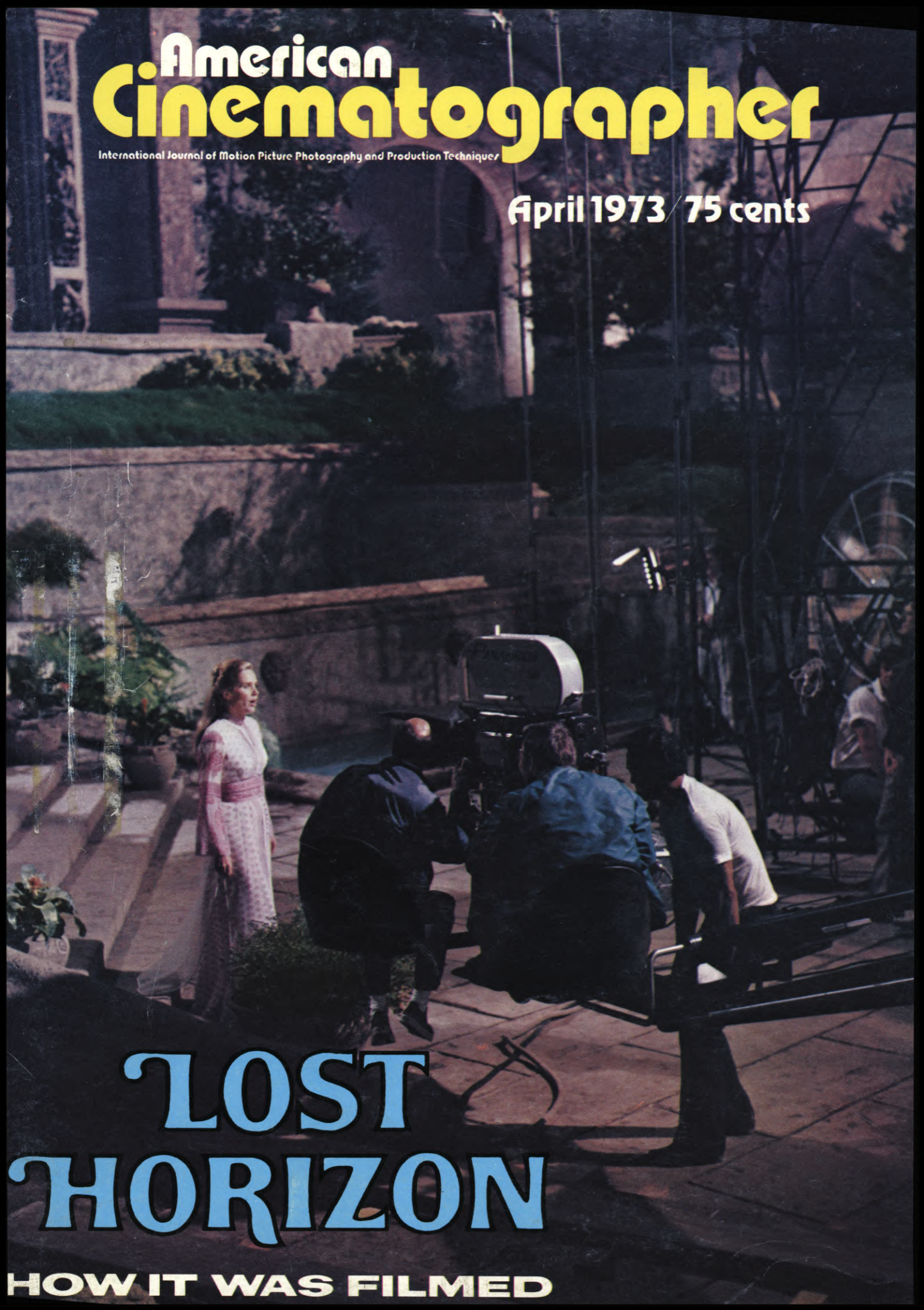
American Cinematographer
International Journal of Motion Picture Photography and Production Techniques
April 1973 / 75 cents



LOST HORIZON

HOW IT WAS FILMED

The CSC Reflex II

The most versatile reflex BNC in the world!

Cooke lenses:

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

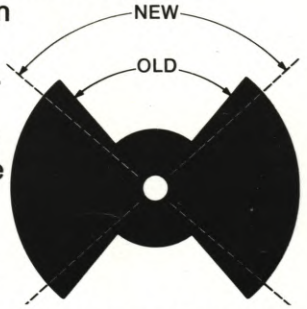
Ultra wide angle:

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

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

New shutter:

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



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

SUSTAINING SMPTE MEMBER

ASSOCIATE MEMBER FILM PRODUCERS ASSOCIATION OF NEW YORK

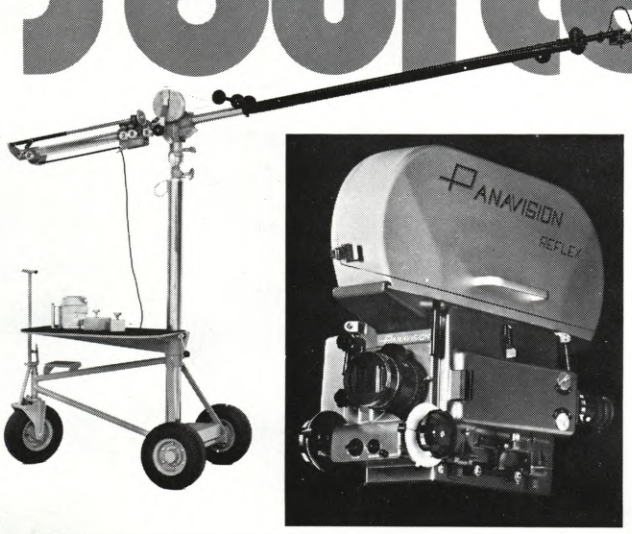
CSC

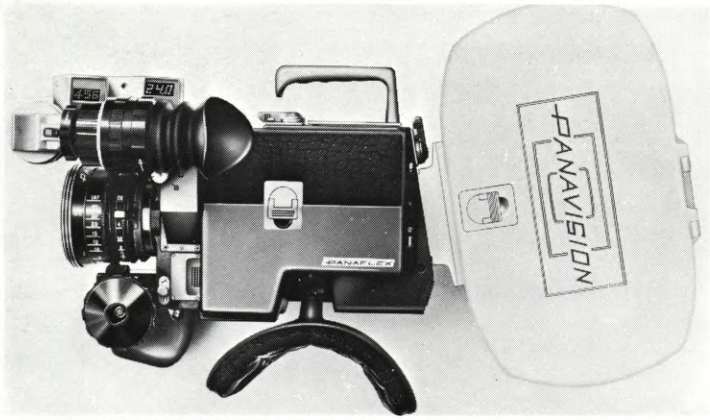
camera service center, inc.

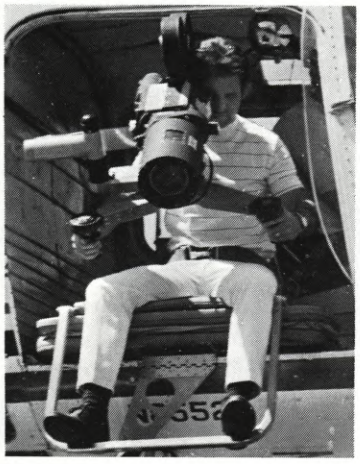
sales affiliate • CAMERA SALES CENTER CORPORATION

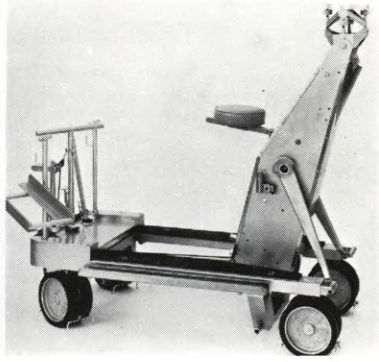
625 WEST 54th STREET • NEW YORK, N.Y. 10019 • 212 757-0906

The source:









In filmmaking, compromises can be expensive. Especially when it comes to equipment.

When you want the performance of a Panavision camera or lens, you don't want to be "sold" on a substitute.

If you need the steadiness of a Tyler helicopter mount, you don't have time to gamble on someone else's.

If your sound man wants the versatility of a Fisher boom or dolly, you don't want to settle for something else.

At General Camera, we understand.

We've built a company around the idea. Offering the latest, finest cameras, lenses, lighting, grip, support and sound equipment from literally dozens of the world's top manufacturers. Either individually, as a package or on our own ultramodern multiple sound stages in the heart of Manhattan.

That's why we're known as "the source" to many motion picture people: their one stop for all the equipment and supplies they need. Because they don't want to settle for anything less.

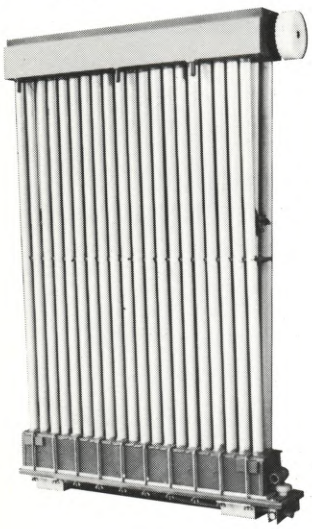
general camera corporation

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

Jamieson film processors because...

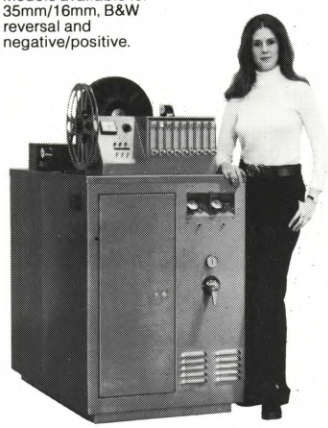
...they're lower priced, operate more economically, and have proved themselves in 100s of installations in 23 countries.

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



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

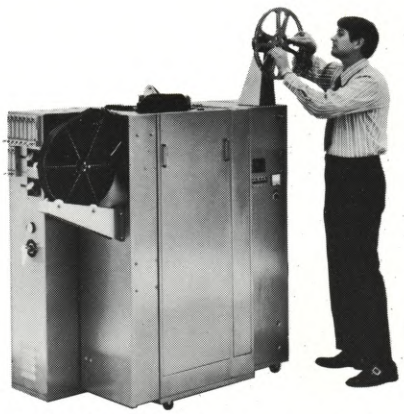
JAMIESON COMPAC 16/8
Conducts standard ME-4 at 20 FPM. Runs 16mm and 8mm interchangeably. Models available for 35mm/16mm, B&W reversal and negative/positive.



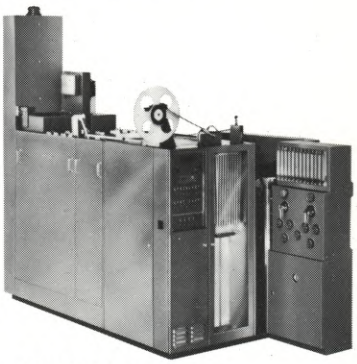
Other important features include: Lower maintenance and labor costs, and less power and water usage. The small volume of solution in the machine gives long-term stability and improved cleanliness. And film threading is both easier and faster, accomplished without removing the tank.

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

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



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



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

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

Name_____ Title_____

Firm_____ Division_____

Address_____

City_____ State_____ Zip_____

JAMIESON FILM COMPANY

EQUIPMENT DIVISION 9171 King Arthur Drive, Dallas, Texas 75247 **(214) 638-2660** Represented in Europe, the Middle East and South Africa by **W. Vinten Limited.**

American Cinematographer
International Journal of Motion Picture Photography and Production Techniques

APRIL 1973 VOL. 54, NO. 4

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

Advertising Representative
Paul Gilbert
485 Fith Avenue
New York, N.Y. 10017
(212) 884-2911

• FEATURE ARTICLES

• DEPARTMENTS

ON THE COVER: On the huge "Shangri-La" set at Burbank Studios, Panavision camera crew, under supervision of Director of Photography Robert Surtees, ASC, films a musical number with Liv Ullman, one of the many stars appearing in the Ross Hunter musical version of "LOST HORIZON" for Columbia Pictures.

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

Wolfgang Reigl checks critical relationship between claw and registration-pin on 16mm Arri movement. Tolerance is 0.0004 inch. Image on screen is magnified ten times.

Five facts you should know about Arriflex service:

More people, more parts, more equipment than any other motion picture camera.

When you buy a camera, obviously you're also buying the service that backs it up—or doesn't.

We've all heard the horror stories about some cameras—parts not available for three months, etc. Service *does* vary between brands. Ask any dealer. Some points to consider:

1. Service People: Quantity

In the U.S.A., we have more than *twice* as many service people as our nearest competitor. That means faster service, *consistently.* Generally, ten working days. By appointment, two days. In an emergency, back the same day.

2. Service People: Quality

75% of our people were trained at the Arri plant in Germany. Wolfgang Reigl, for example—the man in the photo opposite. Seventeen years ago, he started as an apprentice at the factory. And he spent *twelve years* there before coming to this country.

3. Spare Parts In Stock

At the Arri Service Centers in New York and Los Angeles, we have camera parts in stock worth well over $200,000.00—all catalogued. If you ever need an Arri part in a hurry, we are almost certain to have it.

4. Equipment For Maintenance

We also have about $73,500.00 worth of repair and test equipment—the same as that used at the factory. Our Service Centers here can and do match the factory's optical, mechanical and electronic tolerances.

5. Worldwide Arri Familiarity

The vast majority of the professional cameras in use around the world are Arriflexes. And where there are Arriflexes, there is Arri service.

Says Kemp Niver, A.S.C.: "I quote a flat fee for a job. Breakdowns come out of *my* pocket." Shooting a project for CARE that involved traveling to 26 countries, he chose to take an Arri 16S.

Fixed in Hong Kong

In Hong Kong, the lens mount was slightly damaged in a fall. But Mr. Niver was able to get it serviced there right away. "The Arriflex," he says, "is a camera that an Independent can depend on."

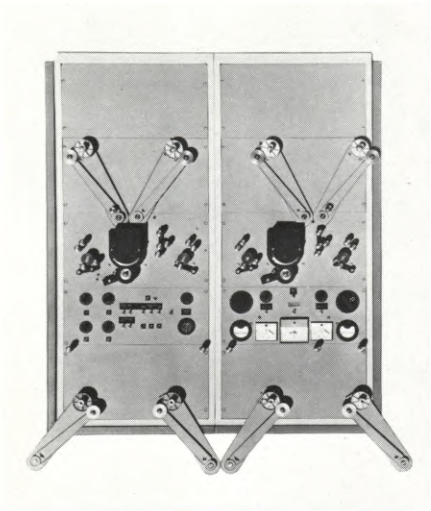
ARRI

ARRIFLEX COMPANY OF AMERICA

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

WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE



GUILLOTINE INTRODUCES A HIGH-SPEED PANEL PRINTER FOR BLACK-AND-WHITE, COLOR, AND SOUND FILM

Highlighted as the fastest continuous operating machine of its kind available today, a new panel film printer by Guillotine Splicer Corp., Westbury, New York, has been designed to meet every known requirement of the professional film handler.

In announcing the new equipment, Barry Green, president of Guillotine, laid stress on the printer's flexibility of operation, modular construction, and range of options and additive systems—advantages designed to provide maximum machine utilization, low operating cost, and optimum service economy.

Used for release prints, the new Guillotine printer has a production capability of 680 feet of 16mm per minute, or 1,360 fpm of Super-8. If sound is included, output is 340 fpm. At somewhat slower speeds, it can be used as a standard printer with scene-to-scene change capability. Or in parallel operation as two separate machines running two separate negatives.

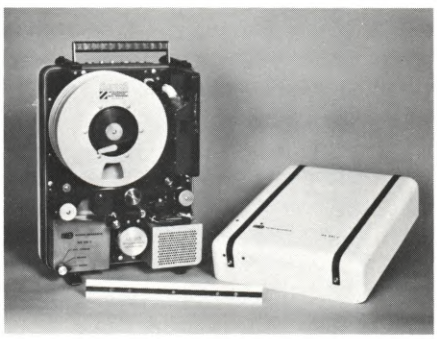
Priced to meet the cost requirements confronting the motion picture industry today, the Guillotine panel printer operates equally well with both black-and-white and color film, as well as with film with soundtrack. For added flexibility it includes the needed equipment for standard subtractive processing, and offers options for additive color.

The Guillotine printer is self-contained. Built-in loop arms do away with separate loop connection arms. Each lamp house has its own cooling blower; these vent out the top, reducing dust and paper scatter. The lamp house contains in-head filter holders with additional slots for Kodak 2B and Pittsburgh heat-absorbing glass filters.

Basically designed for 16mm and 35mm formats, the printer can be adapted to other formats on request. It features 3000-foot film capacity with takeup torque controlled for 3-inch minimum core size. The package includes lamp control rheostats, lamp diaphragms, a lamp balancing meter, lamp Voltmeters, counters, and two heads permitting (a) picture or sound, (b) picture and sound, and (c) picture with picture.

For a factory demonstration, or additional information and a new technical data sheet, readers are invited to write or call Guillotine Splicer Corp., 45 Urban Avenue, Westbury, New York 11590; phone (516) 997-5566. West Coast: 3407 West Olive Drive, Burbank, California 91505; phone (213) 846-7740.

•



ECHO SCIENCE ANNOUNCES A 38-POUND, PORTABLE BROADCAST COLOR VTR PRICED UNDER $20,000

Echo Science Corporation demonstrated two new color, high-band video recorders at the recent 1973 National Association of Broadcasters Convention. Both the Model 201C record/only portable and the Model 411C record/reproducer meet all performance levels of existing quadruplex recorders.

The 201C weighs only 38 pounds including internal battery. It may be hand-carried or back-packed. Its 15" x 11.42" x 6.42" dimensions are made possible by a unique Echo Science-developed transport. This transport was first introduced into military airborne use three years ago and has seen extensive service in extremely severe and hostile environments. The color electronics are newly developed and represent the very latest state-of-the-art performance levels.

Echo Science forecasts widespread use of the 201C for remote journalistic applications and other uses where its compact size and light weight are essential. The 201C records for 30.6 minutes on 1" tape on a standard 8" reel. The under-$20,000 price will enable many broadcast originations not heretofore economically feasible.

The Model 411C is priced at under $40,000 and provides full studio broadcast level performance. It is transportable, weighing less than 140 pounds and can be ordered as a table top or console configuration; dimensions are 28" x 19" x 17¼".

The basic machine will have the functional equivalents of Amtec*, Colortec*, velocity compensator, and processing amplifier. (*TM Ampex). A composite signal (NTSC or PAL) is recorded on 1" magnetic tape with a record time up to one and a half hours on a 12½" reel. The 411C will have the additional capability of insert and assemble editing.

Both Model 201C and 411C utilize ECHO SCIENCE's twin-head 1" helical video format with 13 degrees scan angle and 3.7" scan length. Head life is estimated to be 1,000 hours.

For additional information contact: Don Prather; Advertising Manager; Echo Science Corporation; 485 Middlefield Road, Mountain View, CA 94040. Telephone: (415) 961-7145.

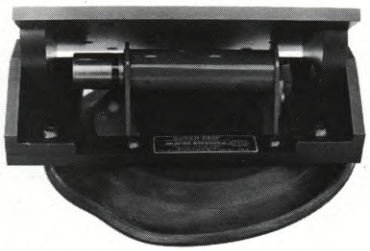
•

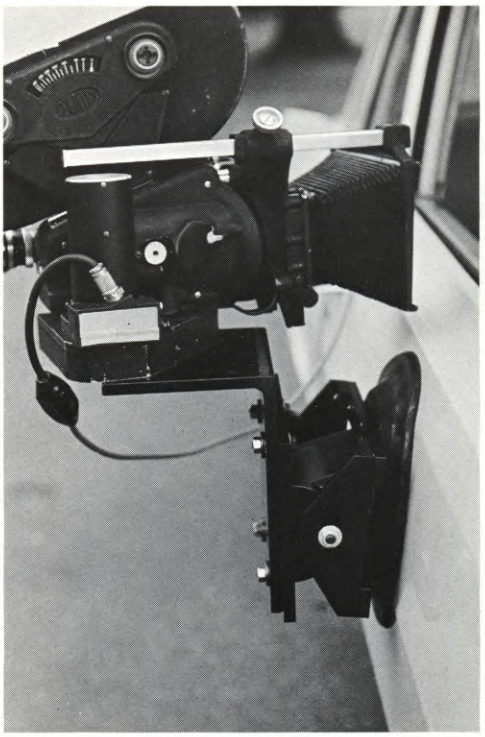
NEW VIDEO DISC RECORDER OFFERS VARIABLE SPEED RECORDING AND PLAYBACK AT SPEEDS FROM FAST TO STOP-ACTION

A new Video Disc Recorder, featuring variable recording speeds from one to sixty frames per second, offering

Continued on Page 446

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 it may be tilted through a 360° circle by turning the gripping pad on the surface.

FEATURES:

- Built-in attaching pressure indicator prevents damage to expensive equipment.
- Attaching pressure is more than 700 pounds.
- Gripping pad section is made of tough, durable rubber with a ribbed sealing edge.
- Molded-in ring provides secure attachment for the tilting plate assembly.
- Gripping face is formed on a 12" radius; edges are below center about an inch.
- Tilter assembly is made of 6061T6 aluminum, machined to close tolerances to assure reliability.
- Completely annodized for long life.

Since its introduction in 1971, Super Grip has successfully worked on features such as *The New Centurians, THX-1138, The People, What's Up Doc?* and many more plus television commercials for such products as Mercedes-Benz, Arco, Gremlin, Porsche-Audi, Ford Pinto, Chevrolet, Jeep, Pontiac, Goodyear Tires, Johnson Outboards, A.C. Spark Plugs, International Harvester Scout and many more, and films for television, industry and medicine.

Price: $325.00

(Includes Super Grip complete with metal fitted carrying case, angle camera bracket, mounting bolts, wrench and instructions.)

Authorized Super Grip Dealers:

Camera Equipment of Hawaii
2805 Ala Wai Blvd.
Honolulu, Hawaii
(808) 922-3901

The Camera Mart Inc.
456 W. 55th St.
New York, N.Y. 10019
(212) 757-6977

Chevereau au Service du Cinema
20 Rue de La Chine
75020 Paris, France

Cine 60
630 9th Ave.
New York, N.Y. 10036
(212) 586-8782

Cinerama Private Ltd.
Metro House, Post Box 1232
Mahatma Gandhi Road
Bombay 1, India

Victor Duncan, Inc.
11043 Gratiot Ave.
Detroit, Michigan 48213
(313) 371-4920

F&B Ceco of Calif., Inc.
7051 Santa Monica Blvd.
Hollywood, Calif. 90038
(213) 466-9361

Helix, Ltd.
679 N. Orleans St.
Chicago, Ill. 60610
(312) 944-4400

O. H. Hirt, Inc.
39 N. 11th St.
Philadelphia, Pa. 19107
(215) 923-0650

Image Devices
811 N.W. 111 St.
Miami, Fla. 33168

Parco SA
111 Rue de Longchamp
75 Paris 16e, France

Jack Pill & Associates
6370 Santa Monica Blvd.
Hollywood, Calif. 90038
(213) 466-3238

R.E.C.E.S.A.
Rio Amazonas 85 — Ier Piso
Mexico 5, D.F., Mexico

Samuelson Film Service Ltd.
Samcine House
303-305 Cricklewood Broadway
London N.W. 2, England

Serion
Rua Antonio de Godoi 122-12°
and. conjs. 126/9
Sao Paulo, Brazil

Dedo Weigert Film GmbH
Rottmannstrasse 5
8 Munich, W. Germany

Distributed Exclusively By:

SERVING THE WORLD

alan gordon enterprises inc.

1430 N. CAHUENGA BLVD. • HOLLYWOOD, CALIFORNIA 90028
SALES (213) 985-5500 • *RENTALS* (213) 466-3561

INDUSTRY ACTIVITIES

UNIVERSITY OF SOUTHERN CALIFORNIA TO HOLD FOURTH ANNUAL FILM CONFERENCE

This spring, the Fourth Annual USC Film Conference will be held April 5-8, 1973. As in previous years, the Conference will again bring together artists and leaders of the film industry to discuss the present and future state of the art. In addition to seven daytime panel discussions, three new feature films and a program of student films will be screened.

Because we feel that the Film Conference will be of great interest to the members of your organization, we ask your co-operation in announcing and publicizing the event. The Conference will take place at the University of Southern California, Los Angeles campus. Ticket prices will be $5 for students, $10 for teachers, and $15 for others.

Conference tickets will go on sale the last week of March at the USC Cinema Department, or by mail-order form. For individual events, tickets will be sold at the door on a first-come, first-served basis. Admission for the screenings will be $2, but a package for three feature films and an evening of student films can be purchased for $5.

•

GODDARD COLLEGE ANNOUNCES FILM FESTIVAL

Goddard College is sponsoring a non-profit film festival from May 24 through May 27, 1973. The Goddard New England Film Festival is open to all independent, experimental filmmakers. Any pictorial mode of film expression is acceptable.

Approximately twenty-four hours of film will be shown within the four-day period. Every film viewed will be considered for cash awards.

Filmmakers Shirley Clark and Nicholas Ray will be present to judge the entries. Each judge will present an evening of his/hers films and conduct a subsequent symposium.

