiation Corp., demonstrator only 69 hours, new \$3,545, sale \$1,900. (517) 371-1477.

EQUIPMENT FOR SALE

SPLICERS, 16mm, HFC tape, \$115. Griswold R3, \$35. Siemens, \$12.50 HFC power rewind, \$135. H8 Std. needs takeup repairs, \$35. 3M front projection screen material, \$63. Lot BM kegs, juniors, senior, broads, boom stands, stands, bulbs, \$2300 value, \$460. Approx. 100 36" aluminum tubes, latch interlocking for portable grids, in cases, \$95. 12 5.75" recorder fly-wheel castings, 19 oz., rim weight when machined, lot, \$46. FABER (602) 948-8086.

MOTORLOCK: Crystal control for the Bolex MST sync motor, \$349. THE FILM GROUP, Box 9, Wethersfield, CT 06109. (203) 563-2574/529-5531.

ANAMORPHIC lens, Kowa "Prominar", almost new, now surplus, for 16mm camera and projection, \$225. (213) 256-1703.

WOLLENSAK Fastax WF-4 high speed motion picture camera, complete package, excellent, \$750. (612) 825-4746.

ANGENIEUX 12/120, \$1,200. Telekilar 300mm \$350. Arri Std. Mts, Arri Perifinder, \$600. Pathe 16mm with intervalometer \$450. B&H 70DL, two lenses \$195. B&H Diplomat projector \$175. New Miller Super-8 tripod \$235. Box 1830 AMERICAN CINEMATOGRAPHER. (213) 662-4507.

MOVIOLA 35mm \$2700. Nagra 4.2L, loaded, \$3500. Dolly (ColorTran) \$3300. ColorTran lights, O'Connor 100 head, many extras. (305) 753-4744 after 6PM EST.

STEENBECK ST6000, 16/35mm, 6-plate, completely overhauled. (403) 264-6242.

PROFESSIONAL 16mm upright Moviola 4-sound, 1-visual head, Magnasync Mag film recorder on 3 70' rackmounts with 3 playbacks, distrib motor & mixer, two immaculate Beaulieu R16 cameras, all accessories, 17-68 Angenieux lens, Crown IC 150 preamp, mike (213) 667-2139.

FOX STUDIO 35mm cameras with crystal sync, prime and anamorphic lenses. For rent or purchase #1820. AMERICAN CINEMATOGRAPHER, (213) 662-4507, 463-5903.

16BL w/12-120, Crystal MTR, 4-400 foot magazines, power cable, battery, prime lens housing and case, \$7,995. New Angenieux 12-120 w/AV-30 VF or 7 1/2" VF \$1,995. New 9.5-57 w/AV-30VF, \$2,995. Call or write: GENERAL CAMERA CORPORATION, 471 Eleventh Ave., New York, NY 10018. (212) 594-8700, Mr. Schlansky.

NAGRA III recorder, HTP case w/pocket. Nagra SLO resolver synchronizer, Sennheiser MKH 404 mike with filter & battery pack. These units in excellent condition. \$2200. CHILES (904) 764-5281.

AURICON CINE-VOICE conversion. Angenieux 9.5-95mm in brand new condition. Complete Filmagnetic system, 400' magazine, Yoder conversion. Camera and lens have been on the shelf for five years and are in excellent shape!! \$3250. Mon-Fri, 8-5, (915) 677-2621.

FREZZOLINI 16mm Cvn. w/crystal Angenieux 12-120, \$2,250. Tripods-O'Connor 50D, NCE#ECL, Miller 40 lbs. call now (212) 486-9020.

NEW Magnasync 16mm insert recorder, \$3,000. Nagra IV L, \$2,400. Pako Pro hi volume processor, \$3,000. (415) 388-0838.

FLICKER FREE BRITISH ACL. Looks like new, rare find. Includes 15-150 Angenieux zoom, 2-200' mags, Xtal motor, battery, charger & case. Taken by Attorney as fee over 3 years ago and has been in storage. Test film & details, call GLOBE BUSINESS SALES (612) 929-1613, MR. FOX.