Entries will be on 16mm., optical soundtrack or silent, and thirty minutes in length.

For further information and application brochure write to the Goddard New England Film Festival Committee. Frank Grasso, Coordinator, Goddard College, Plainfield, Vermont 05667.

•

USA FILM FESTIVAL AT SMU CELEBRATES ITS THIRD ANNIVERSARY

For the third year, Southern Methodist University in Dallas will host the USA Film Festival, April 9-15. Its status in the film world is unique in that it is the only festival dedicated solely to United States productions. All American-made films are given equal attention, whether they are produced by students, experimental filmmakers or major studios . . . no matter what the age or millimeter.

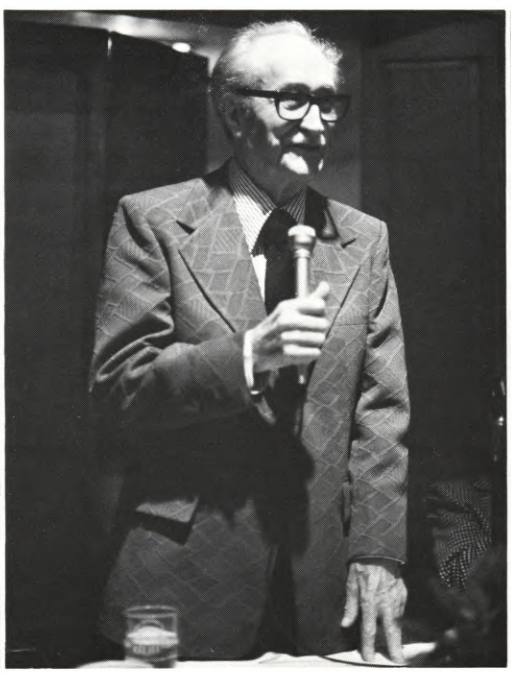
It is both an historical festival (looking back each year to one of the great American directors, studying the American tradition) and a forecasting festival (finding new directors and pointing out the new direction that the American movie takes each year). George Stevens and Frank Capra have been honored by the past two festivals. This year Raoul Walsh is to be the subject of a week-long retrospective. A Texas retrospective is particularly suitable for Walsh. Although born in New York, he was raised in Texas and is a survivor from the old days of the real West. Moreover, directors like Ford, Curtiz and Walsh are becoming the subject of a new body of film criticism. Up until this time, Walsh was one of the faceless masters of the rugged action picture, the often underestimated genre that demonstrated the kind of tough, unpretentious art that Americans do best and appreciate least.

Walsh has chosen seven films for the week-long festival; *THEY DIED WITH THEIR BOOTS ON* with Errol Flynn, *THE ROARING TWENTIES* and *WHITE HEAT* with James Cagney, *HIGH SIERRA* with Bogart, *WHAT PRICE GLORY* with Victor McLaglen and Dolores del Rio, *CAPTAIN HORATIO HORNBLOWER* with Gregory Peck, and *BATTLECRY* with Aldo Ray and Dorothy Malone. Many of the stars of his films will be present for the screenings and discussions that follow.

Past festivals have brought together the old and the new Hollywood with

Continued on Page 493

ASC President Ernest Laszlo (center) chats with Cinematographer Joseph Walker, ASC, and Director Frank Capra at recent A.S.C. dinner meeting honoring the two famous film artists. (CENTER) Mr. Walker recalls happy times photographing 19 films for Frank Capra. (RIGHT) The affable Mr. Capra shares a joke with A.S.C. members.



Introducing the Super8 Sound™ Recorder

With sound on Super 8 fully coated magnetic film, Super 8 sync filmmaking is as straightforward as 16mm practice

THE Super 8 Sound Recorder IS A MULTIPLE PURPOSE MACHINE THAT RECORDS ON SUPER 8 MAGNETIC FILM AND COMBINES THE FUNCTIONS OF

LOCATION RECORDER
LABORATORY RESOLVER
EDITING BENCH AMPLIFIER
SOUND STUDIO DUBBER
TRANSFER RECORDER

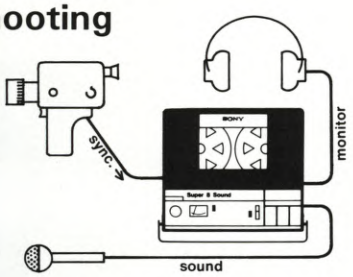
IT IS COMPATIBLE WITH MOST OTHER SYNC SOUND SYSTEMS, PROFESSIONAL OR AMATEUR, PILOTONE OR DIGITAL SYNC PULSE REEL-TO-REEL OR CASSETTE

THE PRICE IS $495

The Super 8 Sound Recorder can be used with a number of Super 8 cameras, with no camera modifications, to shoot original sync sound. The machine servo-controls its own speed to match the frame rate of the camera during filming. It produces a sound track directly on easily edited Super 8 Fullcoat. Or, for the filmmaker who prefers to record his sound on tape in the field, this recorder will automatically resolve the sync tape onto Super 8 Fullcoat for editing. The machine will also servo-control its speed to match the frame rate of a Super 8 sound projector, making it possible to view sync rushes or to transfer edited sound to magnetic edge stripe in precise sync.

The Super 8 Sound Recorder will also synchronize to another Super 8 Sound Recorder (up to six may be electronically interlocked and started simultaneously) for multitrack re-recording or dubbing.

shooting



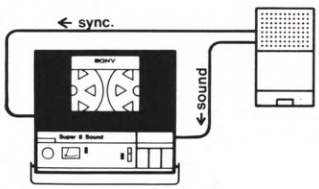
The **Super 8 Sound Recorder** has been designed to sync with the latest generation of "electronic" Super 8 cameras equipped with a once-per-frame contact switch (electronic flash socket).

Bauer C Royal 10	*Canon 814E*
Beaulieu 4008ZM2	*Cinema Pathe DS8*
Fujica Z800	*Leicina Super RT1*
Minolta Autopak-8D10	*Nizo S560, S800,*
Rollei SL84	*S56, S80*

The **Super 8 Sound Recorder** servo-controls its speed so that one frame of Super 8 magnetic film passes the recording head for each frame of film exposed in the camera. A cable from the camera carries frame rate information to the recorder. The soundman can monitor sync condition using a sync indication meter on the recorder. The recorder will run between shots for continuous sound, or it can be stopped and started by remote control from the camera.

Cableless operation is possible with crystal sync cameras, since the **Super 8 Sound Recorder** has an internal timer that can hold its speed at 24 frames per second to within one frame in two minutes.

resolving

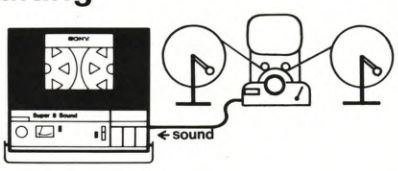


Super 8 magnetic film is now available to the filmmaker who already owns a sync sound system. The **Super 8 Sound Recorder** does not necessarily obsolete any existing equipment or, more importantly, any existing footage since it will automatically resolve sound from most* original sync tracks, Pilotone or Digital, Reel-to-Reel or cassette, including

Alan Sidi Cine Sync	*Filmin/Optasound**
Bell & Howell	*Fuji*
Filmosound 8	*Philips/Norelco*
Carol Cinesound	*Rivendell*
*Chinon**	*Scipio*
Cine Slave	*Synchronex**
Farnell Tandberg	*Volland Synton**
Nagra	*Tandberg*
Stellavox	*Uher*

**Accessory equipment is required for systems that do not use the standard once-per-frame digital pulse or standard 60Hz pilotone.*

editing

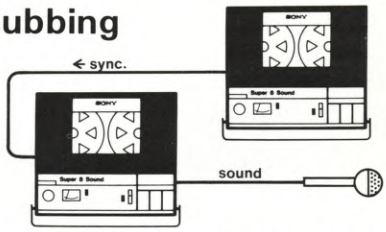


With new Super 8 fully-coated magnetic film, editing in Super 8 is almost identical to professional procedures in 16mm and 35mm.

A full line of Super 8 editing equipment is available, from inexpensive amateur editing benches to professional horizontal editing tables. The most economical approach is an editing bench-sync block, viewer, sound reader, and rewind arms, with the **Super 8 Sound Recorder** used as the editing bench amplifier.

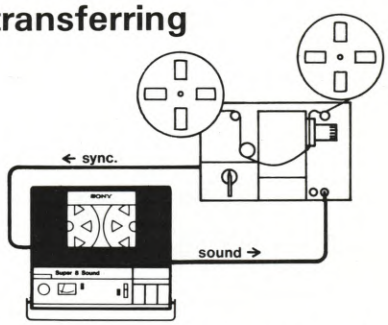
Filmmakers who learn Super 8 fullcoat editing techniques can apply them professionally in 35mm, 16mm, or Super 8 filmmaking. Filmmakers who are trained in 16mm techniques can now afford to own their own Super 8 fullcoat editing equipment as a means of making their own films on a modest budget.

dubbing



Up to six **Super 8 Sound Recorders** can be electronically interlocked. They are started simultaneously with a common start switch. Each recorder can be in either play or record mode, so that any number of original tracks can be rerecorded or mixed, and any number of new tracks can be dubbed in sync with original sound and with picture.

transferring



Once edited, sound can be easily transferred to magnetic edge stripe. The master sound track is placed on the **Super 8 Sound Recorder** at the sound start mark. The striped release print film is threaded into the projector to the picture start mark. When the projector is started, up to six recorders start automatically and maintain sync.

Transfer from the magnetic edge stripe back to magnetic film allows double system editing of single system films (e.g. Wilcam, or Synchronex sound films).

The Super 8 Sound Recorder comes complete with all the above capabilities; camera interlock, cassette recorder interlock, self interlock, 60Hz AC interlock, projector interlock, and an internal 24fps timing circuit that allows it to record cableless sync with crystal controlled cameras.

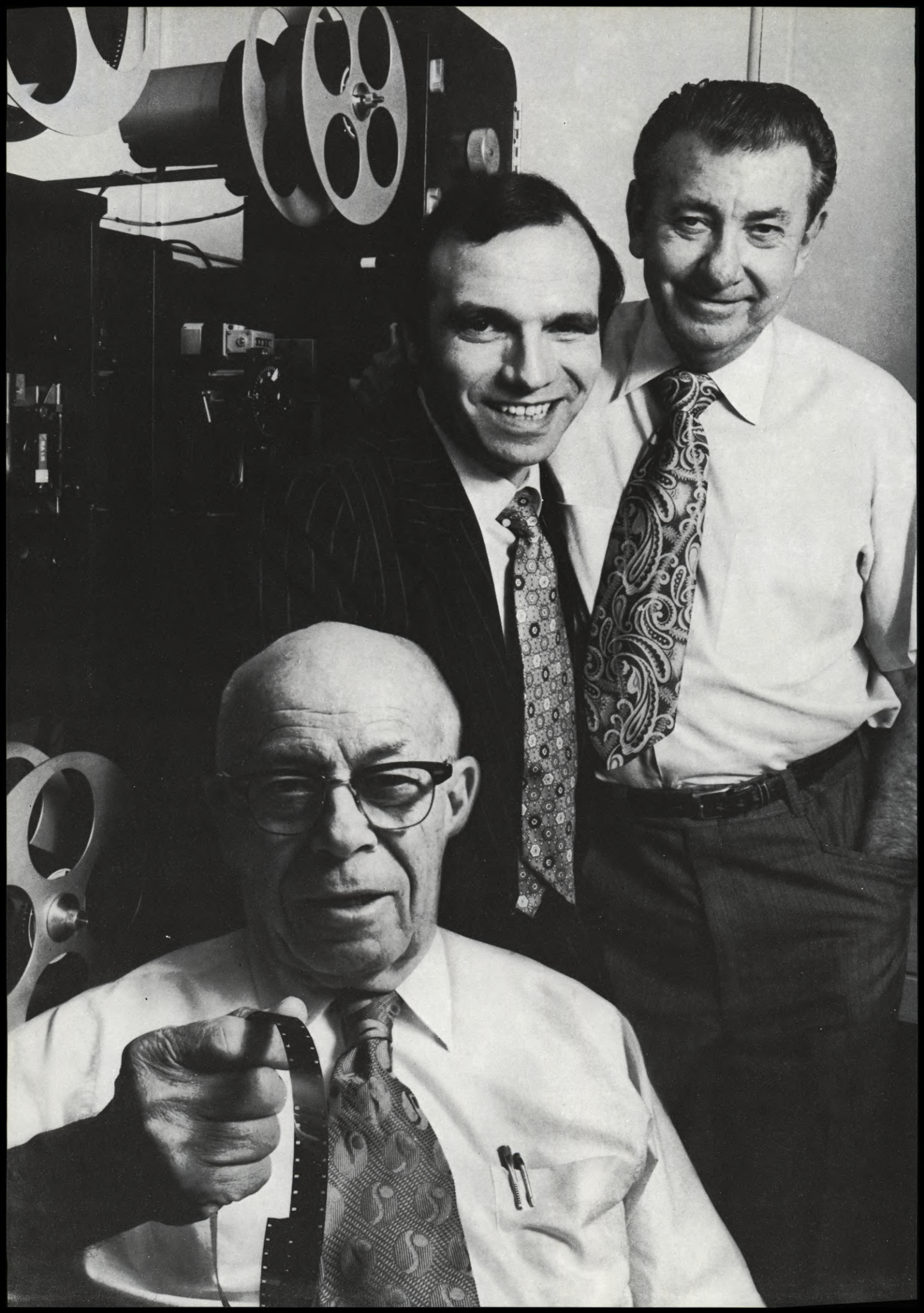
The Super 8 Sound Recorder is based on the well-known SONY TC800B variable speed servo-controlled tape recorder, augmented by six integrated circuits. Operation as a normal quarter-inch tape recorder is preserved, as is the one year full warranty.

Other **Super 8 Sound** Products and Services
- Super 8 Sound Cassette Recorder
- Super 8 Sound/Scipio Cinetape System
- Super 8 Sound Editing Bench
- Super 8 Sound Double System Projector
- Transfers to Fullcoat Magnetic Film
- Rentals of Super 8 Sound Equipment
- Film Classes Equipped from $2000

The price of the **Super 8 Sound Recorder** is $495. Bankamericard and Master Charge are accepted. For a technical description and order forms, please write to:

Super8 Sound™

77 HURON AVENUE, CAMBRIDGE, MASS. 02138



"Blow up 16mm to 70mm? Impossible.

"At least that's what Cecil and I first thought when Saul Swimmer handed us the Eastman 16mm film footage from 'The Concert for Bangladesh'. We had our reservations, but we told him we'd try.

"Then we started experimenting. Saul wanted to go to 70mm to get maximum stereo effect from the 14-track music tapes. Because the 16mm format is in the wrong aspect ratio to be blown up directly to 70mm wide-screen, we realized that we would lose about 50% of our original 16mm frame area... assuming that it could be done at all. No one had ever tried it, but we found the answer. We adapted a wet-gate system to an existing 65/70mm optical printer at Film Effects of Hollywood. Then we scanned each image vertically 'on the fly' as we were printing. Accurately.

"Our first trial experiments without the wet-gate were weak and scratchy. But we saw enough quality in the results to be convinced that the excellent Eastman 16mm negative would hold up going to 70mm. When we went to final process, the results were beautiful. Cecil, Saul and I were astounded. So was everybody else.

"The last step was release prints. Those we hand-made by going directly from the 16mm Eastman color negative film to 70mm Eastman color print film 5385.

"We had done something probably no one else had ever done before. With the right materials, nothing's impossible in this business."

Cecil Love and Don Weed of Film Effects of Hollywood. (Center) Saul Swimmer, Producer/Director of "The Concert for Bangladesh."

Model #ME-4-16-24 shown. Many other models available.

It's a better machine

Here are 14 reasons why...

TYPE 316 STAINLESS STEEL
Type 316 stainless steel except bleach, which is titanium.

LOW FILM TENSION
Bottom tendency drive uses "Wobble Rollers" for low, even film tension. "Soft touch" tires available on all rollers.

IMPERVIOUS BEARINGS
Ball bearings in solutions are stainless or plastic with glass balls. Gears are nylon.

HEAVY INSTALLATION
Tanks are heavily insulated to assure most precise temperature control.

FINEST PLUMBING
Chemical plumbing is PVC or polypropylene.

WATER AND AIR LINES
are copper or brass.

FLOWMETERS
provide constant replenishment of chemical solutions and visual monitoring of water flow.

TACHOMETER
assures continual, correct indication of film speed.

TEMPERATURE CONTROLS
assure precise control of developers and secondary solutions as necessary.

RECIRCULATION PUMPS
are finest U.S. make.

IMPINGEMENT DRYING
is accurately controlled.

REMOVABLE RACKS
for easy threading and maintenance.

BREAK ALARMS
and end-of-film alarms allow technician to relax.

ACCESSIBILITY
Components, controls, indicators and transport systems are in the open.

These are the features that make Houston the world's leading motion picture film processors. Every part of every Houston machine has been engineered to perform its function efficiently and dependably—in strict accordance with the film manufacturers' specs — and utilizing the best possible material and components for each particular need. After building processors for over 40 years, Houston knows virtually all the answers. Write us regarding your requirements.

HOUSTON
PHOTO PRODUCTS, INC.
655 E. 20th St. • Yuma, Ariz. 85364
Phone: (602) 782-3677

Please send info. on processors for types of film checked at right.

Name_____
Firm_____
Address_____
City_____ State_____ Zip_____

A processor for every film type and size

B & W Negative / B & W Positive / B & W Reversal / Ektachrome / Kodachrome / Kodacolor / Anscochrome / Negative Color / Positive Color / Microfilm / Super-8mm / 16mm / 35mm / 70mm

THE CP-16

AN ALL-NEW CAMERA

Not a Conversion

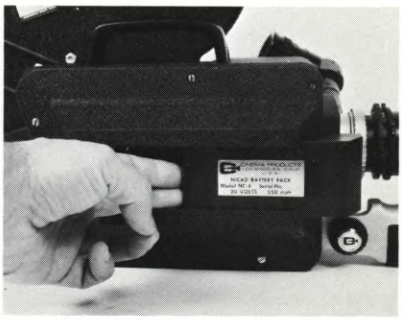
The CP-16 is now in use by television stations throughout the U.S.

The all-new CP-16 Single System/ Double System 16mm Sound Camera was designed especially for cameramen who are on the go. Manufactured of lightweight magnesium, it provides maximum portability and comfortable hand-holding balance. Additionally, the CP-16 represents a breakthrough in crystal motor technology. Its drive system consists of a small, highly efficient DC motor, an extremely accurate crystal control circuit and a compact plug-in rechargeable NiCad battery, all located within the camera body. *There is no external power pack, no camera cable.*

FEATURES:

- Camera body weighs 9 lbs., including motor, battery and control circuit.
- ½ Amp-hr. plug-in battery provides 3000 ft. minimum filming capacity per charge.
- "Battery Eliminator" permits camera operation from AC line while charging internal battery.
- "Out of Sync Blink" warning light near eyepiece.
- Removable hand grip with built-in start switch.
- Quick release magazine latch.
- Single lens turret designed for use with all "C" mount lenses.
- Pre-wired for Filmagnetic recording unit.
- Accepts 400 ft. or 1200 ft. Mitchell magazines.
- Built-in filter slot.
- Cordless double system camera operation.
- Unconditionally guaranteed to meet specifications.

CRYSTAL CONTROLLED MOTOR — The ultimate in quality and reliable operation, incorporating high efficiency, low power consumption, high torque, solid state integrated circuitry and high accuracy (+15 PPM/Temperature range 0-140°F) requiring only 9 watts of input power even when pulling a 1200 ft. magazine.



LIGHTWEIGHT BATTERY OPERATION — Camera operates directly from a simple, lightweight, quick change NiCad rechargeable battery, thus eliminating the need for an expensive power supply. Handles seven 400 ft. rolls on one battery. No worries about running out of power. Extra batteries small enough to fit into shirt pocket.

Manufactured by the Academy Award-winning

CINEMA PRODUCTS

In the East:

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

In the Midwest:

VICTOR DUNCAN, INC.
11043 Gratiot, Detroit Michigan 48213 • (313) 371-4920
155 East Ohio, Chicago, Illinois 60611 • (312) 321-9406
2659 Fondren, Dallas, Texas 75206 • (214) 369-1165

In the West:

ALAN GORDON ENTERPRISES, INC.
1430 N. Cahuenga Blvd., Hollywood, California 90028
Sales: (213) 985-5500 • Rentals: (213) 466-3561

CINEMA WORKSHOP

By ANTON WILSON

LIGHT METERS

Virtually every cinematographer uses a photo-electric light meter to determine proper exposure. Whether your meter is an incident, reflective, spot or TTL, it invariably operates with one or two types of photo-electric cells.

The most straightforward light meter systems employ a "photo-voltaic" cell. Light striking a photo-voltaic cell produces an electric current. As seen in FIGURE 1, a photo-voltaic type light meter merely consists of a photo-voltaic cell connected to a sensitive microammeter which measures the current from the photo cell. As light falls on the cell, current is generated and measured by the microammeter. As a greater amount of light falls on the cell, more current is generated and a higher reading is produced on the meter, and vice versa. By calibrating the scale on the meter in foot-candles as "f" stops, one has a simple "photo-voltaic" type light meter.

In practice, the photo-voltaic cell is constructed of a layer of selenium mounted on a metal base plate with a thin overlay or film of platinum or gold. Light meters using this construction are sometimes referred to as "selenium" meters. As you can gather, this type of meter is very simple in construction and requires very little maintenance. There are no batteries to wear down and the only two components are the cell and the meter movement. The selenium cell is a rugged and stable unit and should require little attention. The spectral sensitivity of the selenium cell is almost identical to that of film stock and, thus, no color temperature compensation is necessary. The only cautions are avoiding high temperatures, which can damage the cell, and a fall or jolt that would damage the meter movement.

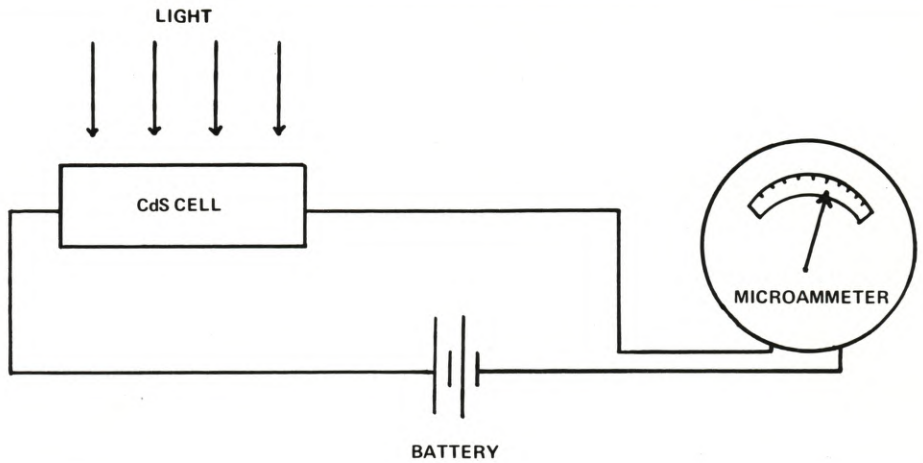


FIGURE 2

The only drawback of the selenium type meter is its limited sensitivity. The selenium meter is well suited for incident type meters designed for the motion picture industry, where shutter speed is usually 1/50 second and film speed is seldom much above 100 ASA. For situations involving high speed film, fast lenses and low-light levels, the selenium meter may prove to be lacking in sensitivity. In almost all professional situations, the selenium meter is unsatisfactory for reflected, spot and TTL light meter systems due to its limited sensitivity. These applications usually employ a "photo-conductive" type of cell.

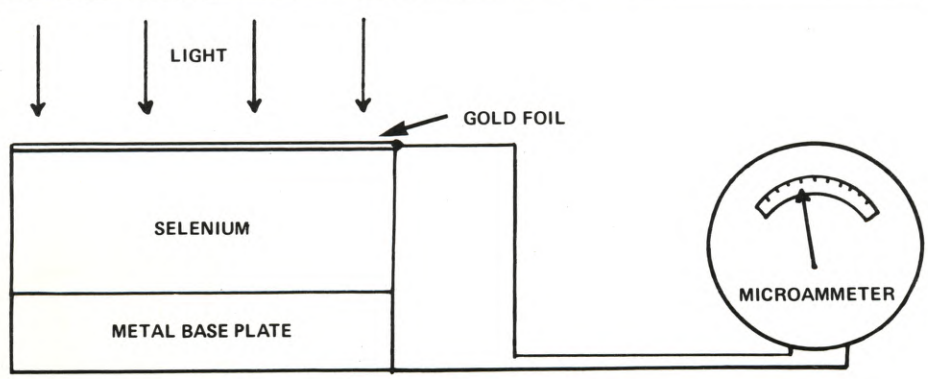
The "photo conductive" type cell is usually constructed of Cadmium Sulphide and thus meters employing this type of cell are referred to as "CdS-type meters". The construction of the CdS type meter is outlined in FIGURE 2. Basically, the CdS cell is a form of semi-conductor that varies its electrical resistance according to the amount of light that strikes it. The more light that strikes the CdS cell, the lower its resistance. Note that, unlike the selenium cell, the CdS cell does not generate any energy and, thus, a battery must be used in conjunction with the CdS cell. The battery provides the current, and the CdS *regulates* the amount of current by its variable resistance. As light hits the CdS cell, its resistance decreases, allowing more current to flow from the battery to the meter and vice versa.

The greatest advantage of the CdS cell is its high sensitivity, about 10 times greater than that of a selenium cell of equivalent dimensions. This makes the CdS cell particularly well-suited for low-light-level situations and meters with limited dimensions or acceptance angles, (i.e., spot meters and TTL meters).

The CdS type meter is quite popular in the professional motion picture industry. Almost all spot meters and through-the-lens metering systems employ the CdS cell. There are, however, certain disadvantages to this system. Because the CdS cell does not generate any voltage, a battery is necessary, which increases the size and weight of

Continued on Page 459

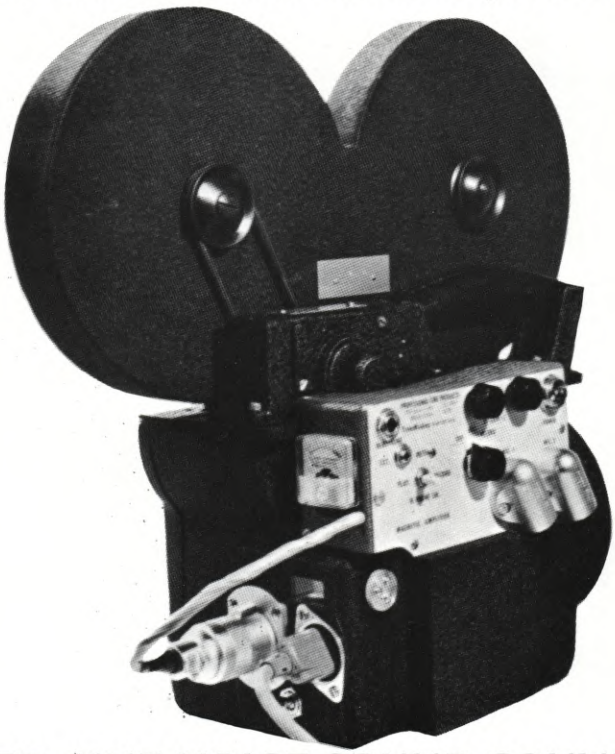
FIGURE 1



Gordon Yoder, Inc.

Formerly
Professional Cine Products, Inc.

PROFESSIONAL MOTION PICTURE EQUIPMENT & SUPPLIES



YODER CINE VOICE SOUND CONVERSION

New Cine Voice Camera	$1180.00
Gordon Yoder Conversion to 400 Ft.	795.00
Two 400 Ft. Mitchell Magnesium Magazines @ $175. ea.	350.00
Yoder-15 oz. side mount amplifier (2 inputs)	700.00
One Magnetic recording-playback head	480.00
Yoder Power Pack—operates camera & amplifier	295.00
12 to 20 Angenieux zoom lens	1690.00
Data Rings	59.50
Zoom Alignment Blocks	45.00
Elbow Stop for 7½" Finder Lens	35.00
Sunshade	13.25
Carrying Case (fitted)	100.00
	$5742.75

Special Package Price—COMPLETE $4,995.00

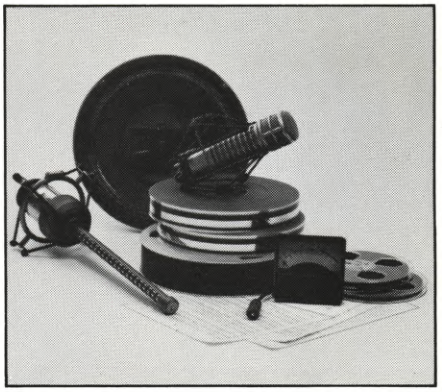
Compare the above package, including zoom lens, with any other sound camera on the market today. You will find the price to be anywhere from $1500. to $3000. *less.*

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

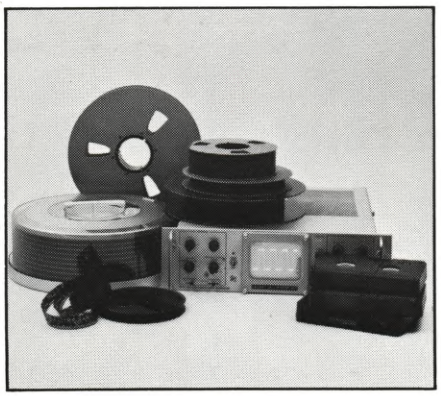
for total capabilities

film processing

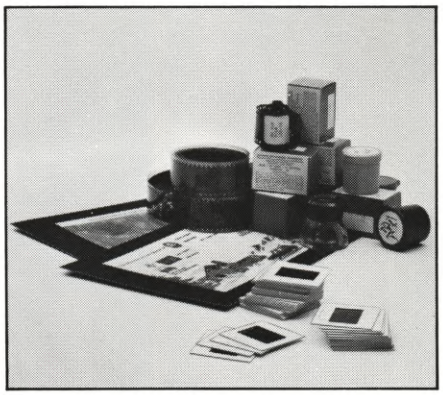
titles & opticals



Glen Glenn Sound Co.



video tape



filmstrips & slides

think CFI

We offer every post-production service that a customer may require . . . *laboratory services . . . title & optical services for both film and video tape . . . film strip and slide service . . . video tape to film transfers . . . video tape duplication . . . video cassette duplication . . . on-line and off-line CMX computerized editing facilities . . . the modern and complex sound facilities of the famed Glen Glenn sound organization.*

This is backed up by continuous research and development that has won for CFI more academy technical awards than any other laboratory in the world. Add to this the many advantages that come from having all these various facilities concentrated at one location, and you can see that CFI truly offers "state of the art" quality.

Perhaps the single factor that has contributed most to our growth and expansion over the past half-century has been our sense of direction and involvement with our industry—our philosophy. It is that every job we process is important—that every job we do for our clients, whether it is big or small, deserves and receives the personal attention of a large, professional and dedicated staff backed by the finest technical resources available.

At CFI you can rest assured that your work will receive the highest level of professional attention. And that we have the *total capabilities* to do whatever is necessary to make the results turn out right.

CONSOLIDATED FILM INDUSTRIES

HOME OFFICE:
959 Seward Street
Hollywood, California 90038
(213) HO 2-3161

NEW YORK OFFICE:
15 Columbus Circle
New York, New York 10023
(212) LT 1-1090

MID-WEST OFFICE:
333 North Michigan Avenue, Suite 312
Chicago, Illinois 60601
(312) MI 1-0028

THE BOOKSHELF

By GEORGE L. GEORGE

A hefty addition to the reference shelf, THE WORLD ENCYCLOPEDIA OF THE FILM (World $25), while not truly encyclopedic, is an extensive world-wide biographical dictionary with some 2000 names, and a cast-&-credits compilation of about 20,000 films. Meticulously edited by Tim Cawkwell and John M. Smith, it includes—a notable first—the names of many avant-garde filmmakers.

A novel presentation of a film rating system popular with TV viewers, the large size FILM BUFF'S BIBLE lists some 13,000 films released between 1915 and 1972. Editor D. Richard Baer's 1 to 10 marks are printed next to the 1 to 4 star ratings of critics Leonard Maltin and Steven Scheuer, culled from their paperback guides to movies on TV. (Hollywood Film Archive, 8344 Melrose Ave., Hollywood, CA 90069, $14.95.)

The 1972-73 edition of F. Maurice Speed's attractive and informative FILM REVIEW (Barnes $8.95) affords a mainly pictorial grand tour of European cinema's personalities and outlooks. Also included are topical articles on black power movies, stuntmen, the Hollywood of yore, children and dance films. The statistical part is impressive, with a roundup of world production activities, festivals, awards, and a detailed listing of last year's releases.

For finding your way around the motion picture industry and related entertainment fields, the WEST COAST THEATRICAL DIRECTORY 1972 (Gousha $6.95) is a useful and thoroughgoing guide. It lists, under appropriate headings, Los Angeles facilities, services and organizations, and includes sections on Hawaii, Nevada and San Francisco.

* * *

To communicate feelingly the magic appeal of moving shadows to young filmmakers is the successfully realized purpose of film critic and teacher Cecile Starr in DISCOVERING THE MOVIES (Van Nostrand Reinhold $9.75). Her ingeniously visual method uses stills in sequence with a running commentary in which historic facts, film synopses, critical assessments and practical advice blend into an enlightening and entertaining guide to the appreciation of a complex medium.

To describe as "delightful" a technical work may be surprising, yet it is right for a MOVING PICTURE GIVING AND TAKING BOOK, a compact treatise of film techniques "which could be read by poets" according to its author, the well known avant-garde filmmaker Stan Brakhage. His advice is sensible, inventive and stimulating. (Frontier Press, Stewart St., W. Newbury, Mass. 01985 $2.)

* * *

Barbara Gellman's PHOTOPLAY TREASURY (Crown $9.95) is a perceptive sampling of articles and illustrations from this granddaddy of fan magazines. Its evocations of Hollywood at work and at play, going back to this century's early teens, is a happy mixture of film buff nostalgia, and a perspective on social attitudes and early techniques for more scholarly readers.

The "persuasive force" of the documentary is assessed by Richard Meran Barsam in his thoughtful and comprehensive book, NONFICTION FILM (Dutton $9.95/4.95). A critical history of the 50 year old documentary genre, with emphasis on British and U.S. films, it analyzes their topical nature and creative technique and offers value criteria in the context of their aim to present solutions to major social problems.

* * *

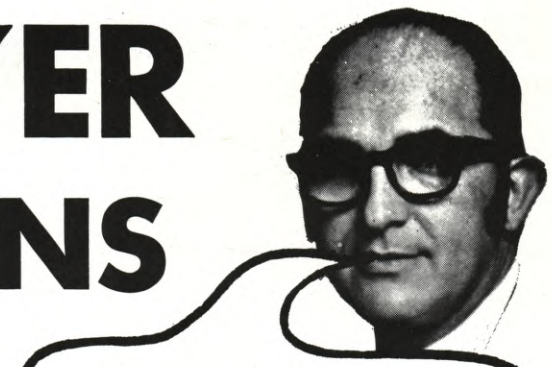
From Prentice-Hall, several new titles in its excellent Film Focus series present a selection of significant writings on the art of the film and those who create it. These stimulating books offer a broad exploration of the film medium and its impact on society through a knowledgeable symposium of critical essays, historic perspectives, biographical notes, technique analyses and occasional script excerpts.

Recent additions include FOCUS ON HOWARD HAWKS (Joseph McBride, ed.), FOCUS ON GODARD (Royal S. Brown, ed.), FOCUS ON BONNIE AND CLYDE (John G. Cawelti, ed.), FOCUS ON RASHOMON (Donald S. Richie, ed.), FOCUS ON SHOOT THE PIANO PLAYER (Leo Braudy, ed.) and FOCUS ON THE HORROR FILM (Roy Huss and T. J. Ross, eds.) ($5.95/2.45 ea.)

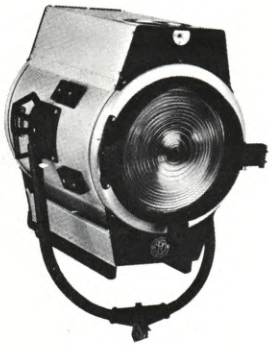
* * *

Marcel Ophuls' prize-winning documentary on the Nazi occupation of France, THE SORROW AND THE PITY (Outerbridge & Lazard $7.95) is a perfect illustration of a factual film whose "objective" approach unfortunately motivates ambivalent audience reactions not anticipated by its maker.

See SAWYER for BARGAINS



Talk about bargains! Here is bargain No. 1 from the **CINEMA GENERAL STUDIOS**



220 AMPERE BRUTE

	New	Used
Head	$2,900.00	$1,400.00
Molevator	1,500.00	695.00

BABY 1K SPOT

		New	Used
407	Head	$98.00	$39.50
40651A	Stand	49.00	19.50
40775A	4-leaf Barn Door	20.00	9.50

SENIOR 5K SPOT

		New	Used
415	Head	$305.00	$125.00
41494	Stand	87.00	39.00

JUNIOR 2K SPOT

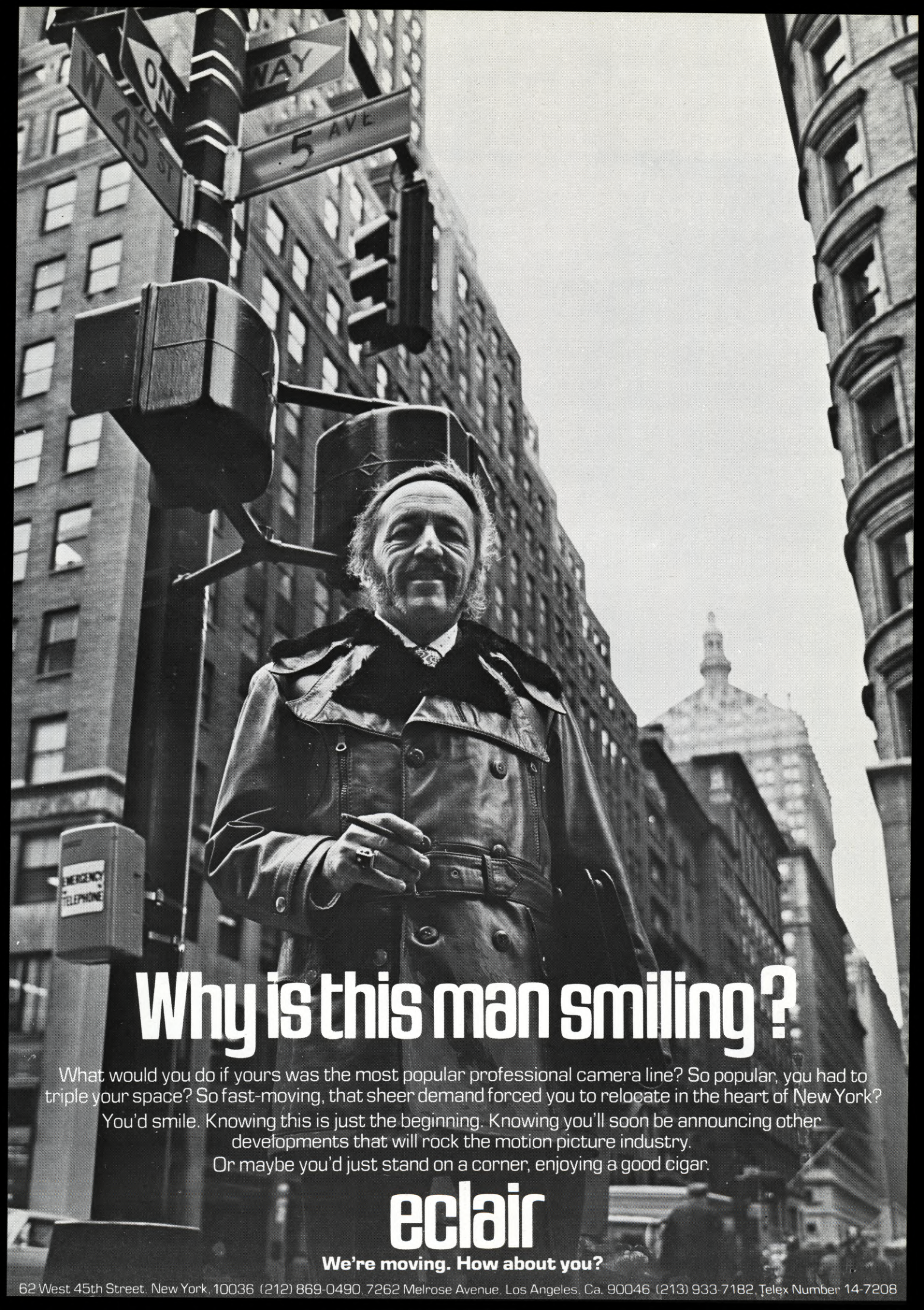
		New	Used
412	Head	$155.00	$69.00
410138	Stand	67.00	29.00
41252A	4-leaf Barn Door	25.00	10.00

WRITE FOR OUR PRICES ON COLORTRAN QUARTZ LIGHTS

CLIFF SAWYER

CINE • VIDEO • AUDIO-VISUAL EQUIPMENT
(213) 466-6116
1135 N. Highland Ave., Hollywood, California 90038 ADV 2

SALES
LEASE
SERVICE



Why is this man smiling?

What would you do if yours was the most popular professional camera line? So popular, you had to triple your space? So fast-moving, that sheer demand forced you to relocate in the heart of New York?

You'd smile. Knowing this is just the beginning. Knowing you'll soon be announcing other developments that will rock the motion picture industry.

Or maybe you'd just stand on a corner, enjoying a good cigar.

eclair

We're moving. How about you?

62 West 45th Street, New York, 10036 (212) 869-0490. 7262 Melrose Avenue, Los Angeles, Ca. 90046 (213) 933-7182, Telex Number 14-7208

AMERICAN SOCIETY OF CINEMATOGRAPHERS

ROSTER • MARCH, 1973

Active Members

L. B. Abbott
David Abel
Lloyd Ahern
Norman Alley
Herbert Alpert
John A. Alonzo
Murray Alvey
Gert J. Andersen
Howard A. Anderson, Jr.
Lucien Andriot
Arthur Arling
Monroe Askins
Charles Austin
Lucien Ballard
Manuel J. Berenguer
Carl Berger
Joseph Biroc
Haskell Boggs
Lamar Boren
Joseph Brun
Charles E. Burke
Taylor Byars
Ernesto Caparros
Frank Carson
S. C. Chuck
Charles G. Clarke
George T. Clemens
Wilfrid M. Cline
William T. Cline
William Clothier
Edward Colman
Olle Comstedt
J. Burgi Contner
Stanley Cortez
Floyd D. Crosby
Art Cruickshank
Russell Cully
Mark H. Davis
Dale Deverman
Drummond Drury
Victor Duncan
Linwood G. Dunn
Alric Edens
A. Farciot Edouart
Russell Ervin
Daniel L. Fapp
Ray Fernstrom
Gerald Finnerman
George J. Folsey
William A. Fraker
Ellsworth Fredricks
Henry Freulich
Lee Garmes
Frederick Gately
Maury Gertsman
Donald C. Glouner
Robert Gough
Loyal Griggs
Burnett Guffey
Robert G. Hager
Conrad Hall
Sol Halprin
Russell Harlan
Charles Harten
Robert Hauser
Charles W. Herbert
John L. Herrmann
Sid Hickox
Gerald Hirschfeld
Robert Hoag
Winton C. Hoch
David S. Horsley
Eric Horvitch
James Wong Howe
Michel Hugo
Andrew Jackson
Torben Johnke
Boris Kaufman
Richard A. Kelley
W. Wallace Kelley
Victor Kemper
Glenn Kershner
Jess Kizis
Benj. H. Kline
Richard Kline
Fred J. Koenekamp
H. F. Koenekamp
Milton R. Krasner
Charles B. Lang
Joseph W. LaShelle
Andrew Laszlo
Ernest Laszlo
Philip Lathrop
Sam Leavitt
Paul K. Lerpae
Harold Lipstein
Jack MacKenzie
Glen MacWilliams
Don Malkames
Karl Malkames
Fred Mandl
William Margulies
Brick Marquard
Jacques Marquette
Enzo A. Martinelli
Joseph V. Mascelli
Ted McCord
Ray Mercer
Russell L. Metty
Virgil Miller
David Millin
Hal Mohr
Robert C. Moreno
Nick Musuraca
John M. Nickolaus
Meredith M. Nicholson
Louis Page
Ted Pahle
J. F. Painter
Ernest Palmer
Kenneth Peach
Harry Perry
Frank Phillips
R. W. Pittack
Clifford Poland
Ray Rennahan
Gayne Rescher
Irmin Roberts
Charles Rosher
Harold Rosson
Giuseppe Rotunno
Joseph Ruttenberg
Robert Sable
Ted Saizis
Vincent Saizis
Charles Salerno, Jr.
David Savitt
Howard Schwartz
James Seeley
John Seitz
Leon Shamroy
Richard Shore
Lester Shorr
William V. Skall
Clarence W. D. Slifer
Harkness Smith
Edward J. Snyder
William E. Snyder
William Spencer
Harry Squire
Alan Stensvold
Clifford Stine
Harold Stine
George J. Stoetzel
William J. Storz
Harry Stradling, Jr.
E. Charles Straumer
Walter Strenge
Karl Struss
Robert L. Surtees
Jack Swain
Philip Tannura
Ellis Thackery
Thomas E. Tutwiler
Charles Van Enger
James C. Van Trees
Zoli Vidor
Paul C. Vogel
Ted Voigtlander
Joseph Walker
Harry Walsh
John F. Warren
Gilbert Warrenton
Harold E. Wellman
Frederick E. West
Joseph Westheimer
Albert Wetzel
Haskell Wexler
Charles F. Wheeler
William F. Whitley
William N. Williams
Harry L. Wolf
Ralph Woolsey
Lothrop Worth
Frank C. Zucker
Gerald D. Brodersen
Robert E. Burns
J. P. Carson
Gifford S. Chamberlain
Ronald Cogswell
Kenneth J. Coleman
Michael Crane
Robert B. Creamer
William A. Cushman
Dr. C. R. Daily
Fred H. Detmers
Edmund M. di Giulio
Walter G. Eggers
Ted Fogelman
Milton Forman
Richard B. Glickman
Dennis F. Godfrey
Henry Goldfarb
Robert Gottschalk
Allan Haines
William Hansard
Wm. H. Harrison
R. Bruce Hill
Wilton R. Holm
G. Carleton Hunt
Fred Hynes
Neal Keehn
John J. Kowalak
Herb A. Lightman
Grant Loucks
Lewis Mansfield
Kenneth M. Mason
John H. Maynard
George J. Mitchell
Kemp Niver
Capt. Don Norwood
Otto Paoloni
Warren Parker
John Pistor
William J. Reddick
Edward H. Reichard
Loren Ryder
Vaughn C. Shaner
Norwood L. Simmons
Sidney P. Solow
Abbott Sydney
Harry Teitelbaum
Lou Vincent
William J. Wade
Jack Webb
E. M. Whiting, Jr.
Ralph D. Whitmore, Jr.
Ted Winchester
Michael Zois

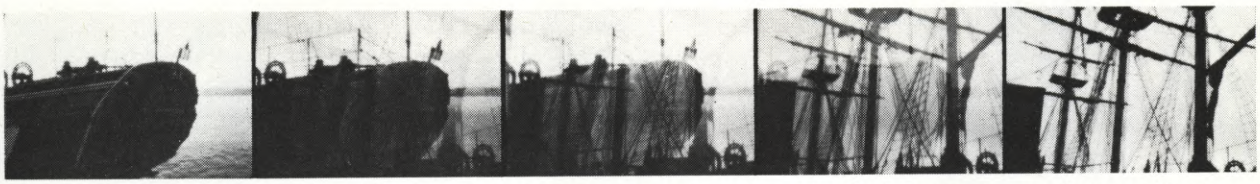
Associate Members

Herbert Aller
Mark Armistead
L. J. Baker
Haworth B. Belford
Edgar Bergen
James Branch

Honorary Members

Col. Edwin E. Aldrin, Jr.
Dr. August Arnold
Neil A. Armstrong
Col. Michael Collins
Edward P. Curtis
David MacDonald
G. A. Mitchell
Richard F. Walsh

Only two cameras in the world can make all these statements. The new Nizo S-560 and S-800.



1 *Automatic built-in lap dissolve.* This simple pushbutton device automatically fades one scene into another. A Nizo first.

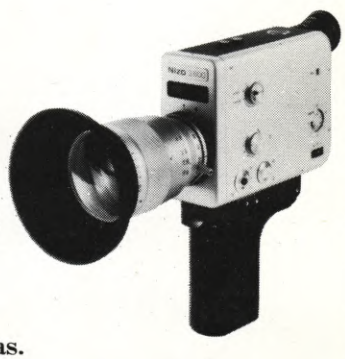
2 *Variable speed shutter.* It allows you to compensate for extreme light conditions. A Nizo first.

3 *Built-in intervalometer.* This lets you make time-lapse films without any attachments. Nizo introduced it in 1968.

A silver label with the guarantee number is affixed to the inside of the film chamber door. It is your assurance that the camera has undergone a 100% inspection according to an 18 point standard and carries the extended U.S. 2 year guarantee.

4 *Extended U.S. 2 year guarantee.** A recent Nizo innovation is an extended U.S. 2 year guarantee on these two cameras.

The new Nizo cameras embody the latest in technological advances—most of these capabilities were developed by Nizo and most remain Nizo exclusives. And when you've had an opportunity to examine the other features of the new Nizo S-560 and S-800, you'll see we haven't stinted anywhere else. To mention only a few: incomparable Schneider Variogon zoom optics with as much as an 11.4 to 1 zoom ratio; automatic metering that works all the way up to ASA 160; built-in sound synch pulse generator; and instant slow motion. The suggested retail price is $595 for the S-560 and $695 for the S-800. See your dealer for a complete demonstration. He'll have some statements of his own to make concerning the amazing new Nizo movie cameras.



BRAUN
Nizo

The engineering flawless. The design dominated by logic.