MAIER-HANCOCK 816 hot splicer, Ediquip 4-gang synchronizer, two Hollywood rewrites, one Ediquip title-winder, Hervic Minette 16mm viewer, Mint condition, Total price \$625. (314) 822-0258.

EQUIPMENT FOR SALE

ARRIFLEX BL, Apec, 10-100 Zeiss, 2-400' magazines, universal motor, power cable, camera case, \$7500. Arriflex BL, Apec, 12-120 Angenieux, 2-400' magazines, universal motor, power cable, camera case, \$9500. Arriflex 16M/B, variable speed motor, 2-400' magazines, power cable, camera case, \$4000. Bolex "EBM", 16-100 POE lens, sync generator, battery charger, pistol grip, carrying handle, sync cord, "C" mount adapter, filter holder, universal cable, \$2000. Waddell-Nova 11 hi-speed camera, 2 AC/DC motors, boresight, extension tubes, 13mm and 50mm lenses, case for power pak, camera case, \$3000. O.H. HIRT, 41 N. 11th St., Philadelphia, PA 19107 (215) 629-8560.

AVEX mixing system, manufactured by Multi-Track Magnetics, Inc., with DBX, Urei 527A graphic equalizer, and echo chamber, set up for either 16mm or 35mm operation, \$31,991. Showchron editor, 6-plate, \$5294. Arriflex 16S, s/n 14348, with 12-120mm Angenieux, APEC door, on-board batteries, and 3 magazines, \$3598. Magnasync series 2200 film recorder, \$1229. O'Connor model 30 tripod, with hi-hat and triangle, \$759. Urei 527A graphic equalizer \$562. Leo-pack battery, 28V, \$277. Maier-Hancock hot splicer, model 1635 \$246. Precision synchronizer, 16mm, 7-gang \$206. Guillotine 16mm splicer, straight and diagonal (new), \$186. Moviscope \$174. Guillotine 16mm splicer, straight and diagonal, \$134. Pentax spotmeter \$126. Kinetronics chair \$105. Leopard shoulder brace \$103. Magnasync bulk eraser, model G-936, \$77. Triner postal beam scales, 4 lbs., \$57. Precision sound reader, \$53. Heathkit tone generator, model 1G-72, \$46. Luxo editing lamp, color correct, \$44. Triner postal beam scales, 1 lb., \$42. Sekonik light meter, \$38. Moviola re-winds, WDU-16, \$27. Gossen color temperature meter, \$25. Luxo editing lamp, \$22. HOWARD BASS, Box 81799, College, AK 99708. (907) 452-2906.

SYNC BEEP 1/4-inch tape prerecorded with high-level 1000 Hz 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 pre-paid packet containing 20 strips totaling 100 35mm frames. D. P. UPTON CO., P.O. Box 5052, Tucson, AZ 85703.

COLORTRAN crab dolly, \$3500. Dynalens with Arri 2C and S mounts, \$3600. Angenieux 12-120, Arri mount, \$1900. Cooke 10mm f1.9 Arri mount, \$500. 1200 ft mag for Arri BL, \$1250. Arri sync motor, 120V, \$800. Arri fiberglass blimp, 16mm S, \$975. B&H HR 16 w/120V mtr, 2-400 ft mags, 17-85 zoom lens, \$995. Maier Hancock hot splicer, \$325. Magnasync SMR 16-URS sound reader, \$150. Tel-Amatic 16mm contact printer, \$500. DePue sound-silent contact printer, \$5500. Jamieson Campac ECO-ME-4 processor with tanks & pumps, \$7900. Nagra 3 recorder, \$1595. RCA BC6B Audio board 16 in -14 out, \$1595. Ampex 4 chnl. mixer MX 35 \$100. MR 103B mike boom & perambulator, \$1400. Cine Trailer w/2 generators, lighting & grip equip., \$13,900. All the above in like new condition. Call (812) 282-0437.