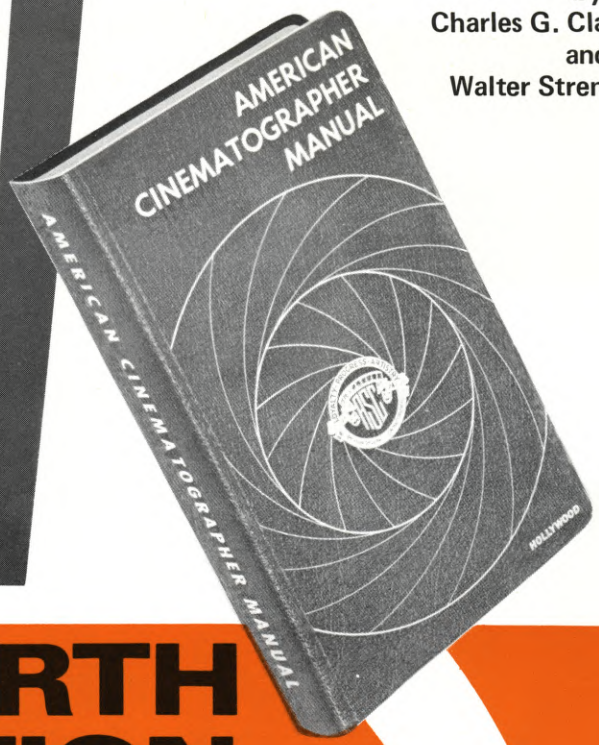
* If within two years from date of purchase a Nizo S-560 or S-800 movie camera fails to function because of defects in materials or workmanship and the unit is returned to an authorized service center, Braun North America will, at its option, repair or replace the unit without additional charge. Batteries, misuse or tampering excluded.

For information write: Braun North America, A Division of The Gillette Company . Dept. 108 , 55 Cambridge Parkway, Cambridge, Mass. 02142.
In Canada: Braun Electric Canada, Ltd., Mississauga, Ontario.

Price is subject to change without notice.

NEW

Compiled and Edited
by
Charles G. Clarke, A.S.C
and
Walter Strenge, A.S.C.



FOURTH EDITION

AMERICAN CINEMATOGRAPHER MANUAL

More than 600 pocket-size pages of concise, 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 most comprehensive compilation of Cinematographic data ever published.

Complete shooting data for Theatrical, Non-theatrical and Television cinematographers filming in Super-16mm, 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.

Find the following information:

Optical printer control
Camera panning speeds
Footage tables

THE AMERICAN CINEMATOGRAPHER MANUAL
P.O. BOX 2230
HOLLYWOOD, CALIFORNIA 90028

Please send _____ copies of the AMERICAN CINEMATOGRAPHER MANUAL @ 15.00 each, postpaid. No C.O.D.'s.

NAME .....

STREET .....

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

California residents please remit 5% Sales Tax (.75 per Manual).
Foreign Buyers please pay by International Money Order or U.S. Funds

The Professional Pioneer

Announcing the New MITCHELL MARK III

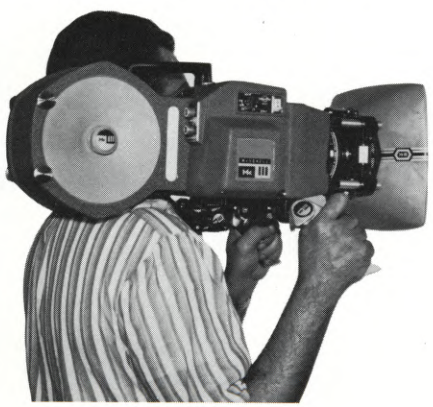
Mitchell Bridges a Half-Century of Motion Picture Camera Generations

The finest compact and mobile 35mm professional camera available in this new era of cinematography.

Since 1921, the Mitchell camera has been the "standard of quality" throughout the world. The new Mark III is another landmark in Mitchell's pioneering tradition. Light in weight but heavy in performance, the Mark III has the distinctive features perfected by its predecessor PLUS . . .

LIGHT WEIGHT — Magnesium castings are used to keep the weight, less lens, to 23 pounds without sacrificing Mitchell quality.

SILENT — New design techniques insure the camera output sound level is in the 30 DB range.



FILM TRANSPORT — The world-famed Mitchell MK II intermittent movement proven for all types of operations from animation to high speed. Dual register pins with dual pulldown claw assure absolute film control. 170 degree adjustable shutter.

CRYSTAL REGULATED MOTOR — Accuracy is plus or minus 15 parts per million at all speeds for precision sound synchronization. Variable speeds of 8 - 16 - 24 - 25 - 28 - 32 FPS. Automatic out-of-sync light is visible in viewing system. Automatic slate system fogs film in gate and sends signal to tape recorder.

REFLEX VIEWING — Rotary mirror, brilliant F2.0—6.2 power viewing. Generous 6mm diameter exit pupil provides maximum eye comfort.

MAGAZINE — Co-axial, 400 and 1000-foot capacities.

When it is time to design a better professional camera, Mitchell will produce another new Award Winner.

For further details contact your nearest Mitchell representative.

Australia	Birns & Sawyer (Aust.) Pty. Ltd.
Hong Kong	Salon Films, Ltd.
India	Cental Camera Company Private, Ltd.
Japan	NAC Incorporated

MITCHELL
CAMERA CORPORATION

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

QUESTIONS & ANSWERS

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

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

Q What splicing system would you recommend to give the least possible problems when using 16mm Ektachrome with magnetic stripe applied prior to developing?

A The correct professional method of splicing prestriped 16mm Ektachrome Film is to use a Bell and Howell foot splicer (or equivalent) equipped with blades that not only permit scraping the emulsion from the film held in the left side but also the base side of the film which is clamped in the right side. The magnetic stripe is on the base and must be removed by scraping to permit a secure bond to be effected by the solvents which constitute the film "cement".

In the absence of a splicing machine equipped with appropriate blades on the right side as described above, it is possible to scrape the base side of the right-hand film by temporarily placing it emulsion down in the left-hand side of the splicing machine. It would be well to practice this technique under white light illumination with waste film before attempting to splice underdeveloped film in the dark.

Q Do professional motion picture producers employ ¼ inch magnetic tape for recording lip-sync sound scenes in theatrical and television pictures? Is such tape perforated?

A Yes. Quarter-inch magnetic tape is used for sync-sound recording, particularly on location, by employing a synchronizing signal, or pulse, which is obtained from a regular 60 cycle AC power source, or off the camera or the camera's synchronous or governor-controlled motor, equipped with a pulse generator. The pulse is an index of camera frame speed vs. sound timing. The pulse is recorded on a separate track alongside the audio track, or it is recorded in "push-pull" on the edges of the tape, with the audio track in the middle. Either system allows for using the pulse in re-recording to 16mm or 35mm magnetic film so that picture and sound track may be edited in editorial side-by-side sync. This is an ideal system for location shooting where a number of camera and sound components and light weight are a factor. A governor-controlled electric motor may be used to operate the camera off a standard nickel cadmium battery pack.

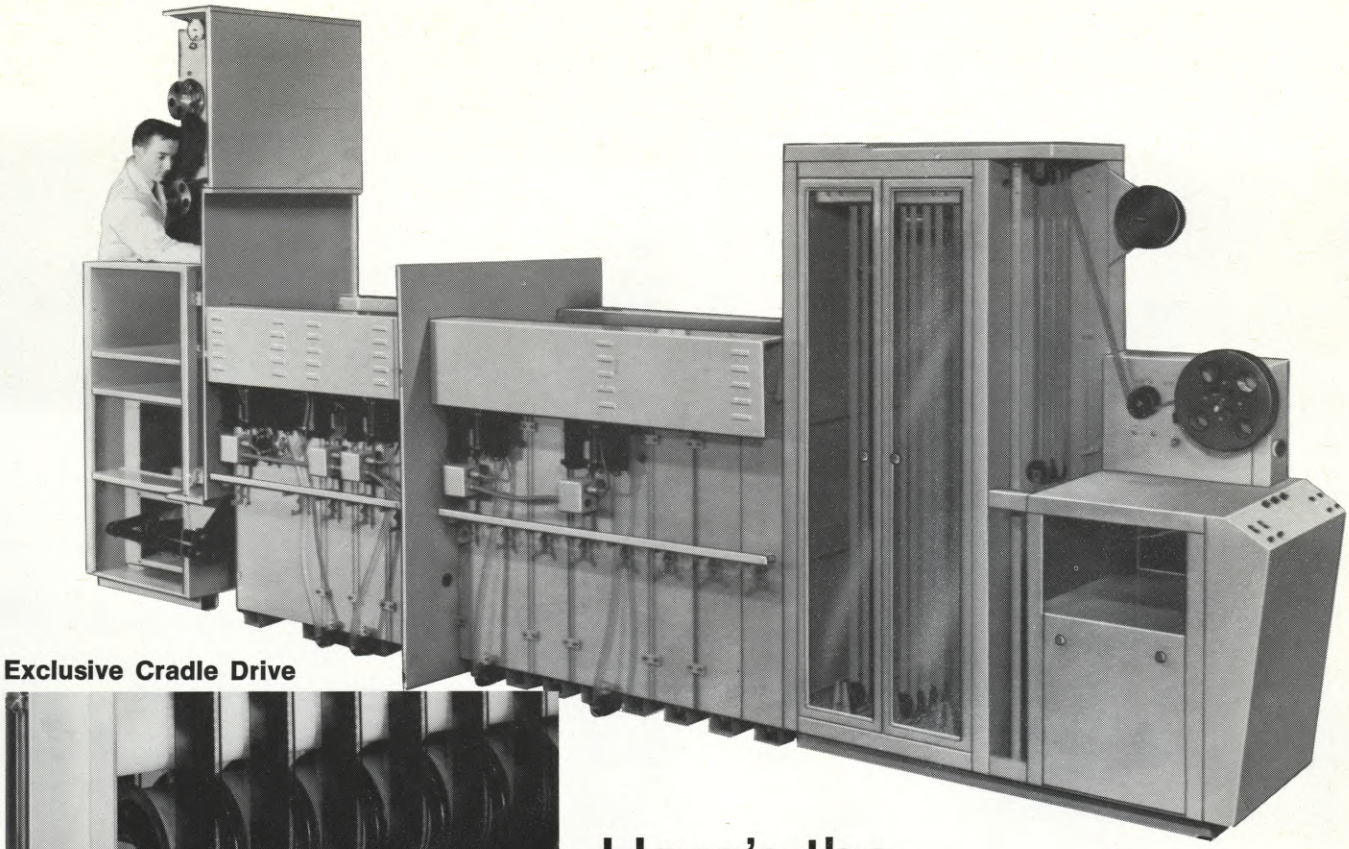
The portable recorder operates on its own self-contained flashlight batteries. No need for a "hot line" or inverter. The camera generated pulse assures absolute synchronization. There is no need for the tape to be perforated.

Q In making butt splices with tape, can the tape be easily and completely removed in the event the film is to be respliced at the same point?

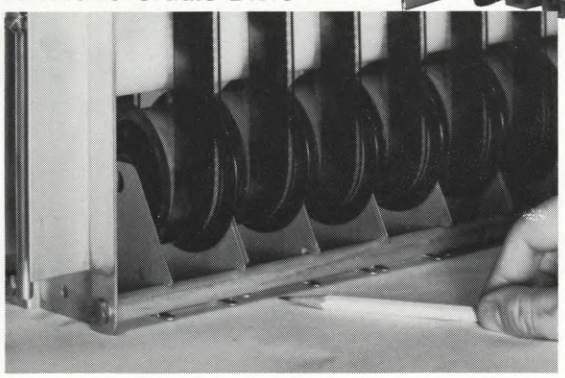
A In a word, yes.

Q What is meant by a T-stop on a lens?

A The T or transmission number of a lens represents the f-stop number of an open circular hole or of a perfect lens having 100 per cent axial transmission. It is thus the "true" f-stop since it is free from all reflection and absorption losses. T-stops are calibrated electronically. F-stops are calculated geometrically, purely on the basis of dividing the focal length of the lens by the diameter of the diaphragm opening. The f-stop is, therefore, based on the light that enters a lens and does not account for light losses within the lens. The T-stop is based on the light that actually emerges from the rear of the lens and forms the image. All T-stop markings will match, regardless of lens focal length, and deliver the same volume of light at the same T-number. This is particularly valuable in motion picture work because so many lenses of different focal lengths are employed, and it is desirable that they produce the same negative density so that they will match perfectly when intercut. It is highly recommended that all motion picture lenses be T-stopped. This is particularly important with zoom-type lenses whose highly complex optical designs require a great number of optical elements. A considerable light loss is thus encountered. Zoom lenses marked in f-stops will generally transmit considerably less light than a conventional lens of similar rating with fewer elements.



Exclusive Cradle Drive



Here's the feature story about...

Pako Ciné Processing Systems

Pako has a full line of Ciné Film Processing Systems for processing virtually all film types presently available. Although each system varies according to process and capacity, they all share many of the same innovative design and operational features. Each features Pako-originated modular construction for easy installation and service, plus adaptability for future changes. The following features are standard with all Pako Ciné Processing Systems:

Exclusive Cradle Drive — Pako's cradle drive babies your film with uniform, low tension regardless of film width. It virtually eliminates film breakage . . . reduces tension on you as well as the film. Each bottom spool "floats" in a separate metal cradle. When tension is low, the spool drops down and functions as an idler. When tension increases, the spool is drawn up to contact the drive roller. This equalizing action keeps tension within a safe 6-8 oz. range and no adjustments are necessary.

Remote Main Control Panel — contains precision flowmeters, turbine pumps for developer turbulation, a tempering system and temperature read-out meters.

Quality Construction — chemical tanks, racks and other areas in contact with solutions are rugged, corrosion resistant SST.

Plus these Pako Extras — Pako Distributors, located throughout the U.S. and around the world, are always ready to provide parts and factory-trained men fast. Pako offers training and refresher courses for Pako equipment users. Special financing is available to qualified Pako equipment buyers.

For more information, contact your Pako Distributor, or write to Pako Corporation.

PAKO®

PHOTO PROCESSING PRODUCTS

Pako Corporation, 6300 Olson Memorial Highway • Minneapolis, MN 55440

Hi! I'm Cindy. Come pick me up in Palm Springs.

Information Film Producers of America, Inc. is calling for entries in the 14th CINDY Film Competition. Films and video tapes from institutional, commercial and government film makers are eligible. All films will be judged by IFPA and other prominent film makers. Winners will receive gold or silver CINDYs on November 3 at the CINDY Awards Banquet – the highlight of the 14th Annual IFPA Conference. This year's conference will be held at the Riviera Hotel and Country Club in Palm Springs, California, from 31 October through 4 November, 1973.

See you there.

Cindy.

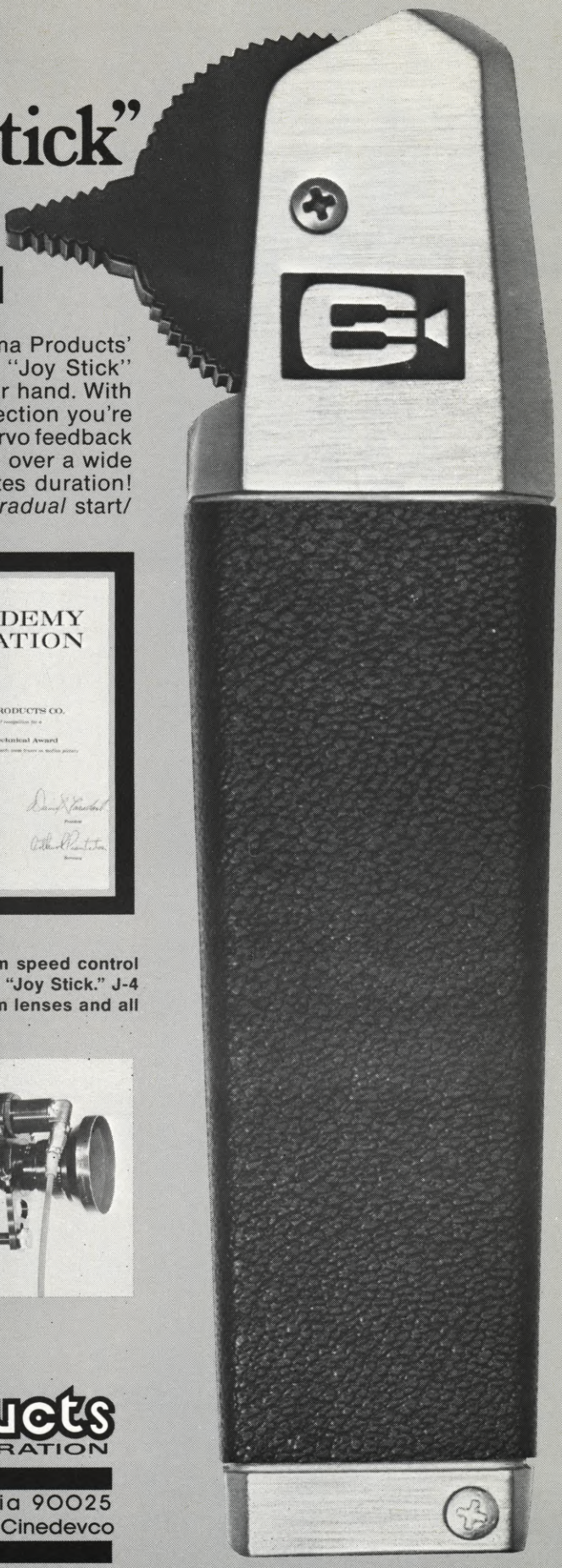
P.S. There's also a special entry category for films produced by cinema students.

To obtain entry blanks and information contact:

IFPA
P. O. Box 1470
Hollywood, CA 90028

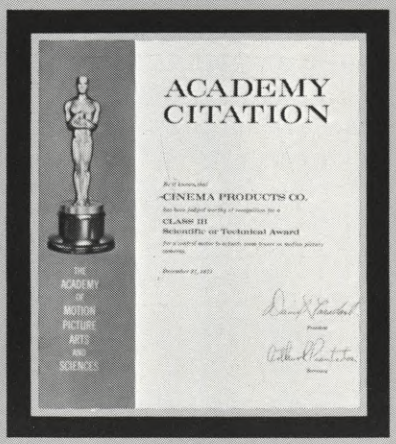
Or call area code 213—465-4898

J-4 "Joy Stick" ZOOM control

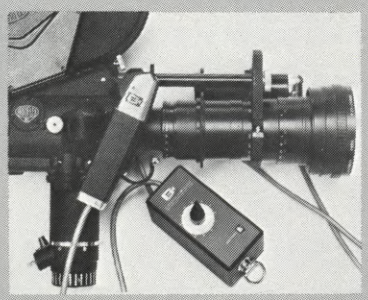


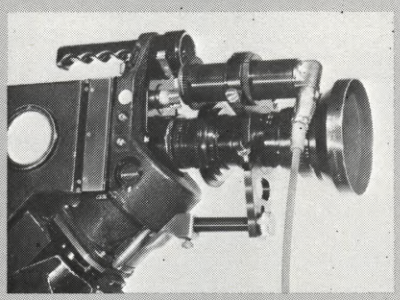
For the *ultimate* in precision zoom control—Cinema Products' Academy-award winning J-4! Its thumb-activated "Joy Stick" zoom control fits comfortably into the palm of your hand. With the J-4 "Joy Stick" you always know in which direction you're zooming, regardless of your hand position. A true servo feedback system provides constant speed through full zoom over a wide speed range, from 1½ seconds through 4½ minutes duration! The exclusive "Joy Stick" control also provides *gradual* start/stop from zero to the preset maximum desired speed. Exceptionally smooth and silent in operation, the J-4 zoom control is ideal for all studio and location filming.

Ask your professional dealer for a demonstration.



J-4 Zoom Control, complete with zoom motor, compact zoom speed control box (with built-in rechargeable nickel cadmium battery), and "Joy Stick." J-4 Zoom Control *brackets* and *gears* are available to fit all zoom lenses and all 35mm and 16mm cameras.





For further information, please write to:

cinema products CORPORATION

Technology In The Service Of Creativity

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

Great International Sale

During the past year we have purchased the inventories of several film companies and are therefore able to make this unique offer for sale of equipment in good condition.

MITCHELL B.N.C. EQUIPMENT
CAMERA complete with 4 mags 18, 25, 32, 40, 50, 75 & 100mm Cooke Series III & II lenses, Lens hood & matte box, Viewfinder, cams & reduction lens, Sync motor, etc. $15000.00
MITCHELL MULTI-DUTY MOTOR 96v DC/220v 3ph complete with AC & DC start boxes & cables ..... $ 687.50
MITCHELL 3 ph SYNC MOTOR .. $ 500.00
SAMCINE 3 ph ROTARY CONVERTER (24v in, 220v 3 ph out) ..... $ 500.00
MITCHELL 1000' MAGAZINE .... $ 225.00

MITCHELL S35 & R35 EQUIPMENT
MITCHELL S35 MKII CAMERA 3 x 400' magazines, 25, 35, 50 & 75mm B&L lenses, Lens hood/Matte box, 24v Variable speed motor $10000.00
MITCHELL R35 MKII CAMERA Equipment as above ..... $ 7500.00
MITCHELL S35 BLIMP ..... $ 2250.00
ZOOM EXTENSION for above .... $ 375.00
MITCHELL R35 BLIMP ..... $ 750.00
ZOOM EXTENSION for above .... $ 375.00
MITCHELL AUTO PARALLAX base, Viewfinder, cams reduction lens, lens hood/matte box ..... $ 1250.00
3ph SYNC MOTOR, 24 or 25 fps. $ 500.00
SAMCINE 3ph ROTARY CONVERTER (24v in, 220v, 3ph out) ..... $ 500.00
3 x MITCHELL 1,000' MAGAZINES 750.00
3 x MITCHELL 400' MAGAZINES $ 500.00
3 x 400' INVERTED MAGAZINES, Hi-hat & Pistol Grip ..... $ 625.00

NEWALL N.C. EQUIPMENT
N.C. CAMERA, 4 x 1000' mags, 25, 32, 40, 50, 75 & 100mm Cooke Series II lenses, Viewfinder, cams, reduction lens, Sync motor, etc. ..... $ 3750.00
NEWALL 1000' MAGAZINES ea .. $ 125.00
NEWALL 400' MAGAZINES '.. $ 100.00

AURICON CAMERA EQUIPMENT
PRO 1200 CAMERA, 4 x 600' mags, 12:120mm Angenieux reflex zoom ..... $ 2375.00
Door with finder for above ..... $ 462.50
PRO 600 CAMERA, 3 x 400' mags, 12:120mm Angenieux reflex zoom ..... $ 2250.00
1200' mag & adaptor for above $ 250.00
CINEVOICE CAMERA, 3 x 400' mags, 12:120mm Angenieux reflex zoom ..... $ 2250.00
FILMAGNETIC SOUND SYSTEM Complete with microphones etc $ 750.00

All mains operated equipment is 220v 50Hz unless otherwise stated

35mm ARRIFLEX EQUIPMENT
IIC CAMERA, 3 x 400' rev Mags 25, 32, 40, 50, 75mm Cooke Series III & II lenses, Bellows type matte box, 16v variable speed rev motor, 2 x batts, charger, cables etc. ..... $ 5000.00
IIB CAMERA, 3 x 400' rev mags, 25, 40 & 75mm Cooke Series III & II lenses, Bellows type matte box, 16v variable speed rev motor 2 x batts, charger, cables etc. ..... $ 2375.00
IIA CAMERA, 3 x 400' mags, 28mm Schneider, 40 & 75mm Cooke Series II lenses, Sunshade/matte box, 16v variable speed motor, Batt, charger, cables etc. ..... $ 1750.00
IIC TECHNISCOPE CAMERA Complete as IIC above ..... $ 5750.00
MODEL 300 BLIMP, matte box, Sync motor, 1,000' mag drive (for IIA, B or C cameras) ..... $ 1250.00
2 x 1,000' mags for above ..... $ 187.50
MODEL 120 BLIMP, matte box, Sync motor, (24 or 25 fps) ..... $ 987.50
For IIA, B or C cameras
SYNC MOTOR 220v 3 ph (24 or 25 fps) Phase splitter etc. ..... $ 275.00
ARRIFLEX MAGAZINES
400' reversible ..... $ 212.50
400' non-reversible ..... $ 137.50
200' ..... $ 125.00
CONSTANT SPEED MOTOR (24 or 25 fps) ..... $ 212.50
RIGHT ANGLE VIEWFINDER PRISM ..... $ 312.50

16mm ARRIFLEX EQUIPMENT
16St BLIMP, matte box, Sync motor, control box, etc. ..... $ 500.00
16St SYNC MOTOR (24 or 25 fps) Control box, cables etc. ..... $ 250.00
16St CONSTANT SPEED MOTOR $ 175.00
RIGHT-ANGLE VIEWFINDER PRISM ..... $ 312.50
16BL 1,200' MAGAZINE ..... $ 312.50
16BL 400' MAGAZINE ..... $ 162.50
16BL 200' MAGAZINE ..... $ 125.00
16BL SYNC MOTOR complete .... $ 200.00
16BL 12v DC MOTOR UNIT ..... $ 250.00
10mm SCHNEIDER LENS with 16BL Blimp housing ..... $ 687.50
10:100mm ZEISS ZOOM lens with 16BL Blimp housing ..... $ 1150.00

ECLAIR 16 NPR EQUIPMENT
Perfectone 12v DC 100Hz motor $ 250.00
Perfectone 220v Sync motor ..... $ 250.00

All prices F.O.B. London.

LENSES
24:240mm Angenieux reflex zoom with side finder. Support, matte box, etc (BNC or NC) ..... $ 2500.00
25:250mm Angenieux zoom (Arri, Eclair S35/R35) ..... $ 1875.00
12:120mm Angenieux reflex zoom with side finder (PRO 1200, 600, Cinevoice) ..... $ 1000.00
12:240mm Angenieux reflex zoom with side finder (PRO 1200, 600) ..... $ 2500.00
9.5:95mm Angenieux zoom (Arri & C mount adaptor) ..... $ 1875.00
14.5mm Angenieux (BNC) ..... $ 250.00
18.5mm Angenieux (Arri) ..... $ 75.00
18mm Cooke Series II (Arri, NC) .$ 100.00
20mm Bausch & Lomb (S35/R35) .$ 750.00
25mm Cooke Series II (Arri, NC) .$ 100.00
35mm Cannon f1.5 (BNC, NC) .... $ 125.00
40mm Makro Kilar (Arri) ..... $ 125.00
50mm Leitz f1.2 (BNC) ..... $ 125.00
90mm Makro Kilar (Arri) ..... $ 150.00
100mm Cooke Deep Field (Arri, BNC, NC) ..... $ 225.00
152mm Bausch & Lomb (S35/R35). $ 250.00
600mm Kilfitt (Arri, Eclair or S35/R35) ..... $ 625.00

N.B. Only one mount supplied with each lens. Please state which is required. Extra mounts charged extra.

GEARED HEADS
Moy 16" ..... $ 1750.00
FRICTION HEADS
Heavy duty, Mitchell type ..... $ 175.00
Medium duty " " ..... $ 175.00
Arriflex 35mm, bowl fitting ..... $ 125.00
Arriflex 16mm, clamp fitting ..... $ 100.00
GYRO HEADS
Satchler & Wolf, bowl fitting ..... $ 500.00
Arriflex, " " ..... $ 500.00
Cartoni, Mitchell fitting ..... $ 275.00
TRIPODS
Arri tall, bowl fitting ..... $ 75.00
Arri short, " " ..... $ 50.00
Arri tall, clamp fitting ..... $ 75.00
Arri short, " " ..... $ 50.00
Tall, wooden, Mitchell fitting ..... $ 100.00
Short " " " ..... $ 75.00
Tall, metal, " " ..... $ 100.00
Short " " " ..... $ 112.50
DOLLYS
Oxberry hydraulic ..... $ 625.00
Colortran ..... $ 2475.00
Location ..... $ 275.00
Elemack Corridor (bogey wheels) .$ 225.00
Crane arm for Elemack Spider .$ 1000.00
MOVIOLA SERIES 20 EDITING MACHINES
35mm, 3 way (1 pic, 2 sound) take-up arms, large screen ..... $ 3750.00
35mm, pic & sound, take-up arms $ 2500.00
35mm pic & sound no take-up arms $ 2250.00
Large screen for above machines $ 125.00
SYNCHRONISERS
16mm, 4way, edge or centre tracks 250.00
16/35mm, 6 way, " " " ..... $ 375.00
35mm, 4 way, edge track ..... $ 250.00
Amplifiers for above ..... $ 125.00

SAMCINE SALES LIMITED

One of the Samuelson family of companies.

303–315 CRICKLEWOOD BROADWAY, LONDON N.W.2 6PQ. Tel: (01) 452 8090. Telex: 21430 Cables: Samcine, London.

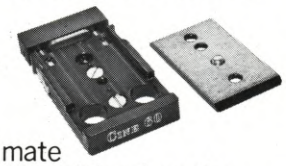
WE HELP YOU LOOK GOOD FOR LESS.

When it comes to film, a little ingenuity can go a long way. For us, it's created a reputation of achieving the difficult with less weight, in less space, and often at far less cost. Some of the reasons why are illustrated below.

How low (or high) can you go? All you need is a smooth surface, and our Vacu-Platform does the rest. This rugged suction-actuated device is available with flat plate or mating fitting for standard tripod heads.

Or use the Cine 60 Vacu-Car-Mount. Hooks over window, roof or luggage rack and attaches to the side of the vehicle with suction. Gives you a safe, stable camera platform, and a multitude of interesting possibilities.

How much is 30 seconds worth? Could be thousands of dollars.



You know what we mean if you've ever watched a good shot go by while struggling to mate camera and tripod. Our Snaplok solves the problem instantly, with pushbutton speed and rugged precision. Click—camera and tripod are together; click, they're apart!

Power and Mobility For the best of both, it's our famous Cine 60 Power Belt. From 8 up to 30 volts of the industry's longest-lasting power nicely balanced around your waist. With rechargeable nicads, sealed design and automatic overload protection. Built-in standard 110 or switchable 110/220 V charger and plug-in coiled power cable. Available in models to fit all professional cameras and "sun guns."

Painless Motor Zoom If you own one of the fine Angenieux lenses, we can give you smoother, more consistent zooming. Our compact, nicad-rechargeable units mate directly with popular 9.5-57, 9.5-95, 12-120, 12-240 and 25-250mm sizes. Handy switch and transistor-regulated zoom control provide variable-speed zooming at the touch of a button. Models available for Zeiss and Canon lenses too!

Help yourself look good for free For more information about these or other exclusive professional accessories, call or write us. We'll also tell you about our rental and repair services—and throw in some free advice, if you need it. After all, the better we make you look, the better we'll look.

CINE 60 I
INCORPORATED

Film Center Building, 630 Ninth Avenue, New York 10036 Telephone (212) 586-8782

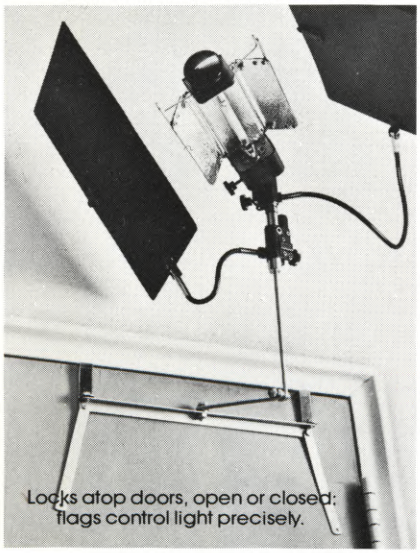
Now, your location lighting problems are no bigger than this.

Tota-Light.* More than just a new light, it's a new lighting concept. Compact 1000, 750 and 500-watt quartz lighting with an integral system of lightweight, modular mounting and light control components. Providing almost limitless location flexibility.

With Tota-Light, a room is more than just an area to be lit: it becomes part of the lighting system.

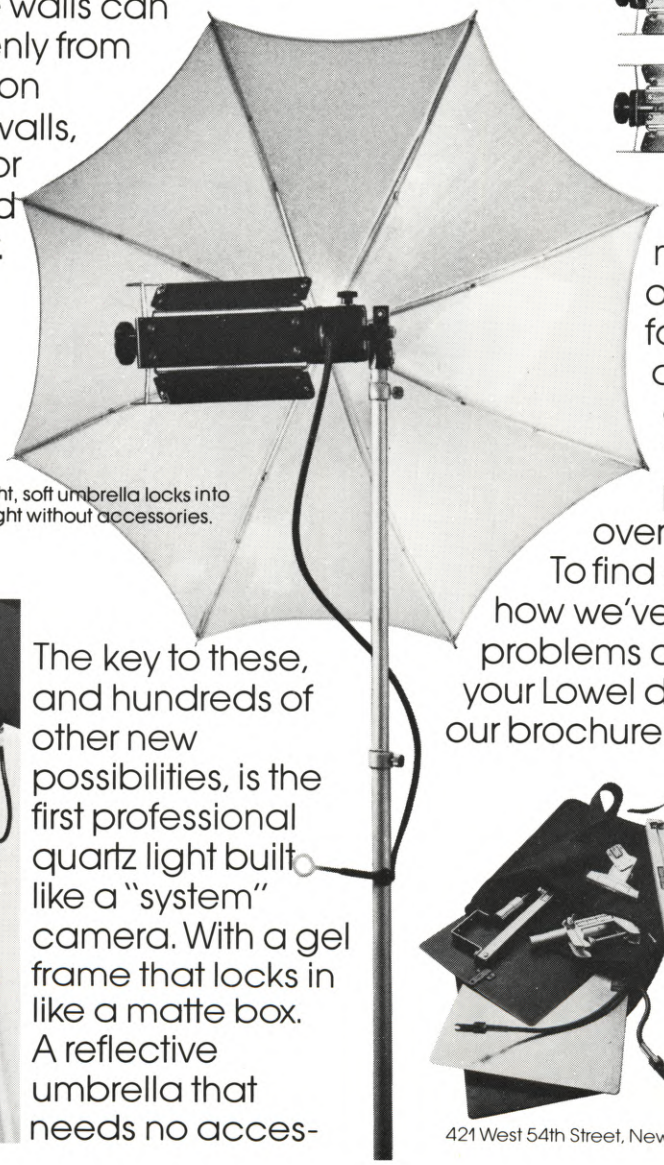
A system where three walls can be lit smoothly and evenly from a single light mounted on the fourth wall. Or four walls, ceiling and floor can be covered from a corner.

Snap-together flags and reflectors snap onto flexible arms.

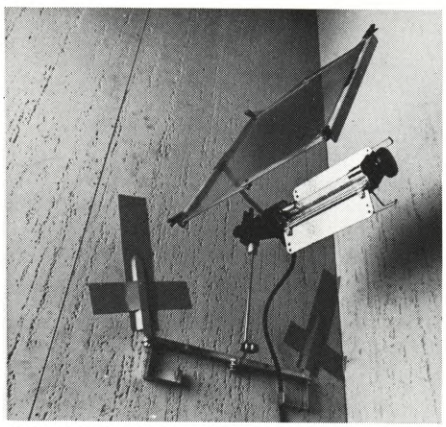


Locks atop doors, open or closed; flags control light precisely.

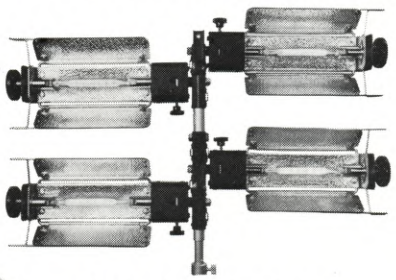
The key to these, and hundreds of other new possibilities, is the first professional quartz light built like a "system" camera. With a gel frame that locks in like a matte box. A reflective umbrella that needs no accessories. And a family of snap-together flags held by flexible arms. Using these and other components, Tota-Light can be stacked, diffused, converted in seconds to a softlight,



Bright, soft umbrella locks into light without accessories.



Tota-Light tapes to walls and windows; frame holds precut conversion and diffusion gels.



Stacks on stand or clamp.

mounted atop open or closed doors, fastened to virtually any surface...and closed compactly to fit a kit or canvas pouch that loops over the belt.

To find out more about how we've cut location lighting problems down to size, see your Lowel dealer or send for our brochure.

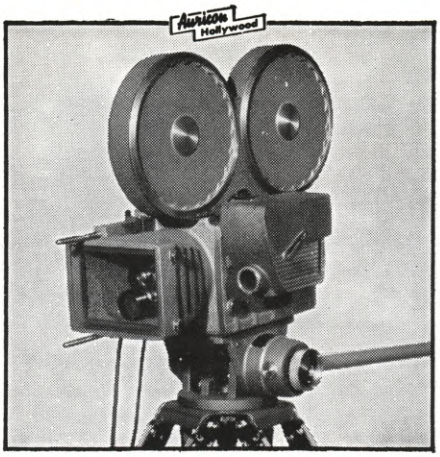
*TM Pat. Pend.

lowel

421 West 54th Street, New York 10019 (212) 245-6744

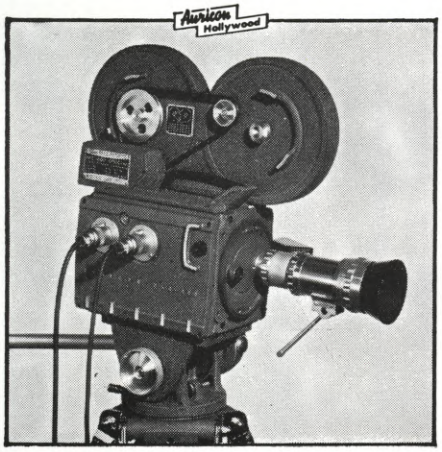
AURICON 16mm Sound-On-Film for Professional Results!

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

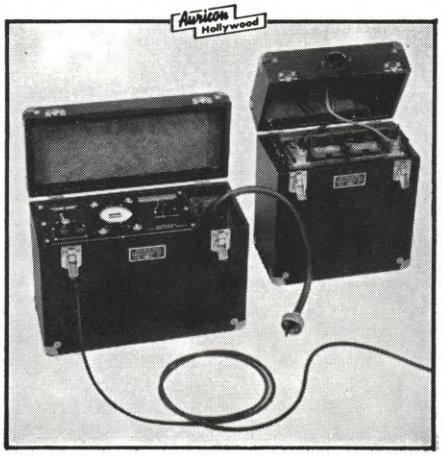


"AURICON PRO-600" 16mm Optical Sound-On-Film Camera.
★ 600 ft. film capacity for 16½ minutes of recording. ★ $1820.00 (and up) with 30 day money-back guarantee.

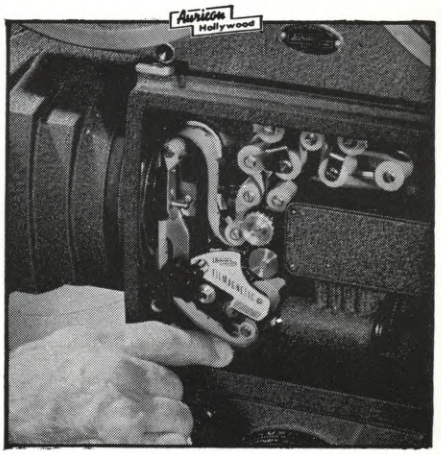
"SUPER 1200" 16 mm Optical Sound-On-Film Camera.
★ 1200 ft. film capacity for 33 minutes of recording. ★ $6425.00 (and up) complete for "High-Fidelity" Talking Pictures.



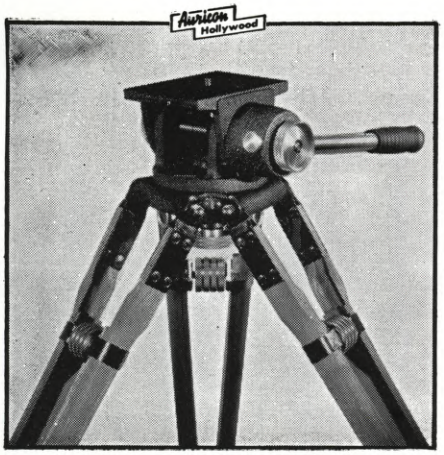
"PRO-600 SPECIAL" 16mm Light-Weight Camera.
★ 400 ft. film capacity for 11 minutes of recording. ★ $1620.00 (and up).



PORTABLE POWER SUPPLY UNIT — Model PS-21... Silent in operation, furnishes 115-Volt AC power to drive "Single System" or "Double System" Auricon Equipment from 12 Volt Storage Battery, for remote "location" filming. ★ $337.00



FILMAGNETIC — Finger points to Magnetic pre-stripe on unexposed film for recording lip-synchronized magnetic sound with your picture. Can be used with all Auricon Cameras. ★ $1325.00 (and up).



TRIPOD — Models FT-10 and FT-10S12... Pan-Tilt Head Professional Tripod for velvet-smooth action. Perfectly counter-balanced to prevent Camera "dumping." ★ $406.25 (and up).

Strictly for Profit
CHOOSE AURICON

If it's profit you're after in the production of 16 mm Sound-On Film Talking Pictures, Auricon Cameras provide ideal working tools for shooting profitable Television Newsreels, film commercials, inserts, and local candid-camera programming. Now you can get Lip-Synchronized Optical or Magnetic Sound WITH your picture using Auricon 16 mm Sound-On-Film Cameras. Precision designed and built to "take it."

Strictly for Profit—Choose Auricon!

BACH AURICON, Inc.
6902 Romaine Street, Hollywood 38, Calif.
HOLLYWOOD 2-0931

BACH Auricon ®

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

★ Auricon Equipment is sold with a 30-day Money-Back Guarantee. You must be satisfied.

MANUFACTURERS OF PROFESSIONAL 16MM CAMERAS SINCE 1931

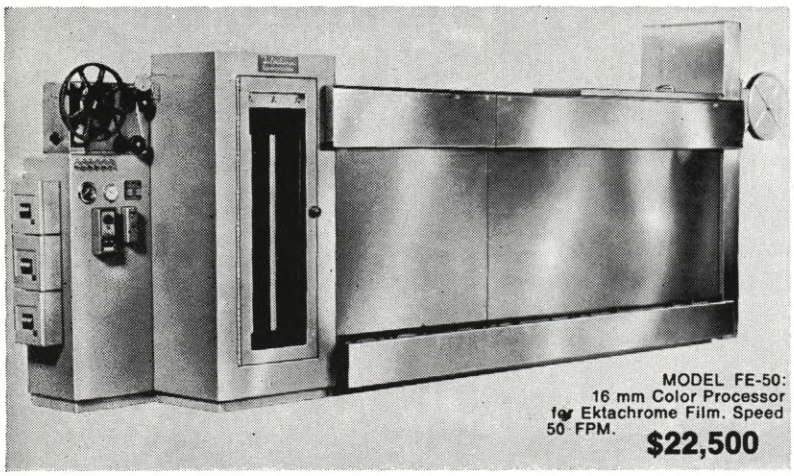
The Money-Makers

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

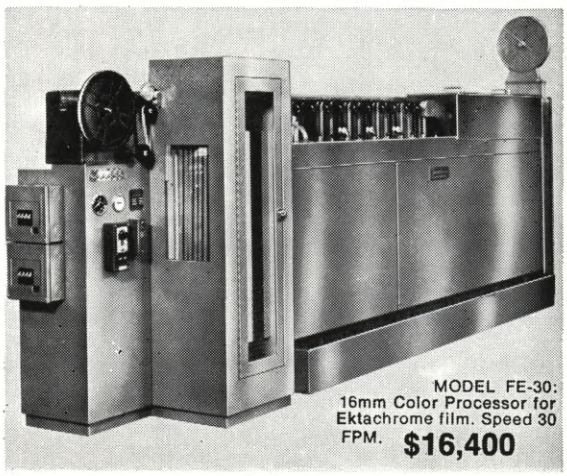
The Filmline Models FE-30 and FE-50 are fast, foolproof, troublefree and long-lasting. They turn out consistently superior work. The design is backed by Filmline's reputation as the world's leading manufacturer of film processors for the motion picture laboratory industry.

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

Check the exclusive Filmline features below:



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



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

- **"FILMLINE OVERDRIVE FILM TRANSPORT SYSTEM"** This marvel of engineering completely eliminates film breakage, pulled perforations, scratches and operator error. The film can be deliberately stalled in the machine without film breakage or significant change of film footage in solutions. The heart of any film processor is the drive system. No other film drive system such as sprocket drive, bottom drive or simple clutch drives with floating lower assemblies can give you the performance capability of the unique Filmline Overdrive Film Transport System.
- **"TORQUE MOTOR TAKE-UP"** gives you constant film take-up and does not impose any stress or strain on the film itself. Completely independent of the film transport system. This FILMLINE feature is usually found in professional commercial processors but is incorporated on the FE-30 and FE-50 models as standard equipment. Don't settle for less!
- **"TEMP-GUARD"** positive temperature control system. Completely transistorized circuitry insures temperature control to well within processing tolerances. Temp-Guard controls temperatures accurately and without the problems of other systems of lesser sophistication.
- **"TURBO-FLOW"** impingement dryer. Shortens dry-to-dry time, improves film results, and carefully controls humidity content of your valuable (and sometimes rare) originals. Immediate projection capability is assured because the film dries flat without the usual curl associated with other film processors.

"ZERO DOWN TIME" The reputation of any film processor is only as good as its reliability. The combination of the exclusive and special added Filmline features guarantees trouble-free operation with absolute minimum down-time and without continual operator adjustments. Recapture your original investment in 2 years on maintenance savings alone. Filmline's "Push the button and walk-away processing" allows inexperienced operators to turn out highest quality film.

- **"MATERIALS, CONSTRUCTION AND DESIGN"** All Filmline machines are constructed entirely of metal and tanks are type 316 stainless steel, heliarc welded to government specifications. The finest components available are used and rigid quality control standards are maintained.

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

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

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

Partial listing of Filmline Color Installations: — NBC- New York, NBC- Washington, NBC- Cleveland, NBC- Chicago, CBS & ABC Networks, Eastman Kodak, Rochester.

Laboratories: De Luxe Labs, General Film Labs (Hollywood), Pathe-Labs, Precision Labs, Mecca Labs, Color Service Co., Capital Film Labs, Byron Film Labs, MGM, Movie Lab, Lab-TV, Technical Film Labs, Telecolor Film Labs, Guffanti Film Labs, A-One Labs, All-service Labs, NASA Cape Kennedy, Ford Motion Picture Labs.

TV Stations: WAPI-TV, WHP-TV, WMAL-TV, WXYZ-TV, WWL-TV, WMAR-TV, WJXT-TV, KETV-TV, WTOP-TV, WEAT-TV, WCKT-TV, WAVE-TV, WAVY-TV, KTVI-TV, WCPO-TV, KTAR-TV, WSYR-TV.

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

Filmline CORPORATION
MILFORD, CONNECTICUT

AA-73

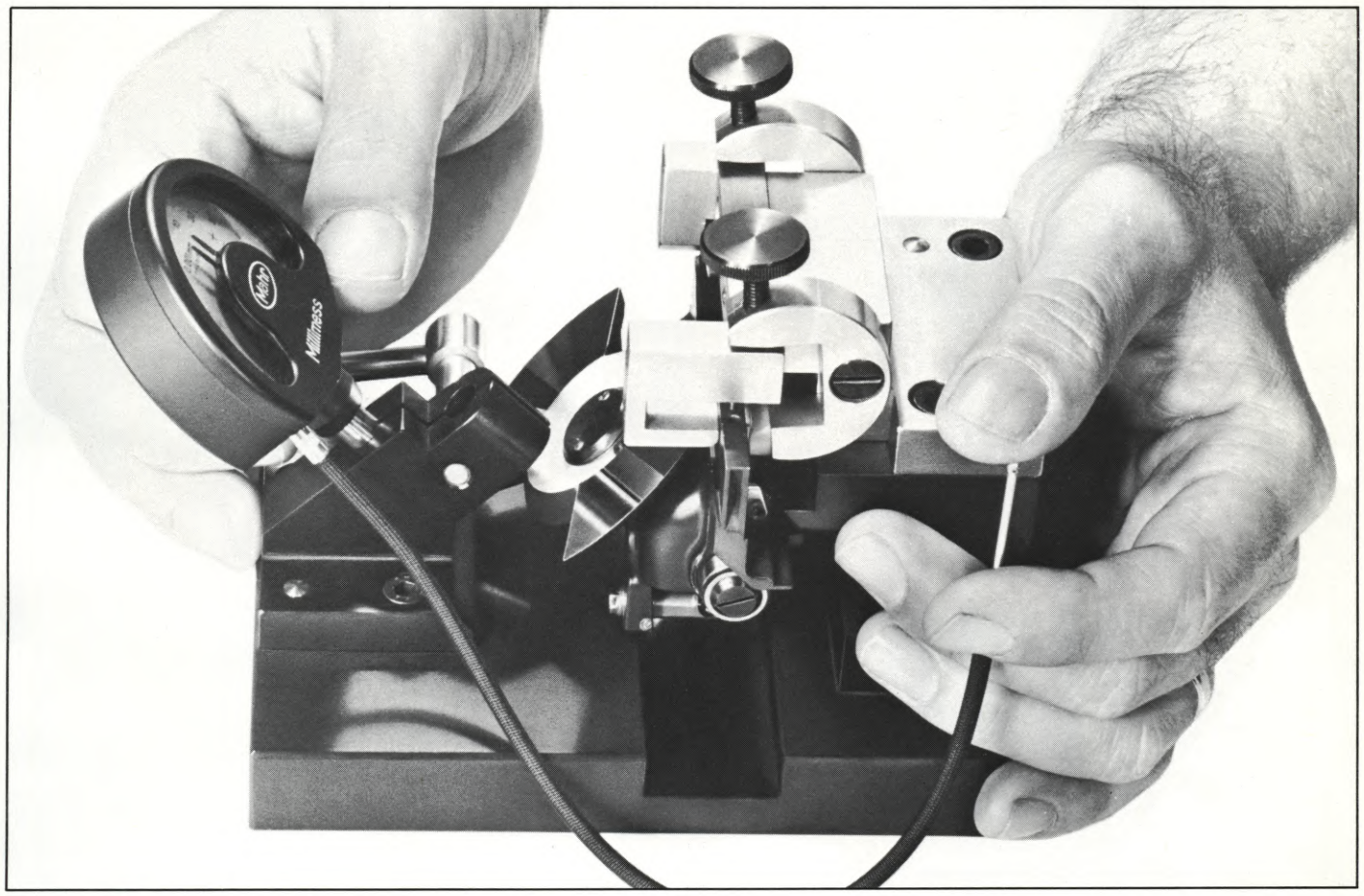
Send for Literature.