SIEMENS INTERLOCK, mint condition, \$2,300. Sonorex interlock \$2,950. Siemens interlock, needs repairs, \$1,500. Magnasync x-400 16mm recorder, like new, \$1,150. Magnasync recorder system, 3 recorder dubbers, looping, remote, solid state electronics, distributor, dual channel, 3 six foot racks, interlock projector, complete system, \$8,500. SOS hotpress, \$350. DeVry 35mm portable interlock, \$3,950. Moviolas 16 & 35mm, viewers, splicers, thousands of goodies, Catalog. INTERNATIONAL CINEMA, 6750 NE 4th Ct. Miami, FL 33138 (305) 756-0699.

PRINTER Peterson 16mm picture and sound head, B&H 35/16 printer, Depue printer parts, developing machines, pumps, projectors 35mm. Additional varieties equipment available, call with your requirements. NEPTUNE CORPORATION, 115 W. 45th St. NY 10036 (212) 765-4785.

RATES Ads set in lightface type 50c per word. Minimum ad. \$5 00. Text set in lightface capital letters (except 1st word and advertiser's name) 60c per word. Modified display format (text set in boldface type, capitals or upper and lower case) \$5 00 per line. Send copy with remittance to covpayment to Editorial Office. American Cinematographer, P. O. Box 2230, Hollywood California 90028. Forms close 1st of month preceding date of issue.

EQUIPMENT FOR SALE

NAGRA 4.2 with crystal and case, best offer over \$2500. Call or write: BRIAN FRANK, 2700 Neilson Way, Santa Monica, CA 90405 (213) 399-7618.

XEROX Standard #4 camera & processor D both or separate, B&H Eyemo 71 reflex zoom lens, Canon Scoopic-16, Eclair Camarette 35 w/mags. Excellent prices (301) 270-3107 or write DAN COFFIN, 7301 Garland Ave., Takoma Park, MD 20012 or leave message at Burt Martin Studio, Burbank, CA.

SUPPLIES

BLACK LEADER, 16mm, fresh stock processed to 4.0+, guaranteed \$.03/ft. min. order 2000 ft., complete lab service and supplies. 16mm & Super-8. LEO DINER FILMS INC., 350 Golden Gate Ave., San Francisco, 94102 (415) 775-3664.

MOLDED Polyethylene Cases, stock or custom sizes, with or without foam. THE PELICAN GROUP, P.O. Box 16667, Irvine, CA 92713 (714) 559-4883.

KODAK Film Sale. Take advantage of 20% lower Cdn. dollar, eg., 7242EF, 41, 52, 56, \$6/100 roll. 7247 \$35/400 FILMEX, 55 Maitland St., Toronto, Canada, M4Y 1C9 (416) 964-7414.

SERVICES AVAILABLE

CONSULTATION, special application fluid or mechanical heads (motorized, encoded, etc.) Building and studio design assistance, market investigation and marketing. THE PELICAN GROUP, P.O. BOX 16667, Irvine, CA 92713 (714) 559-4883.

ARRIFLEX, ECLAIR, ANGENIEUX service and repair, modifications, mounts, lens repairs, collimation, through the lens projections—STEENBECK, sales and service. HERMAN GALLI CAMERA SERVICE, 6804 Melrose Ave., Hollywood, CA 90038 (213) 931-4111.

RON PAUL URIARTE, cinematographer, 2nd unit cinematography, on location around the world, around the clock. (213) 660-6138.

3/4" VIDEOTAPE editing system, offline/mastering. HORIZONTAL EDITING STUDIOS, Hollywood, (213) 461-4643.

SITUATIONS AVAILABLE

PROFESSIONAL CAMERA REPAIR TECHNICIAN. Victor Duncan, Inc. has openings in Dallas for professional camera repair technicians. Interested applicants should have a practical background in camera mechanics and optics. VDI offers a complete employee benefit package and excellent working conditions. Salary commensurate with experience. Call Frank Marasco collect in Dallas, (214) 369-1165.

LENS REPAIR TECHNICIAN. Century Precision Cine/Optics in North Hollywood, CA has an immediate opening for one or more qualified individuals. Experience on professional motion picture lenses (Angenieux, Canon, Zeiss, etc.) preferred, but we will consider qualified trainees with related experience such as 35mm SLR or instrument repair experience. Salary open, Call Bill Turner or Steve Manios collect at (213) 766-3715.

PROFESSIONAL CINEMATOGRAPHERS: National and international locals for cinematography. INTER/COM "update" needs current information, your resume, equipment, experience, for proposed industrial, educational, and documentary assignments. Write (no phone calls) INTER/COM, 244 Thorn St., Sewickely, (Pgh.) PA 15143 USA.

RADIO-TV Jobs. Stations hiring nationwide! Free details: "Job Leads," 1680-PD Vine, Hollywood, CA 90028.

SITUATIONS WANTED

MAN 27, married w/2 children seeks apprenticeship under Stop Motion or optical effects master. Asking fair salary and real commitment. Currently in NY metro area, will relocate. Serious inquiries only: GARY DUERR, 18-6 Skytop Gardens, Parlin, NJ 08859.

MISCELLANEOUS

WANTED: INDEPENDENTLY-PRODUCED FILM (16mm) & VIDEO (3/4"), all genres, subjects, prefer shorts, for distribution to pay television systems by ICAP, non-profit organization; returns 75% of gross payments to artists. Send description of work to ICAP, 99 Prince Street, New York, NY 10012.

WANTED

RAW FILM STOCK, 16/35mm will consider all types. Top cash. RAFIK, 814 Broadway, New York, 10003 (212) 475-7884 collect.

UNIVERSITY OF WISCONSIN-MILWAUKEE Department of Film is in search of 20 Bell & Howell 70DR 16mm cameras in solid condition with lenses and useful accessories. Mail or phone descriptions for sale or donation to Rob Danielson, P.O. Box 413, Milwaukee, WI 53201 (414) 963-6016 or 6015.

WANTED 35mm background projector, 35mm Aerial Image Projector head, 35mm B&H 2709 camera, 400-ft. Mitchell, Acme or B&H Bi-Pack magazines any misc. animation equip., 35mm flatbed film editing machines. L.S.I., 238 E. 26th St., New York 10010 (212) 532-1865.

FILM EQUIPMENT WANTED will trade '50s or antique jukeboxes. (714) 536-3224. ROGER MENDE, Box 549, Huntington Beach, CA 92648.

WANTED used Steadicam, universal model with or without accessories. Call GRETCHEN (213) 667-2139.

MITCHELL S35 or R35 MK II camera wanted. May be with or without lenses, magazines or motors. Write stating serial number, condition and price required. Reply to EUROSHOOT FILMS, 2645 Greenvally Rd., Los Angeles 90046.

WANT TO SELL YOUR EQUIPMENT?

Call Marvin Stern or Bill Sutphin at Birns & Sawyer, Inc. We need all kinds of motion picture equipment—Nagra III recorders (any condition), lighting (any type), Angenieux zoom lenses, etc. Let us know what you have. We pay top prices. Call (213) 466-8211 or come in. BIRNS & SAWYER, INC., 1026 N. Highland Ave., Hollywood, CA 90038.

WE NEED YOUR EQUIPMENT

Jack Pill and Associates needs your used professional motion picture equipment. Call us first. We buy or consign. Along with top prices, we offer you service. Since we guarantee and back consignment equipment to our customers, your equipment will be quickly sold instead of gathering dust. Call or write Ken Skuban at JACK PILL & ASSOCIATES, 6370 Santa Monica Blvd., Hollywood, CA 90038 (213) 466-3238.

BELL & HOWELL HR or DR cameras, 400 magazines, finders, 115AC motor, 41-1 ratio, Kodak K-100 cameras. NATIONAL FILM COMPANY, 10302 Kingspoint, Houston, TX 77075.

WANTED, 200-ft magazine and 400-ft conversion kit for Cine Special II, KARASCH, 1824 Western, Cedarburg, WI 53012.

WANTED: Professional mixing console, 12 or 16 in, 4 out, reasonable cost. Solid state preferred. (416) 361-1437.

WANTED: Professional motion picture equipment, 16mm and 35mm, cameras, lenses, lights, sound, editing, projection, lab, etc. for outright purchase or consignment. Supply complete technical description and price for immediate reply. Ted Lane, ALAN GORDON ENTERPRISES INC., 1430 Cahuenga Blvd., Hollywood, CA 90028 (213) 466-3561.