Time & Lease Plans Available.

"When you buy quality Filmline Costs Less"

(203) TR 8-2433

Factory service means New York or Los Angeles. And it means waiting. Duncan service is here and now.



First class facilities in Chicago, Dallas, Detroit.

Factory service times vary. With certain cameras, it's around two weeks. With others, six weeks or more.

If you're in N.Y.C. or L.A., that can sometimes speed things up. But if you're in the Midwest or the Southwest, your best bet is Duncan. The reason: *our rental business.*

Says film maker Walt Topel: "Duncan is the only place I really trust for rental cameras. That's my own experience, and what I hear from other people."

That's a hard-earned reputation. To keep our rental cameras in perfect shape *all the time,* we have to maintain them ourselves. So we run the most sophisticated service operation in Chicago. And Dallas; and in Detroit.

ACCURACY

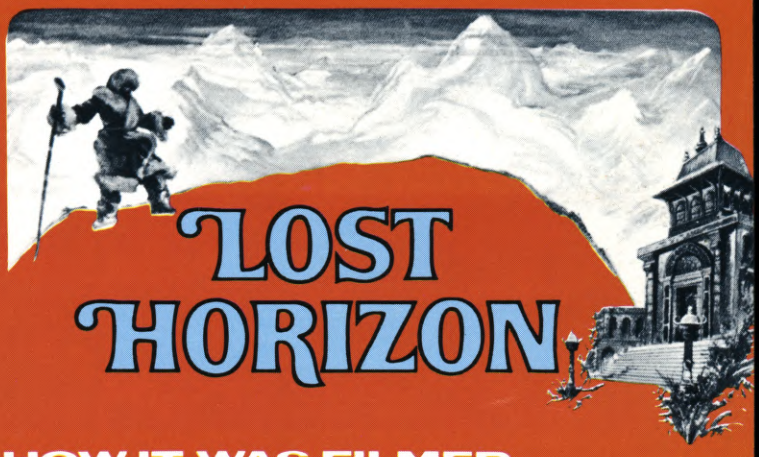
For example: the $540.00 device you see above has *one function only.* It checks out mirror flatness in the 16mm Arriflex, using a depth gauge accurate to .00004 inch. We have three of them.

Dick Reinauer of Don Meier Productions says: "We use Duncan's service shop frequently. They're close by, they do damn good work, and they're fast."

DUNCAN
VICTOR DUNCAN INC.

676 ST. CLAIR, CHICAGO (312) 321-9406
2659 FONDREN, DALLAS (214) 369-1165
11043 GRATIOT, DETROIT (313) 371-4920

SERVICE, SALES AND RENTALS: CHICAGO, DALLAS AND DETROIT



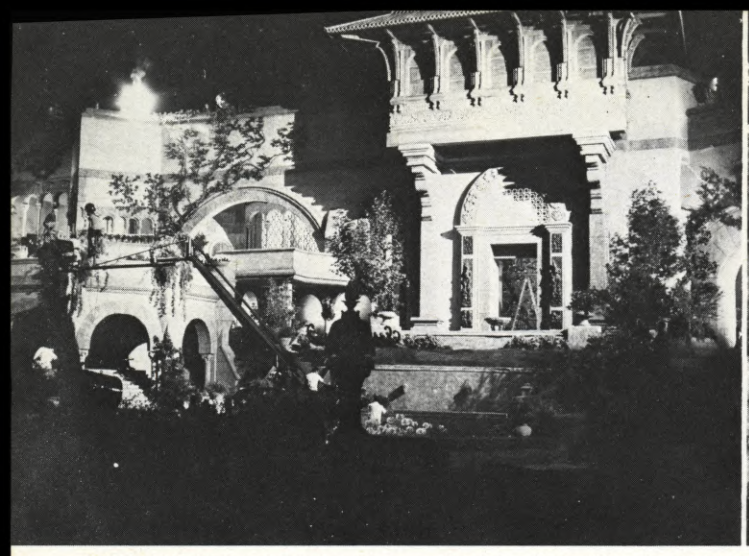
HOW IT WAS FILMED

Return to "old style" glamour photography is technical highlight of musicalized version of famed film classic

"Look at the world today. Is there anything more pitiful? What madness there is. What blindness. What unintelligent leadership. A furiously racing mass of bewildered humanity, strengthening, not in wisdom but in vulgar passions, crashing headlong into each other, motivated by greed and propelled into brutality. The time must come when evil will destroy itself.

"When the day comes that the world begins to look for a new life, it is our hope they may find it here in Shangri-La. Here we shall be with our way of life based on one simple rule—love. And it is our hope that Shangri-La's brotherly love will then spread throughout the world. And when the strong have devoured each other, then at last the meek shall inherit the earth."

No words more perfectly describe the global plight of the '70's—and yet they were written almost 40 years ago by the late James Hilton to express the philosophy of the High Lama of Shangri-La in his classic



(LEFT) Night-for-night shooting on the huge Shangri-La lamasery set, which occupied four acres of the Burbank Studios backlot. (RIGHT) A procession of torch-carrying natives a quarter of a mile long winds its way through the grounds of the lamasery during filming of the Grand Lama's funeral sequence. Thirty-six "Titan" arcs were used to light the vast area.

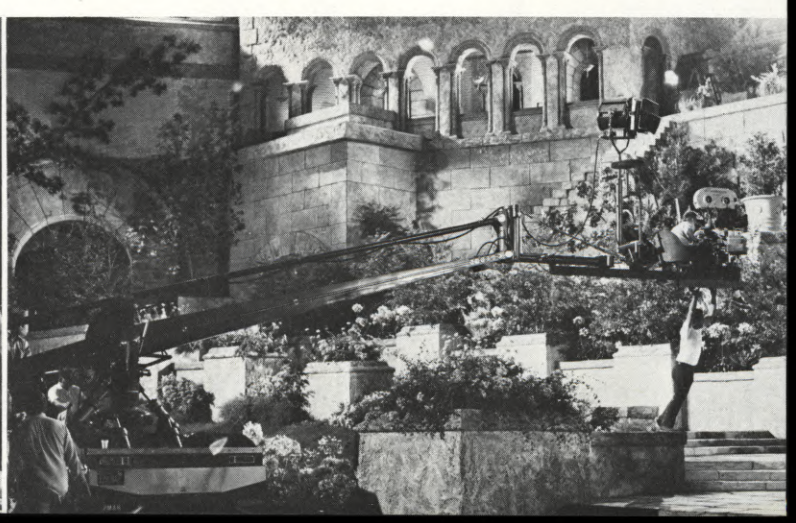
novel, "LOST HORIZON".

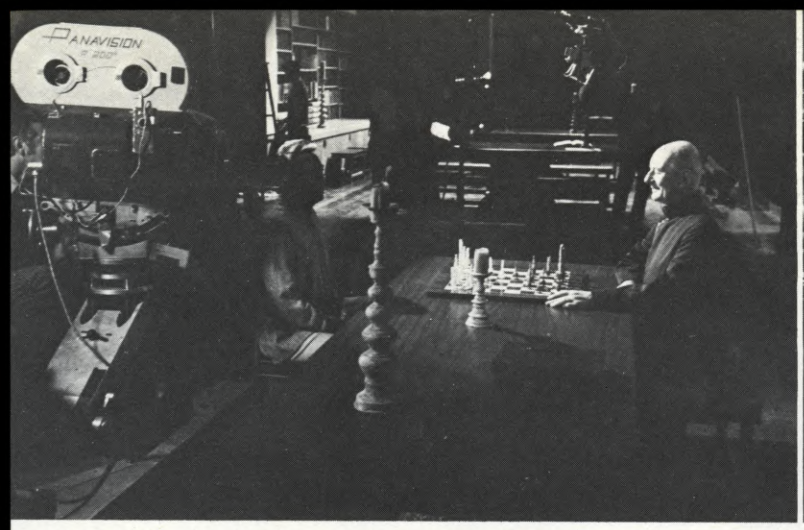
Because the drama and the sentiment of "LOST HORIZON" are so acutely keyed to today, producer Ross Hunter has brought it to the screen as a modernized musical drama, Hunter's initial production for Columbia Pictures.

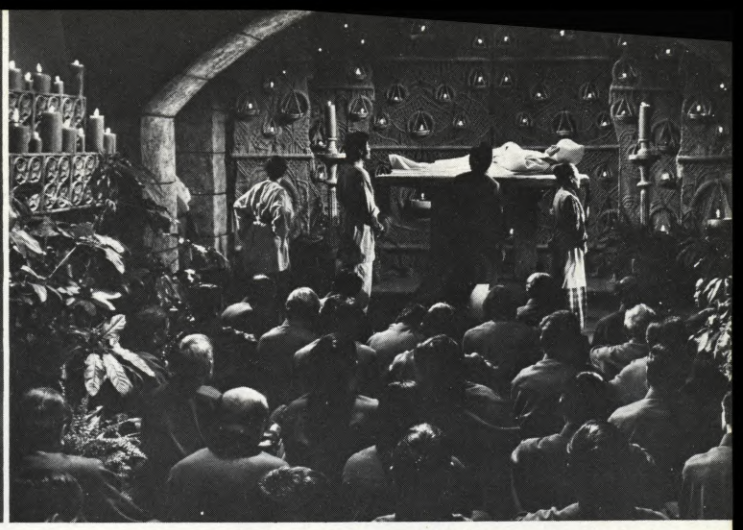
The original black and white straight dramatic version of "LOST HORIZON", directed in 1937 by Frank Capra and photographed by Joseph Walker, ASC, was extremely well received by audiences and has, ever since then, been regarded as a classic by film buffs and cinema students. The new "LOST HORIZON", up-dated, set to music and shot in color, has been directed by Charles Jarrott with Jacque Mapes as associate producer and with music by Burt Bacharach and Hal David. An all-star cast of international screen personalities includes Peter Finch, Liv Ullmann, Sally Kellerman, George Kennedy, Michael York, Olivia Hussey, Bobby Van, James Shigeta, Charles Boyer as the High Lama and John Gielgud as Chang.

As modernized by Larry Kramer from the James Hilton novel, "LOST

(ABOVE LEFT) While the crew moves Panavision cameras into Bronson Canyon for artificial snow scenes, Cinematographer Surtees (black hat) surveys the scene for camera set-ups. (BELOW LEFT) At the 20th Century-Fox ranch in Malibu Canyon, preparations are made to shoot a musical number of Bobby Van with the children. (RIGHT) Camera on extension arm of Chapman Titan boom swings upward during night filming on Shangri-La set.







(LEFT) Low-key lighting provides a mood effect, as camera is framed on John Gielgud, playing the role of Chang. (RIGHT) Inside the candlelit chapel of the lamasery, the inhabitants of Shangri-La gather to pay tribute to the dead Grand Lama. Lighting on the ambitious production ranged the entire gamut from sparkling high-key to somber low-key for the more dramatic sequences.

HORIZON" depicts the dramatic adventures of a noted British diplomat who attempts to evacuate a small group of people from a revolution in Southern Asia and unwittingly leads them into a kidnapping, a plane crash and a trek through stormswept Himalayan mountains to the mystical, magical Valley of the Blue Moon and the lamasery of Shangri-La, where the art, the culture and the accumulated knowledge of the world are treasured against the day when an all-out war will destroy civilization. The clash of the severe ethnology of the outer world with the serene life style of Shangri-La is a key factor in the drama that unfolds.

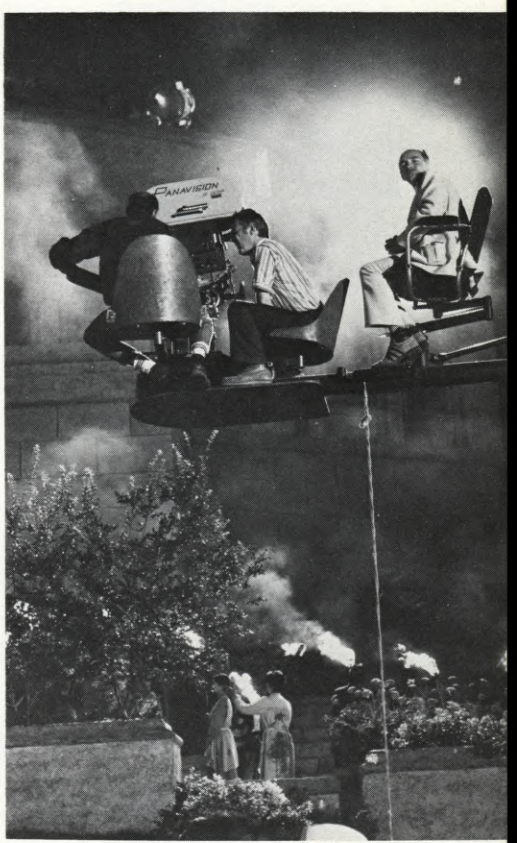
"LOST HORIZON" is not essentially a musical; it is a drama with music. Except for a title number, the Bacharach-David songs are not introduced until Shangri-La is revealed.

"What 'LOST HORIZON' says is more appropriate today than when Hilton wrote it almost 40 years ago," Ross Hunter points out. "Today, people need a Shangri-La of their own more than ever before. They need some escape, if even for a very short period, from the tumult of life around them. The frustrations of an elusive world peace, the breakdown of law and order, the alarming lack of fellowship and plain old economic woes have combined to create more stress than the public cares to accept. In their own individual ways, they simply have to get away from it all occasionally.

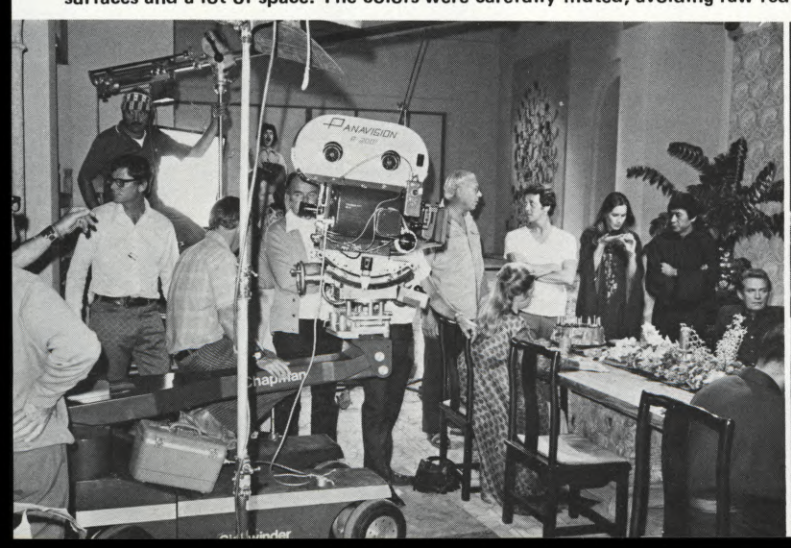
"I always try to give the public entertainment that nobody else is offering them at the time," Hunter explains. "It's my hope that escapist musical drama is what they'll be looking for next year. I think audiences will be seeking Shangri-La and they'll find it up on the screen in 'LOST HORIZON'."

In keeping with Hunter's oft-spoken sentiments that the best place to make a movie is in Hollywood, only a minimum location schedule was planned for "LOST HORIZON". Snow sequences were filmed against the icy backgrounds of the Cascade mountains of Washington and at Mt. Hood, Oregon. The evacuation of personnel from a Southeast Asian airfield under guerrilla attack was photographed near Tucson, Arizona

Continued on Page 450



(ABOVE RIGHT) Camera booms up over the torch-bearers during shooting of funeral procession. (BELOW LEFT) Camera is positioned for dinner sequence in one of the lush lamasery interiors designed by Preston Ames. (RIGHT) The interior sets were tastefully luxurious, with heavily textured surfaces and a lot of space. The colors were carefully muted, avoiding raw red, blue and orange.



ON LOCATION WITH LOST HORIZON

Film crews brave rigors of snow-covered peaks to shoot authentic and spectacular scenes of the trek to Shangri-La

By BILL KEIL

The Ross Hunter-Columbia Pictures musical production of "LOST HORIZON" won't be short of the real thing.

The second unit had more than its share of mountain realism working in the North Cascades mountains of Washington in early April of last year and even the first unit saw mountain action during four days of pre-production filming on Mt. Hood's upper slopes late the same month.

Coverage of the location fit in well with my dual interests of filming and mountains. The last major film work high on Mt. Hood, which I also covered, was Universal-International's "BEND OF THE RIVER" directed by Anthony Mann in 1951. The action western starred Jimmy Stewart, Arthur Kennedy, Rock Hudson, and Julie Adams. I served as an extra for several days to get the "inside feel".

That was in the day of Technicolor three-strip cameras. The U-I crew required a Caterpillar tractor to move the big lights, cameras and sound equipment up to the 7,000-foot-level for the pass-crossing scenes in the late-summer August snows. The lab tried, not too successfully, to filter out the summer dirt from the snow. A jet trail worked into the final cut in one scene and even

Trudging wearily through the snow after exodus from the Valley of the Blue Moon, Peter Finch, Michael York and Olivia Hussey do not have to simulate fatigue. Snow sequence location shooting was a rugged experience for the First Unit (at Mt. Hood, Oregon) and the Second Unit (in the Washington Cascades) and the crews were sometimes forced to bed down in mountainside snow caves. For days at a time, severe storms kept helicopters from landing to bring them food.

(LEFT) A single file of sherpas, leading survivors of plane crash to Shangri-La, wends its way over snow-laden slopes. (CENTER) The column winds its way along a precarious bridge hung from the side of a steep snow cliff. (LEFT) The actors in the picture wore heavy Tibetan sherpa gear of authentic design, and the crew had to dress just as warmly to withstand the numbing cold of the locations. Professional mountaineers were used in long shots by the Second Unit for the more hazardous climbing.

(LEFT) Actors slip and slither along a cliffside, as artificial snow is driven into their faces by snow machines. This tie-in shot was filmed in Bronson Canyon, actually only a few blocks from Hollywood Boulevard. (RIGHT) The party starts through the tunnel which leads from the stormy winter outside to the eternal summer of Shangri-La. The "cold" end of this tunnel, actually a cave in Bronson Canyon, was festooned with giant icicles to enhance the illusion.

an out-of-focus ski lift showed in another Stewart closeup.

But Columbia Pictures' "LOST HORIZON" was something else. The story was one of my favorites back in those simpler days of the 1930's when the original production was released. I well remember the High Lama's torch-lighted funeral procession production scene.

At Mt. Hood this time, it wasn't August snow. It was real blizzards with 60-foot snowdrifts and subfreezing temperatures. It was realism at its best.

The biggest contrast with the "BEND OF THE RIVER" production was in the equipment. The "LOST HORIZON" company had portable lightweight equipment. Using Arriflex 35 Panavision conversions, the operator could pick up the whole outfit, tripod and all, for short setup moves.

Management made a great choice for photographing the production, Robert Surtees, ASC, known for his big productions as well as simpler films—a most versatile three-time Oscar winner.

"LOST HORIZON" turned into a father and son picture when Bob's son, Bruce, was assigned as first cameraman on the second unit. But more of that later.

Both units worked at Mt. Hood, based at Timberline Lodge at the 6,000-foot level. Timberline is a well-known ski resort and the lodge's snow tractor fleet provided the transportation flexibility needed for the project. A helicopter furnished the fast transportation and high mountain work when required.

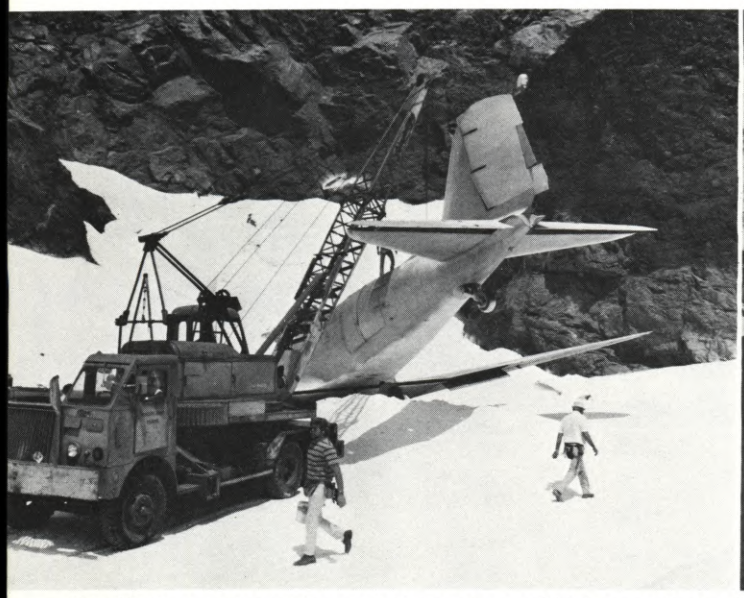
The lodge's radio system also augmented Columbia Pictures' own portables. The snow tractors and the lodge front desk are radio equipped and several portables operate on the same frequency. Timberline also provided a set of portables, normally used for ski race management, on a separate frequency. The whole system allowed simultaneous action control when long distances were involved, and helicopter and supply control.

Last winter's record snowfalls (there were 21 feet of snow on the level during filming) made easy access for some of the crevasse and ice-cliff closeups. The drifts surrounding the lodge and parking lot were 60 feet deep in places.

One traverse, called the "birdcage" set, was built of logs anchored to the ice wall of the parking lot. A natural snow cornice hung out over the top of the traverse, making it more realistic. This even made the professional mountaineers somewhat nervous.

Another set was a crude log bridge thrown across a narrow "crevasse" dug by a bulldozer in another snowbank.

(LEFT) Lightly clad crew films tie-in shots in the cleared parking lot of the ski area at Mt. Hood, Oregon. Scenes shot here, to spare actors the climb up the mountain, constituted some of the best snow footage in the picture. (RIGHT) On a snow-covered meadow in the Washington Cascades, the Second Unit, with Robert Surtees' son, Bruce, as Director of Photography, sets up to shoot a low-angle shot.



(LEFT) A crane lowers damaged airplane into artificial snow piled up in Bronson Canyon, prior to filming of sequence of aftermath of a plane crash which supposedly takes place in the Himalayas. (RIGHT) Chapman crane moves into Bronson Canyon, as the crew sets up lights and other equipment. In the background, high on a cliffside, can be seen the huge "HOLLYWOOD" sign, which is a famous landmark of the area.

The bridge was patterned after "National Geographic" photos of high Himalayan bridges.

These sets, a few hundred feet from the lodge, were planned as alternate locations when the weather was too stormy to reach the upper mountain; but some fair weather sequences were shot there, too. The fair weather was a problem that will probably have to be solved in the laboratory, double-printing snow into some of the scenes.

Director Charles Jarrott tried an avalanche scene in the parking lot, using a rotary snowplow to drop snow down into the scene, without a great measure of success. The snow and ice chunks were too large. A camera operator was knocked cold by one of the chunks.

For the high mountain work, the call was for 5:30 a.m. with the snow tractors taking the crew up the mountain at 6:30 a.m. The actors followed 10 or 15 minutes later to allow for setup time.

The two-mile ride, climbing 3,000 feet or more, took 20 to 30 minutes. The lodge's large 20-passenger Tucker Sno-Cats were designed for Antarctic transportation with the huge boxlike bodies riding high above the tracks. The smaller Thiokols were used to reach the higher locations, except for one reached by a helicopter.

Locations were mostly at the 9,000 to 9,500-foot levels with the highest at 10,100 feet, only 1,000 feet below the summit of the mountain, Oregon's highest peak.

The two Panavision Arris were equipped with 50-to-500mm F/5-to F/32 anamorphic zoom lenses; 35mm F/4-F/22, 50mm, 4-inch, and 150mm lenses. Generally, a zoom was on one camera and a 50mm on the other to produce matching action for inter-cutting.

The cameras had high speed motors and were powered by 24-volt nickel cadmium battery packs capable of running 10 magazines. Speed motors were powered by 36 volts. One camera was equipped with a corrected viewfinder, but on the other the operator viewed the squeezed image.

Surtees employed Eastman 5254 color negative shot at ASA 64 for daylight with an 85A or 86 filter. The light level was very high at the high elevations with the white snow contributing heavily. An ND6 helped cut down light on the brightest days with readings up to F/28 recorded. Overcast days produced readings of F/11 to F/16.

No auxiliary lighting was employed, although two reflectors did help to brighten the faces a bit in backlighted glare, one placed about 40 feet from the actors and another back another 10 feet or so to just barely feather the light away.

Too much fill in these natural backlighted scenes would have destroyed the realistic effect. Gauze helped to trim the reflected light.

For sound, the plan was to record a cue track. Some of the scenes sounded fairly good and possibly could be used, but most of the dialogue probably will be looped. When assistant director Jerry Ziesmer called for quiet for the sound takes, the noise of the unblimped Arris was quite apparent.