HIGHEST cash paid for any 16mm color film, especially VNF (7240 & 7250) mag. stripe. FILMEX (filmbroker) (416) 964-7415 collect. Overseas call: Filmex Europa 46-31-181699.

RENTAL

ARRI 35BL for rent complete with super speeds, 20-120 Angenieux with blimp etc. New York, ROESSEL C.P.T. (212) 424-1600.

KEM rentals in Hollywood. HORIZONTAL EDITING STUDIOS (213) 461-4643.

CINEMONTA/STEENBECK RENTALS, 8-plate, 16mm/35mm delivered to your premises. KLM ASSOC., INC., West Coast (213) 931-6151, East Coast (301) 299-7259.

NAGRAS FOR RENT: Nagra IVs @ \$79 per week. Nagra IIIs @ \$54 per week. Call for information about Vegas, Sennheisers and other location sound equipment. SCHARFF COMMUNICATIONS (914) 769-5087, Daily NYC delivery.

HOLLYWOOD editing equipment rentals at bargain rates. Also complete editorial services. CRAWFORD EDITORIAL, (213) 463-7939.

MOTOROLA WALKIE-TALKIES \$25/day/unit. Discounts available for quantities or longterm rentals. (404) 353-1548.

American Cinematographer REPRINT

June, 1968

FILMING "2001—
A SPACE ODYSSEY"

December, 1969

SUPER-8—THE STATE
OF THE ART

June, 1970

SUPER-16

October, 1972

VIDEOTAPE & FILM

ALL IN ONE PLACE



\$5.00

(Dealer Discounts—Inquire)

AMERICAN CINEMATOGRAPHER
P.O. Box 2230, Hollywood, Calif. 90028

Please send me _____ copies of the
FOUR-IN-ONE reprint @ \$5.00 ea.,
postpaid.

NAME _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

California residents please remit 6%
Sales Tax. (30¢ per copy). Foreign
buyers please pay by International
Money Order or U.S. Funds.

Frezzolini® Frezzi-Flex®

**THE WORLD'S FINEST
16mm CINÉ CAMERAS**



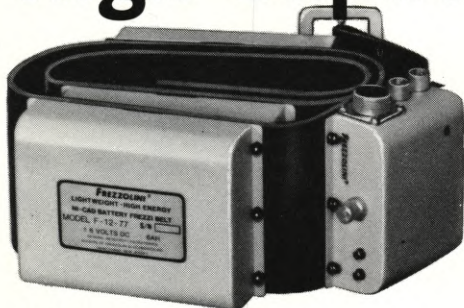
with or
without
FREZZI
side-mounted
amplifier

U.S. Patent
#D277,601 and
Patents Pending
for the improved
features of this camera.
Patent and trademarks
in the U.S.A. and world-wide.

Model
FR-16A
Illustrated.

now filming Olympic Sports,
TV Prime-Time Series,
Commercials,
TVNews World-Wide.

Frezzi™ E.N.G. ENERGY High-Capacity Battery Packs



This is "Frezzi-Belt®" Model
F-12-77. It powers Ikegami
Model 37/77/79 Video Cameras.



These are Model FBP Frezzi
plug-in Battery
Packs for the
JVC CR-4400LU
Videocassette
Recorder.

Less than 1 hour
re-charge time with
"Frezzi-Fast™" Chargers.

**Portable power for all video cameras, video
recorders, and hand-held "Frezzi™" Lights.**

For information: (New Jersey 201) 427-1160 or (New York 212) 594-2294.

Frezzolini 16mm ciné cameras & E.N.G. support equipment.

Made in U.S.A.