A Sennheiser 804 directional mike did help to keep the noise pickup down. There were four Vega radio mikes on the location, although only one was being used. Olivia Hussey, playing Maria, wore the mike. These units worked well on the mountain, up to several hundred yards away, with the pickup by a Vega Professional receiver. Two Nagra IV recorders were employed, one for backup, fed through a Perfectone mixing panel.

The cameras were, of course, well maintained, cleaned and oiled; but no particular winterizing steps were taken. Nonetheless, there were no speed problems in the low temperatures. One day at Mt. Hood, the temperature registered 19 degrees and the strong winds knocked the wind-chill factor down to well below zero. This was harder on the crew and actors than it was on the equipment.

When the weather was bad, it was good for filming, but it generated some good-natured grouching. During a particularly icy blast, one voice piped, "I'm sure glad this is a musical. I'd hate to be working on a serious production. When do we bring on the dancing girls?"

There were only two women at the location, Olivia Hussey (who actually does dance later in the picture) and her double, a young Yakima, Wash., mountain-climber.

Most of the location work was shot at normal speed, although the second unit shot some sequences at 20-fps where the action was a little slow, and they overcranked to 30-fps in the Tylermount Arriflex (equipped with a 50-to-500mm zoom) to smooth out footage shot from the helicopter.

The lightweight Arris, carried on the

shoulder, produced some good walking and other P.O.V. shots to bring out the detail of the long tortuous journey. The Mt. Hood work consisted of the scenes of the initial trek into Shangri-La, the trek of Richard (Peter Finch), his brother (Michael York) and Maria out of the valley, and Richard's final return to the valley.

Director Jarrott was all over like a mountain goat, climbing up ahead of the snow tractors, picking his setups, throwing snowballs to designate turning points in the trail. He used the helicopter to reach the production's highest setup, located at the 10,100-foot level inside the ancient crater of Mt. Hood's summit; but he walked back down. Bruce Surtees had scouted the location earlier on foot.

Pilot Jack Johnson of Queen City Helicopters, Seattle, Wash., would only chance one passenger at a time in his three-place Bell J3 helicopter for this high mountain landing.

Earlier, he had dropped off a totem pole which marks the Shangri-La "city limits", for the final scene entering the valley. It was shot with doubles.

Columbia contracted with Lute Jerstad Enterprises of Portland, Ore. to provide 21 mountain climbers to perform as extras as well as to do the technical mountaineering necessary for both the production and artistic success of the venture. Jerstad was one of the first Americans to climb Mt. Everest.

During warm weather, the mountaineers sweltered under the heavy sheepskin Tibetan parkas and boots, although the warmth was welcome on the stormy days.

For the long shots, the leader was radio-equipped for his cues. One scene of an avalanche crashing down on the porters called for action before the avalanche signal. The radio had to be out of sight, so a bullhorn was set up to produce a feedback squeal to cue the reaction a quarter-mile away.

This scene was particularly realistic as the climbers stumbled and fell over their own ropes. "That one's good for an extra drink tonight, fellows. Thank you," was the word radioed to them from the cameras after the single take, a print.

While the trek scenes continued, I hopped on my skis to drop down to the lodge to have a chat with Bob Surtees. His son was relieving him on this day while Bob took it easy after a long 12-hour storm-ridden previous day.

The crew was envious of my run as the skiers in the crowd had been waiting to hit the hill. Their 6:30 a.m. to 7 p.m. schedule had not allowed it.

Ten minutes later, 3,500 vertical feet and two airline miles lower down the mountain, I was in Timberline Lodge's magnificent timbered lobby, talking with Surtees, working on his 60th picture as first cameraman.

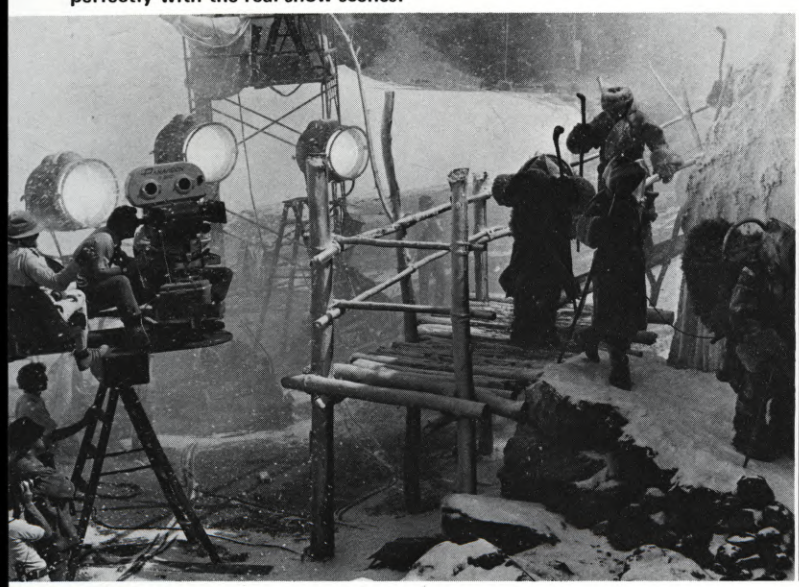
I asked him about his approach to "LOST HORIZON".

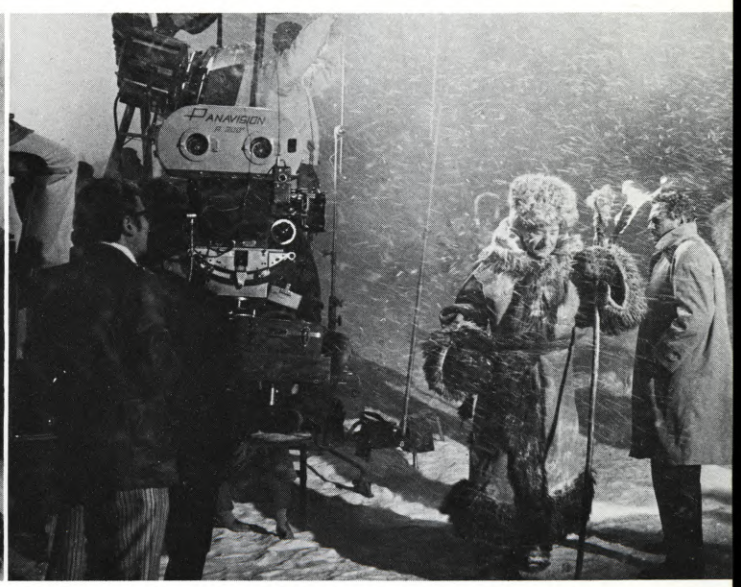
"We really can't do very much differ-

Continued on Page 497

Special effects experts feed artificial snow into a wind machine to create a Hollywood blizzard. Reflectors, as well as natural reflection from artificial snow piled up on the hillsides, helped out with the fill-light problem.

(LEFT) With Brute arcs lighted, the Panavision camera booms in for a close shot of the procession struggling across the makeshift bridge toward the tunnel that will lead them to Shangri-La. (RIGHT) John Gielgud (CENTER) and Peter Finch brave the man-made blizzard, as producer Ross Hunter looks on from the left. Due to the artistry of Director of Photography Robert Surtees, ASC, these simulated shots in Bronson Canyon tie in perfectly with the real snow scenes.





DEDO WEIGERT FILM

PRODUCTION IN EUROPE?

MUNICH

Dedo Weigert Film's rental department supplies the latest motion picture equipment - maintained by factory trained specialists.
Our sound service studio handles multi-track mixes and 60 cycle transfers.
Complete camera crews available.
Multi-lingual staff in all departments.

write for our catalogue:

DEDO WEIGERT FILM GMBH
8 Munich 2 Rottmanstraße 5
Telephone 529666 Telex 529-865
Cable Address Weigertfilm Munich

call our New York agent:
SOUND ONE INC.
(212)-765 4757
Phil Pearle

Arri 35 IIC with 3 matched Cooke lenses, 3 magazines, battery, etc - $ 10 per day*

Quartz multi-camera systems

Blimps, dollies, helicopter mounts

Mitchell, Milliken,
Eclair, Nagra, Sennheiser

35 mm 8-track selsyn mix - $ 30 per hour*

Steenbeck editing tables

agents for:
TIFFEN,
O'CONNOR,
MILLIKEN,
CRYSTAMATIC

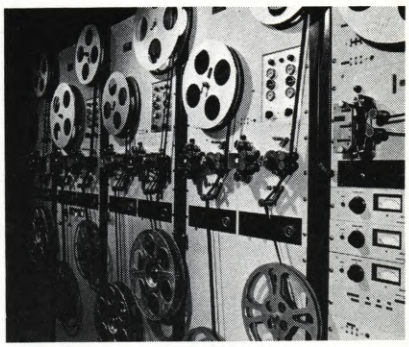
*subject to current exchange rate

A film maker needs his own on-premise mixing studio.

Du Art has it for you at a remarkable $50 per hour.*

A Rube Goldberg toy? Hardly. This brand new sound studio and interlock screening room is among the best designed and best equipped you'll see anywhere. Designed by the noted Bob Eberenz considered to be one of the best sound architects in the nation. Eight track console for 16 or 35mm mixing. Narration recording studio. Price includes a Du Art mixer or, if you believe in the complete creative process, you can mix your own sound at even greater savings. Du Art gives you a truly "one stop" service. Film processing, video tape to film and now sound transfers and mixing all at remarkably low cost.

*Free sound transfers and an amazing low $50 per hour for mixing if we process your dailies. Mixing without Du Art processing at $75 per hour.



DU ART FILM BUILDING/245 W. 55TH ST./NEW YORK 10019/(212) PL 7-4580

Window Shopping:

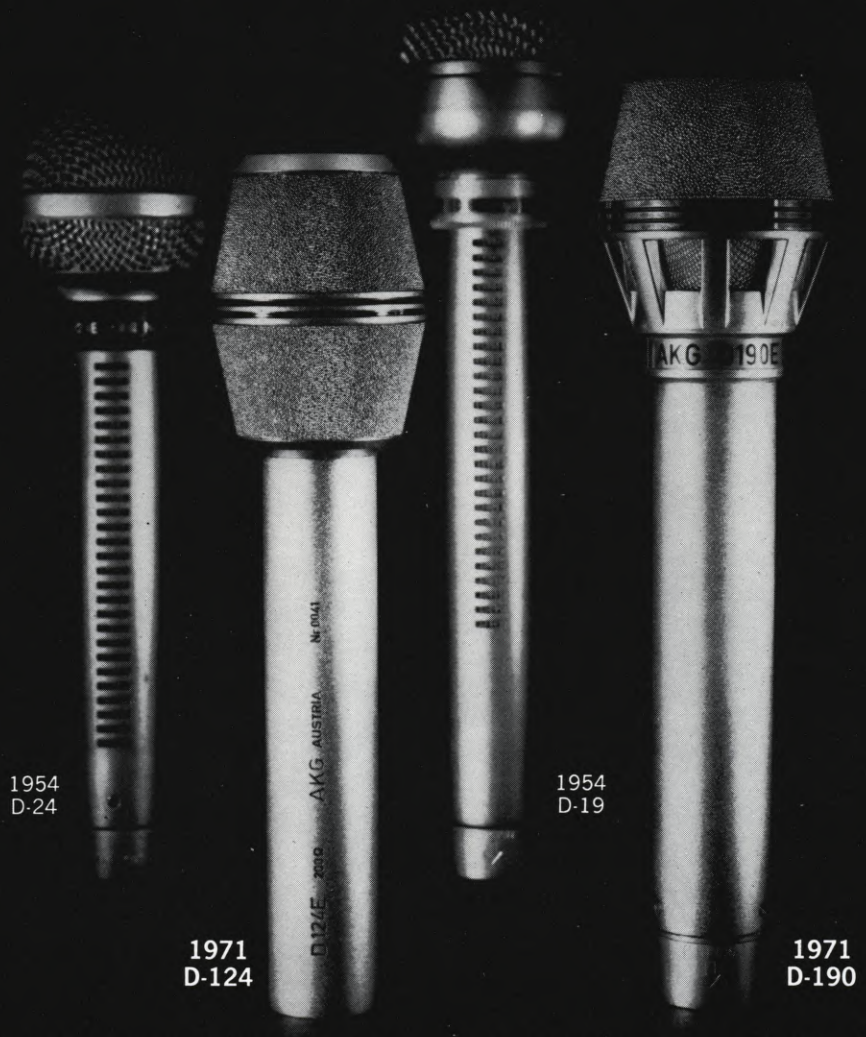
THE VEGA WIRELESS

If you need reliability, portability and assured sound quality in a wireless microphone system, FERCO wants you to know about Vega's Model 55/57 Professional II. Its receiver has been miniaturized and equipped with internal battery power for easy portability. Also, the meter, all controls and connections are located on one side for convenience. Connectors on both transmitter and receiver have locking devices to avoid shaking loose. Sound quality is assured — even gun shots won't cause distortion interference due to the transmitter's unique compressor/limiter (which can be turned off if desired).

Outstanding dependability of performance is another name for the Model 55/57 Professional II. R.F. carrier frequencies are in the VHF high band range and crystal controlled to avoid drift. Extra features include low cost, easily available batteries, dual input transmitter and multiple channel operation. FERCO's list price for the basic 55/57 system including transmitter, receiver, connecting cable to Nagra, and aerials is $1,100.00 **New York:** 419 West 54th Street, New York 10019 Phone (212) 581-5474 **San Francisco:** 1300 Sansome Street, California 94111 Phone (415) 398-2307.

Film Equipment Rental & Sales

We admit...
we have created a generation gap!



When it comes to cardioid dynamic microphone developments **AKG** is purposely creating a generation gap.

We have to, because we insist on staying far ahead.

Imitation is the sincerest form of flattery and while others attempted to equal the acoustical properties and duplicate the design appearance of the D-19 and D-24, **AKG** continued in setting the pace by developing a new family of transducers with superior performance characteristics.

The D-19 and D-24 are the finest microphones in their class, as thousands of owners will attest. However, new techniques and materials made fundamental design changes possible. Gone is the complicated "plumbing" within the microphone requiring slots or holes along the microphone body, and these essentials are improved: smoothness of response, uniformity of directional characteristics, front-to-back ratio at all frequencies and ruggedness.

The **AKG** D-124 and D-190 are the newest generation of cardioid dynamic microphones, designed for today's requirements.

For detailed information, see your authorized local **AKG** dealer or write to us.

MICROPHONES • HEADPHONES

DISTRIBUTED BY
NORTH AMERICAN PHILIPS CORPORATION
100 EAST 42nd STREET, NEW YORK, NEW YORK 10017

AKG-17

All 3 are important to you.

1

Motion Picture Laboratories is recognized throughout the industry for the distinguished quality of its work.

2

MPL is nationally known for its fast and efficient service. This is possible because of our comprehensive, ultra-modern equipment.

3

MPL is held in special regard for its friendly, helpful, highly knowledgeable representatives.

Aren't these 3 important reasons for YOU to do business with Motion Picture Laboratories?

Send MPL your film today!*

*Remember! MPL can give you TELEDYNE video-to-film transfers.

MOTION PICTURE LABORATORIES, INC.

781 South Main Street
Memphis, Tenn. 38101
(901) 948-0456

rosco cinegel T.M.

A COMPLETE SYSTEM OF LIGHT CONTROL MEDIA

Until very recently, light control materials were available to the cinematographer only as a haphazard collection of gels, filters, reflectors and diffusion screens. Borrowed from other fields, they were made to work, mostly because there were no alternatives.

Now, with the help and guidance of several of today's leading cinematographers, we've put together a total system that really answers the needs of the industry.

A full range of Rosco Cinegels is available to control color temperatures of lights of all kinds as well as convert daylight to 3200 K and reduce its intensity. Diffusion materials and reflector surfaces control the "quality" of the light in another dimension.

All these materials have one thing in common: They are designed to precisely fit the special needs of lighting for cinematography.

The Roscolex panels, for instance, fulfill the need for a fast and easy way to convert daylight from windows and doors to 3200 K, or reduce the intensity of daylight in varying degrees, or a combination of both. The 4 ft. x 8 ft. panels go up fast, strike just as fast, and permit quick response to changing conditions. They are optically clear enough to shoot through and they can be re-used again and again.

But they are not the only way to control daylight. To gel windows there is a range of other Cinegels available. Some adhere directly to glass, others need framing.

There are gels to balance daylight and dichroics to fluorescent light. There's even a gel that takes an ordinary 3200 K light source, raises it to daylight and adds just enough green to match the cast of the fluorescents. The entire correction can then take place with one filter on the lens. There's no need to turn off or overpower the light from the fluorescents.

There are eight different blues to raise the color temperature of lights. Each has a very specific function, from boosting fading blue-faced FAY lamps, to replacing dichroics altogether.

We offer seven different diffusion materials ranging from a "Tough Frost" able to stand up under high-heat situations to a "Tough Spun" without the itch and irritation of glass.

Whether the Brute you are gelling has white or yellow carbon, Rosco Cinegels offer just the right correction and U-V absorption in waste-free 30″ rolls and in a material tough enough to take it.

A "soft" reflector board used to take 100 sheets of aluminum leaf, carefully pasted down with edges curled to break up the light. It takes one single, easily applied, sheet of Roscoflex to create the same effect. And Roscoflex has a tough, salt-air resistant surface that can be washed, dusted, or hosed down again and again without scratching or tarnishing.

Whether you want to control the color temperature of light or its intensity, diffuse it or reflect it, there's a complete range of special materials available from Rosco.

They are very different from each other, each one just right for its specific task, but they all share a common purpose. That's why we've decided to give them a generic name . . . "Light Control Media".

Together they offer the cinematographer, for the first time, a complete system of light control media.

rosco
Port Chester, N.Y. 10573

FREE: *Swatchbooks of Cinegel are yours, FREE, for the asking.*

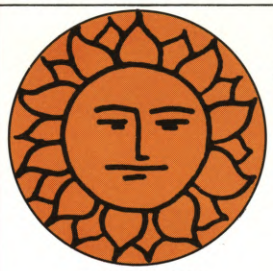
rosco cinegel T.M.

NEW

Color Media t
balance day-
light, quartz
incandescent
light to the g
cast of stand
"daylight" or
"cool white"
fluorescent
bulbs.

roscolex
Converts "dayl
3200 K. 4 ft x 8
optically clear,
Designed for
fast handling.

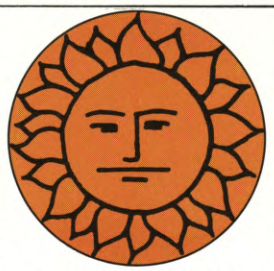
CONVERT DAYLIGHT TO 3200 K



ROSCOVIN 85

roscovin 85
Converts "daylight" to 3200 K. Adheres directly to glass without taping or framing.
Rolls: 54″ x 50 ft.

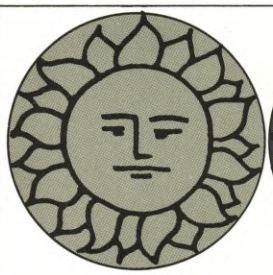
roscolene cine 85
Converts "daylight" to 3200 K. High clarity acetate base.
Rolls: 48″ x 50 ft.



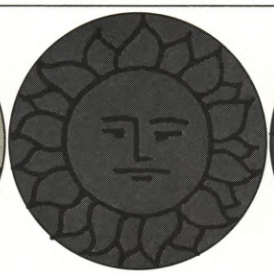
ROSCOLENE CINE 85

ROSCOLEX 85

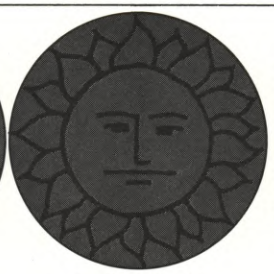
REDUCE THE INTENSITY OF DAYLIGHT



ROSCOVIN N3



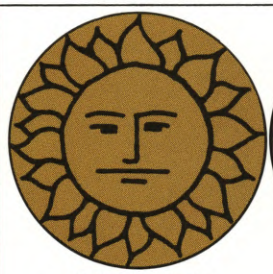
ROSCOVIN N6



ROSCOVIN N9

roscovin
neutral densities
Reduce light intensity.
N3 — 1 stop. N6 — 2 stops.
N9 — 3 stops.
Adhere directly to glass without taping or framing.
Rolls: 54″ x 50 ft.

REDUCE THE INTENSITY OF DAYLIGHT AND CONVERT TO 3200 K



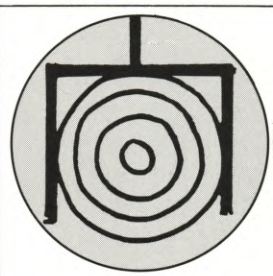
ROSCOVIN 85N3

ROSCOVIN 85N6

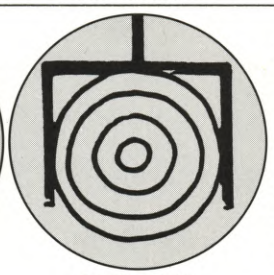
ROSCOVIN 85N9

roscovin 85 plus
neutral densities
Convert "daylight" to 3200 K and reduce light intensity by 1, 2 and 3½ stops.
Adhere directly to glass without taping or framing.
Rolls: 54″ x 50 ft.

SOFTEN AND DIFFUSE LIGHT



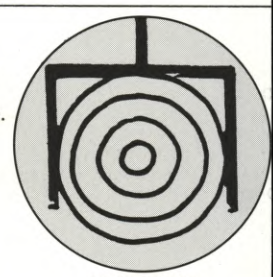
ROLUX



SOFT FROST

rolux
Dense white diffusion material for very soft lighting.
May be used as bounce surface.
Place at a distance from high temperature lights.
Rolls: 48″ x 25 ft.

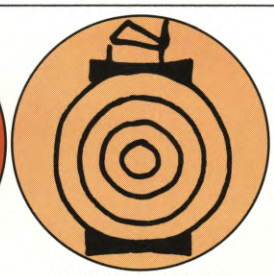
soft frost
Less dense than Rolux.
May be stretched on frames.
Rolls: 54″ x 25 ft.



CINE FROST

FILTER CARBON ARC LIGHT

ROSCOLENE MT2



ROSCOLENE MT2½

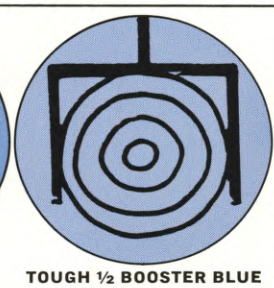
roscolene MT2's
Reduce color temperature of white flame carbon arcs.
Durable acetate base.
Rolls: 48″ x 50 ft.

BRUTE Y1

CONVERT 3200 K TO DAYLIGHT. BOOST KELVIN OF LIGHTS

"DAYLIGHT" TOUGH BLUE 50

TOUGH BOOSTER BLUE



TOUGH ½ BOOSTER BLUE

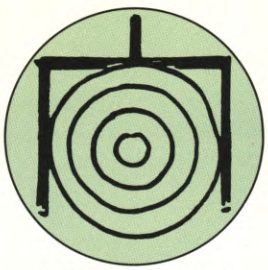
roscolar "tough blues"
Boost color temperatures.
Tough Blue 50 boosts 3200 K lights to "daylight"
Tough ½ Booster Blue and Tough Booster Blue increase Kelvin 400 and 800 degrees respectively.
Tough base resists high heat.
Rolls: 48″ x 25 ft.

CONVERT DAYLIGHT, DICHROICS OR 3200 K LIGHT TO "FLUORESCENT DAYLIGHT"

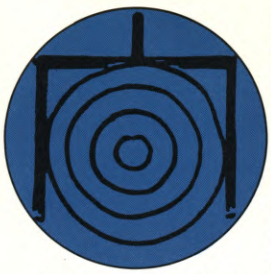
WINDOWGREEN

windowgreen

Converts natural "daylight" to the "fluorescent daylight" of standard fluorescent bulbs. High clarity acetate base. Rolls: 48″ x 50 ft.



TOUGH PLUSGREEN



TOUGH PLUSGREEN 50

tough plusgreen

Converts the "daylight" of dichroics or FAY lights to the "fluorescent daylight" of standard fluorescent bulbs. Tough base resists high heat. Rolls: 48″ x 25 ft.

tough plusgreen 50

Converts 3200 K light sources to the "fluorescent daylight" of standard fluorescent bulbs. Tough base resists high heat. Rolls: 48″ x 25 ft.

anels.

LIGHT CONTROL MEDIA

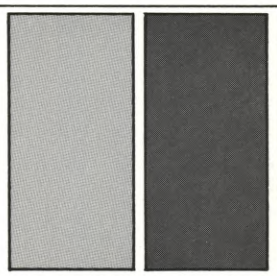
ROSCOLENE CINE N3

ROSCOLENE CINE N6

ROSCOLENE CINE N9

roscolene cine

neutral densities
Reduce light intensity 1, 2 and 3 stops.
High clarity acetate base.
Rolls: 48″ x 50 ft.



ROSCOLEX N3 ROSCOLEX N6

roscolex

neutral densities
Reduce light intensity 1 and 2 stops. 4 ft x 8 ft optically clear, rigid, panels. Designed for fast handling.