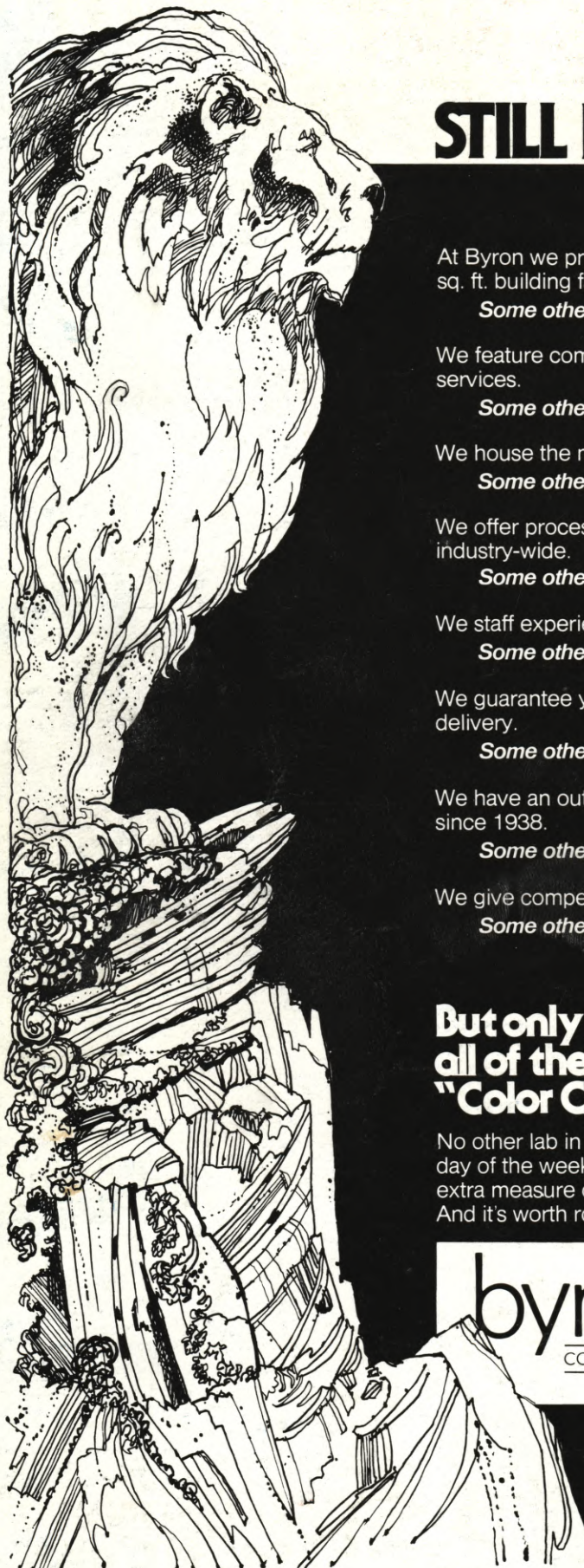


Frezzolini Electronics Inc.
7 Valley St. Hawthorne, N.J. 07506 USA

Export Agents:



11 Caesar Place, Moonachie, New Jersey 07074 USA • (201) 939-0875 • Cables: Cinecraft Moonachie • Telex: Cinecraft Moon TLX 13-8875



STILL KING OF THE HILL.

At Byron we provide a unique specially designed 60,000 sq. ft. building facility.

Some other labs do, too.

We feature complete post-production film and video services.

Some other labs do, too.

We house the most modern, sophisticated equipment.

Some other labs do, too.

We offer processes and techniques that are accepted industry-wide.

Some other labs do, too.

We staff experienced, competent personnel.

Some other labs do, too.

We guarantee you excellent quality work and on-time delivery.

Some other labs do, too.

We have an outstanding reputation for performance since 1938.

Some other labs do, too.

We give competitive, down-to-earth prices.

Some other labs do, too.

But only Byron offers all of these services plus "Color Correct"® prints!

No other lab in the world offers so much . . . every day of the week, every week of the year. It's this extra measure of perfection that keeps us on top. And it's worth roaring about.

byron 
COLOR-CORRECT®

65 K Street, N.E.
Washington, D.C. 20002
(202) 789-1100

World's most sophisticated videotape
and film laboratories.

T-N-99/99-0001-000MEMBER-999
008-007-90038-00143
RCDERICK RYAN
EASTMAN KODAK
6706 SANTA MONICA BLVD
HOLLYWOOD, CA 90038