SCOLEX 85N3

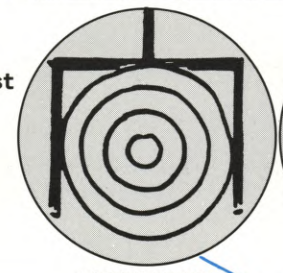
ROSCOLEX 85N6

roscolex 85 plus

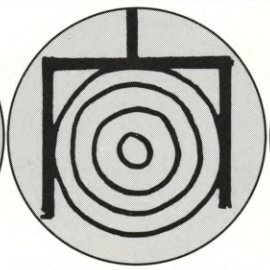
neutral densities
Convert "daylight" to 3200 K and reduce light intensity by 1½ and 2½ stops.
4 ft. x 8 ft. optically clear, rigid panels. Designed for fast handling.

oscolene cine frost

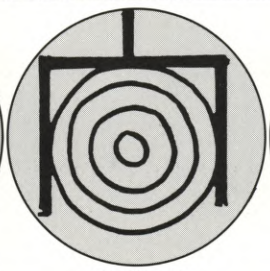
ffusion filter on
ched acetate base.
fficiently heat stable
r use on most lights.
lls: 41″ x 50 ft.



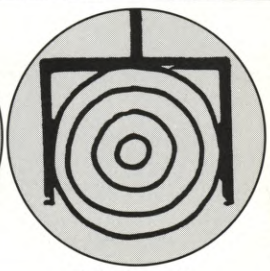
TOUGH FROST



½ DENSITY TOUGH FROST



TOUGH SILK



TOUGH SPUN

"tough" diffusion filters

For use on hot lights. Tough Frosts give a soft, even light.
Rolls: 48″ x 50 ft.
Tough Silk gives the effec of silk. Tough Spun diffus like spun glass without the particle irritation to eyes and skin.
Rolls: 48″ x 25 ft.

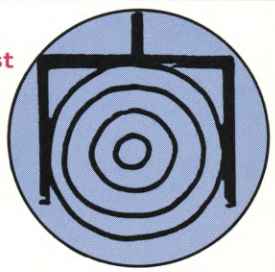
BRUTE YF

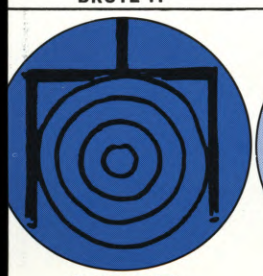
roscolar "brutes"

Absorb the ultra-violet generated by arcs.
Brute Y1 reduces Kelvin of white flame carbons.
Brute YF corrects yellow flame carbons.
Tough, heat stable, durable base.
Rolls: 30″ x 50 ft.

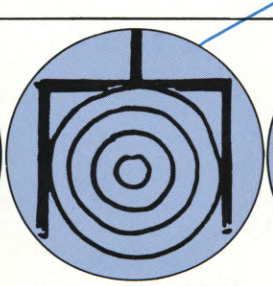
tough booster frost

A combination of Tough Frost and Booster Blue. Raises color temperature about 500 degrees and diffuses light. Tough, heat resistant base. Rolls: 48″ x 25 ft.

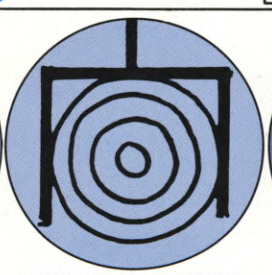




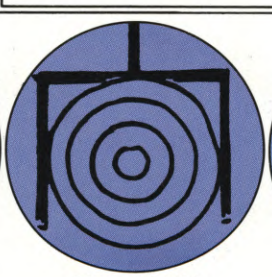
"DAYLIGHT" CINE TD25



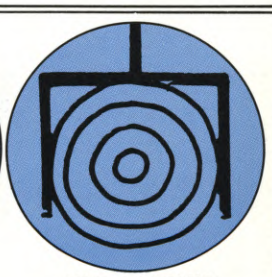
CINE BOOSTER BLUE



CINE ½ BOOSTER BLUE



CINE 26 BLUE



CINE ½ 26 BLUE

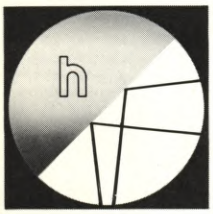
roscolene "cine blues"

Raise color temperatures. TD25 converts 3200 K to daylight, Booster Blue and ½ Booster Blue raise 800 and 400 degrees.
Use on FAY lamps or for slightly cooler tone.
Cine 26 and ½ 26, are light warm blues.
Acetate base.
Rolls: 48″ x 50 ft.

roscoflex

Reflection media

Rosco's reflection materials were originally developed as an easily applied, more durable surface for reflector boards. But now these materials are being widely used to bounce light **in** the studio, as well. Because, it's so lightweight, you can cover whole walls and ceilings with it. You can use it on dots or gobos to reflect light just where you want it. Unlike aluminum foil, Roscoflex is a washable, durable laminate that won't scratch, is unaffected by moisture and humidity, and can be rolled up and re-used again and again.



roscoflex-h

A "hard" reflector material that is strongly directional. It tends to retain the character of the light source producing hard shadows, but firm, sharp light, like the hard side of a board.

roscoflex-g

For warm reflected light, cinematographers used gold-leaf materials on their boards. Now you can duplicate this same quality anywhere, with or without a board, with Roscoflex "G".

roscoflex-s

The ideal material for soft, diffuse reflection, where large washes or small spots of soft light are needed. Most closely matches the character of traditional leaf on a reflector board.

roscoflex-c

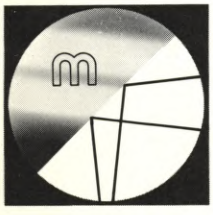
Most reflectors warm the light since, when used outdoors, they reflect the sun and not the sky. Roscoflex "C" (Cool) boosts the Kelvin of the reflected light back to normal.

roscoflex-ss

Today's emphasis on very soft light dictated the need for a reflector material that goes one step further to provide the softest possible reflection. Roscoflex "S" (Supersoft) meets that need.

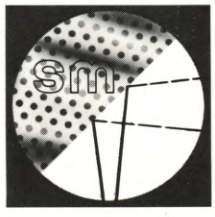
roscoflex-f

Virtually weightless, Roscoflex "F" (for featherweight) is strong and tear-resistant. Used to bounce light into inaccessible locations like tops of closets, or to cover entire walls or ceilings.



roscoflex-m

This tough, durable plastic material has a mirror finish for long throws of reflected light or intense reflection. Works like a mirror but is easy to transport and won't crack or break.



roscoscrim

A perforated, two-sided laminate, Roscoscrim does double duty. As a reflector it offers soft, even reflection. As a filter it reduces the light two stops. Also used to reflect away heat.

roscoflex

Roscoflex comes in 48" (1.22 meters) rolls which are, except for Roscoscrim, 30 feet long (9.14 meters). Roscoscrim rolls are 25 feet (7.60 meters) long. Sheets 20" x 24" (0.51 x 0.61 meters) are also available.

rosco

Port Chester, N.Y. 10573 (914) 937-1300
11420 Ventura Blvd., Studio City, Cal. 91604 (213) 980-0622

FREE: A swatch book of Roscoflex materials is yours free for the asking.

If you have a little money to spare you can buy a kid breakfast for a year.

If you have a lot of money to spare you can buy him a home.

For 17 years, WAIF, the Children's Division of International Social Service, has been providing homes for homeless children throughout the world.

We've arranged for their adoption and foster care, settled custody or guardianship problems and reunited many with their families after long periods of separation.

We want to continue doing this. And we can. With a little help from you.

Just $10 can buy breakfast for 8 months for a pre-schooler in Venezuela.

$25 will provide English language lessons and counseling for a refugee child coming to the U.S. from Hong Kong.

$150 will reunite a Mexican-American family separated by immigration problems.

$240 will pay for a year's foster care for a Vietnamese baby.

And $500 will find a home in the U.S. for a rejected Korean child.

Your contribution, no matter what its size, will help make life a whole lot happier for one of these children somewhere in the world.

Send your donations to *WAIF, Box 2004, N. Y., N. Y. 10017.*

All gifts are deductible from U.S. income tax.

WAIF

PRE-PRODUCTION PLANNING PAYS OFF ON FILMING OF "THE MAN FROM CLOVER GROVE"

A scientific approach to plotting the various elements of production results in substantial savings in time and costs . . . plus a happy company

By WILLIAM E. HINES
Co-Producer/Director of Photography

With some exceptions, I have been associated with rather tight, relatively low-budget film productions of various types during the past twenty years, and this outing was to be no exception.

In addition to the cinematography, I was to be involved in co-producing this Intro-Media Productions film with my colleague, William B. Hillman.

Producing is a process which deserves more attention than this article can devote to it. But, in general, it involves developing the project from concept to completion, which includes attending to the myriad details associated with the script, budgeting, funding, staffing, casting, crewing, purchasing, cost accounting, publicity and public relations, negotiations with agents, unions, vendors and distributors, and scheduling.

Bill and I had devoted considerable time and energy to finding funding sources interested in motion picture investment. And now that funding was a reality, the added responsibility of bringing a marketable product in on schedule and within the very limited budget was our prime concern.

The cardinal rule of the tight budget film is *thorough pre-production planning of all phases of the production process,* not to mention equal attention to the pre- and post-production phases as well. This involves careful consideration in the determination and selection of staff, cast, crew, equipment, supplies, vendors and shooting sites.

In doing this pre-production homework, it is essential to *weigh all decisions against the time-cost factor.* Time is money, and production time is more expensive than most single budget items. For example, eliminating from the budget a rental or purchase item or a production craftsman (generally an assistant type) looks good on paper, but often costs dearly in lost or extended time during production. There are those well-intentioned individuals who end up incurring considerable expense to save a dollar (on paper). Avoid this folly. Save money where it counts—in production time.

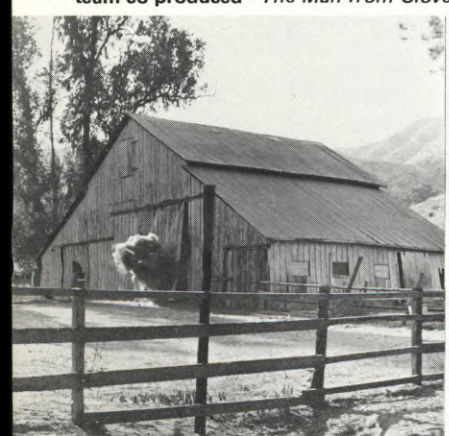
Also important is to *keep all options open.* Appropriate selection of the type and amount of personnel and equipment, and a carefully planned shooting schedule and logistics can, together, allow maximum flexibility in any predictable eventuality.

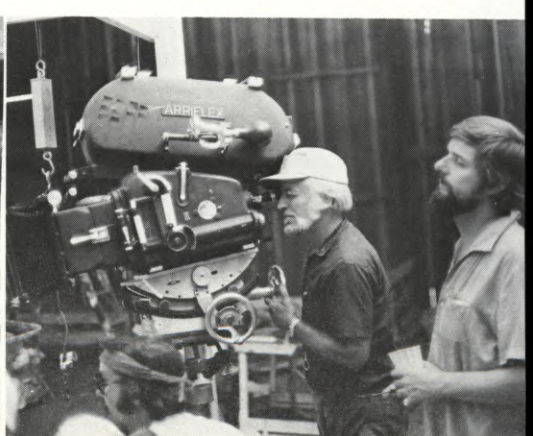
Time spent in pre-production planning costs much less than does production time because relatively few people and salaries are involved prior to shooting, and rentals are limited to office space. For example, we estimated that pre-production time on this picture would cost about $60.00 per hour and production time would come to about $600.00 per hour. Since we came in on schedule and at budget, these figures held; pre-production time approximated one-tenth the cost per hour of production time. So it behooved us to make the most of our pre-production efforts to solve every conceivable problem then and there and not to have such problem solving occur *during* costly production time.

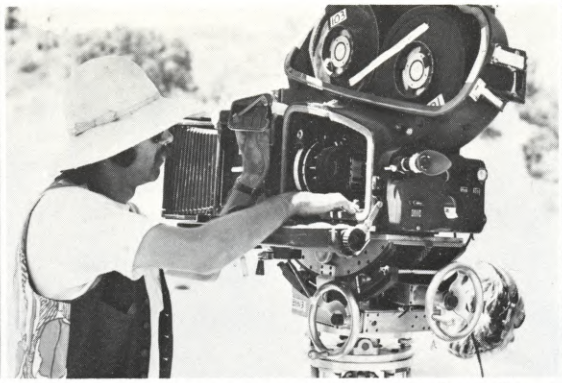
Of course, everything starts with the screenplay, which hopefully has been well crafted, because it takes as much technical effort to put a poor script on film as it does a good one. From the script is developed the creative staff, cast, crew, shooting sites, production schedule and final budget breakdown.

Our market research had convinced us that there was a need for feature film product suitable for the entire family. Of our twenty-five film properties, we decided on one of our G-rated-type scripts titled, "THE MAN FROM CLOVER GROVE", an original by Bill Hillman. It is a whimsical situation comedy about the bedeviled proprietor of a marginal cattle farm who, between his farm chores, takes time to make numerous one-of-a-kind dolls, games and plastic mechanical toys which he then periodically gives to the children of a nearby orphanage. In addition, he creates remote-controlled model planes and cars, as well as numerous electronic gadgets, none of which ever seem to

(LEFT) The picture literally starts off with a BANG! as one of Claude Raintree's inventions blows the front door off the barn. The right and left wings of the barn were partitioned off to both minimize and facilitate interior lighting. (CENTER) The right side of the Arri 300 shows the access door for the magazine film take-up belt, focus knob, and camera power feed. Note frontal blimped housing for 25-250mm zoom lens, used throughout filming. (RIGHT) Director William Hillman carefully studies the action as cameraman Hines puts it on film. This director and cameraman team co-produced *"The Man from Clover Grove".*







(LEFT) The McAlister crab dolly with risers fully extended rests at the end position of a dolly move. The installed level ¾" playboard floor gave needed mobility to both toys and camera. (CENTER) Assistant cameraman Marcel Shain checks the film loop after changing magazines. Note the quick-release wheels on the 1,000' Mitchell-type magazine. (RIGHT) Key grip Mike Shore moves the Dexter platform dolly along its tubular aluminum tracks as Claude Raintree crawls after one of his errant toys. The two grips were able to set and level the lightweight dolly tracks in less than ten minutes.

work right for him, causing him considerable trouble, in fact. His problems of dealing with an incompetent helper, a conniving, money-grubbing landlord, a long-suffering, frustrated sheriff and his deputy, a patiently-waiting, love-smitten maiden, a runaway orphan lad, and a somber stranger who lurks about, spying on the toy-making activities, are the basic story elements.

Since the entire story takes place on and near a farm, we went scouting for an appropriate location which would suit our interior/exterior shooting requirements. We selected the Hawkins Ranch, located in Liberty Canyon near Agoura, California, which was nearly ideal. It had a large barn, riding horses, and assorted livestock, poultry and outbuildings, surrounded by varying topography—hills, flatland, trees, a small lake, and several dirt roads.

The production staff was headed by Hillman and myself, ably assisted by Gary Grillo, associate producer, and Sharon Kaiser, assistant to the producers.

For quality control it was determined to go full union—DGA, SAG and AFC-NABET. Each of the unions accorded us every consideration possible.

The Directors Guild contingent consisted of Bill Hillman directing, assisted by First Assistant Director Grillo and Second Assistant Director Sylvan Duchovnay.

The comedy-cast twelve were: Ron Masak as the good-hearted inventor, Claude Raintree (the man from Clover Grove); Cheryl Miller as the sweet but uncoordinated Millie Swickle; Paul Winchell as her contentious dad, Jefferson Swickle; Spencer Milligan as the bumbling handyman, Fester McLong; Richard Deacon as the ominous, ever-lurking spy from a toy factory, Charlie Strange; Joe Higgins as the frustrated Sheriff Dodd; Stu Gilliam as the ever-eager Deputy Billy; Buddy Lester as the villainous neighbor and landlord, Ched Fields; Rose-Marie as the understanding orphanage nun, Sister Mary; Jed Allen as the harassed but nonchalant hippy; Rai Bartonius as the officious orphanage driver; and Billy Hillman as the runaway orphan lad, Zeke.

Our basic production crew consisted of fourteen Film Craftsmen. I directed the photography and operated, ably assisted by Marcel Shain. Gaffing was Craig Greene, assisted by Russell Bird. Key Grip Mike Shore was assisted by Phil Dunn. Keith Wester was Production Mixer and the mike boom was handled by Dave Schneiderman. Will MacKenzie created the makeup, Jane Morgan supervised the script, Gene Winfield supervised set construction and special effects, Bill Jones decorated the set and handled props, Richalene Kelsay watched over wardrobe matters, and Paul Lester functioned as Utility and Driver. On a daily basis, as needed, were Linda Weldon shooting production stills and Camera Operator Robert Kaufman on the second camera, assisted by Keith Kelsay.

Our Film Editor was John Winfield, ACE, assisted by Don Schneider. Original music score was by Kurt Dietel and Kenny Kotwitz. CFI did a fine job on our lab work, as did Glen Glenn on the post-production sound.

Motion pictures are essentially a director's medium. Because the cinematic process is one of editing, of selecting, of building the picture shot-by-shot until the entire mosaic is complete, it falls to one man to lead the team effort—the director. He plans and blocks the action and the actors play their scenes to him, an audience of one, who must be satisfied with the performance before proceeding to the next shot. Like an engineer at the throttle of the production train, running on the script tracks, the director controls the pace of the shooting schedule and also the pace the picture will eventually take on the editing table.

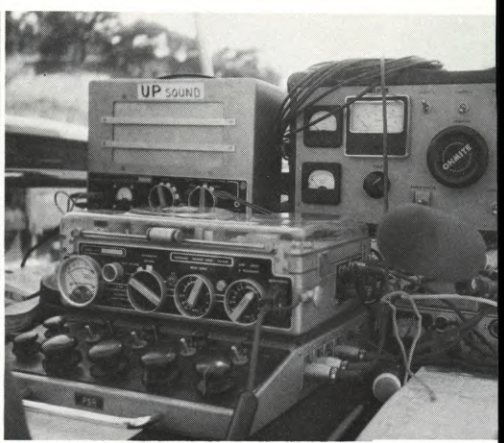
It is the responsibility of the director of photography to apply the appropriate type and amount of personnel and equipment to the production in a manner best suited to capture on film the mood and action of the story within time and budget limitations.

The director is principally responsible for presenting the action to the camera; the cinematographer, for capturing that action on film. Thse functions are best served by close and understanding cooperation between director and cameraman. I have found that operating the camera myself helps considerably in facilitating this essential creative teamwork, particularly in filming TV commercials and in tight low-budget features such as "CLOVER GROVE", where pre-production rigging has minimized lighting procedures.

Comedy is among the toughest forms of entertainment to put effectively on film. Timing is of the essence. First takes are generally the best for comedy performances, even with an experienced cast. Consequently camera/sound rehearsals were often truncated run-throughs with the actors easing through their blocking, saving voice and energy for film, often saving some ad-lib action

---

ABOUT THE AUTHOR. Bill Hines has been a free-lance director of photography more than twenty years, with several hundred films of various types to his credit. A product of USC, which granted him BA and MA degrees, his background includes writing, producing, directing and editing. He spends time on film research when he is not in production, and contributed the chapter on filmcraft job descriptions for the recent book, "LOW BUDGET FEATURES", by Wm. Brown. He recently completed special photography for the Vagar Films feature, "SURABAYA CONSPIRACY", which was filmed in PanaVision. He and his partner, Bill Hillman, plan to produce more G-rated family films under the Intro-Media Productions banner.



(LEFT) Director Bill Hillman discusses an upcoming scene with (l-r f.g.) Ron Masak, Buddy Lester, Paul Winchell and Spencer Milligan, with cameraman Hines listening in. (CENTER) First AD Gary Grillo, Director Hillman and sound mixer Keith Wester carefully listen to sound playback. (RIGHT) Production sound was taken by a Nagra III recorder which is setting on a modified Sela four-channel mixing console. A playback speaker unit is behind the Nagra and to the left of a Glen Glenn camera power supply, which also supplies a sync signal to the recorder. Below sound slate mike on right is meter for monitoring sync on Cine 60 with second Nagra during double-coverage.

as well. So the camera, dolly, and sound crews had to be constantly alert in order to stay with such unrehearsed movement during those precious first takes. It was important therefore to have equipment and crew which would allow maximum flexibility and reliability.

FILMING PARAMETERS

We had a very tight budget and a shooting schedule of fifteen ten-hour days, neither of which we could afford to exceed. We shot three five-day weeks and averaged just under ten hours per day.

A shooting ratio of 8:1 was budgeted for, and we ended up by exposing 66,000 feet of Eastman color negative (5254), all of one emulsion number, printing 48,000 feet of one-light, uncorrected color dailies, for 95 minutes (8,550') of finished film.

We had decided on framing a tight 1.85 aspect ratio in order to accommodate mattes from 1.85 through 1.66 in projection, keeping essential action within the 1.33 TV safe area to minimize optical scanning for TV release. The entire academy frame area had to be kept free of the mike, the boom and their shadows and, of course, of any extraneous equipment and personnel. This meant that sound had to reach a bit on the full shots, and we often had to hide or "bury" the mike, but sound came through loud and clear.

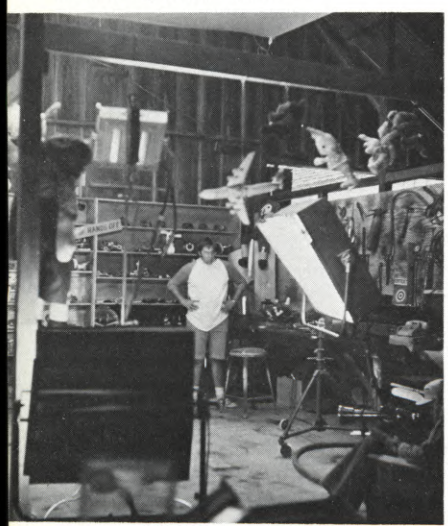
To maintain a for-real sound presence throughout the picture, even for the normally MOS (minus dialogue) scenes, we decided to take sound on all shots. We felt that this procedure would enhance the overall quality of the film as well as require less time in post production sound effects work. And it did.

Because of the comedy genre, we decided on a straightforward photographic approach with high key lighting. A ratio of 1½:1 was used, except for some night and light-change effects, run-bys and certain long shots.

Foot and car chase sequences were called for in the script and we decided that under-cranking would enhance the antics. We shot from 6-12 fps, depending upon the action, and the results were pleasantly effective.

It was essential during production to keep as mobile as possible, to keep set-up and wrap time to a minimum. By and large, we were able to do this with our compact, efficient crew, the type and amount of equipment we selected, and by our pre-production rigging of interiors and exteriors.

(LEFT) Utility man Paul Lester waits for the "Set's clean" word prior to an MOS take in the workshop/toy display area. Note the installed wooden floor, the plywood partitioning to the right and a part of the overhead silk above. (RIGHT) Grip Phil Dunn, script girl Jane Morgan, gaffer Craig Greene and director Hillman stand by while cameraman Hines operates the wild Arri, assisted by Marel Shain.



THE CAMERA EQUIPMENT

Because the director planned full master scene takes, 1,000' camera magazine capability was a must. My preference was a BNCR but, as luck would have it, not one was available at the time. And, of course, the PanaVision and Todd A-O systems were beyond our budget limitations. However, an Arri 300 blimp with IIC was available and, after testing it, I decided to go with it as our principal sound camera system. Besides, it was large enough to accommodate my large Condor horn which is a real voice-saver when it comes time to announce to the AD that "camera is ready!" I had already planned to have an Arri in a Cine 60 blimp, was well as a wild Arri, standing by for added coverage, for inserts, and for fast tripod set-ups on steep terrain.

We needed the capability of completely fluid coverage so we equipped the Arri 300 with an Angenieux 25-250mm zoom lens. It being rather bulky and somewhat heavier than the BNC, we mounted it over a Worrall gear head on a McAlister crab dolly for interiors and exteriors. The few times

we had to use the Arri 300 on an extra-heavy-duty tripod took three men to move and adjust it. The dolly proved a much better way to go on the terrain we encountered. A move to the set-up, a few judiciously placed cupblocks, flats, and wedges by our efficient grips, and we were ready to shoot.

The Arri 300 configuration is basically the same as that housing the camera with 400' magazine. It is a solidly built, heavy-duty blimp, enclosing an Arri 35mm camera on a flat base, with the added capability of accommodating a 1,000' magazine and a 25-250mm zoom lens. Although rather heavy, we found it to be extremely quiet and quite easy to work with once it was mounted on a mobile base—a McAlister crab dolly in this case. Zoom and focus control cranks located on the camera access door on the left side of the blimp make it possible for the operator to follow focus or zoom while operating with a heavy-duty fluid head. Or, with a gear head, the operator can quick-set focus and zoom positions by eye for the camera assistant, which then allows the operator to devote full attention to following and framing the action.

The camera uses a 1,000' 35mm Mitchell-type magazine with a bellows mount adapter, housing a geared film drive, which fits to the camera body. The magazine is supported in the blimp, not by the camera. A heavy duty torque motor drives the magazine take-up belt, and the film takes up CW emulsion in.

Because we found the available rural household current to be unreliable, the camera, in the configuration we used, drew its 60 cycle, 110V AC power from a Glen Glenn rotary inverter which was fed by a 24V DC battery pack. The metered output was monitored by our production sound mixer. He had his hands full, as occasionally a Cine 60 would also be put on line for sound takes.

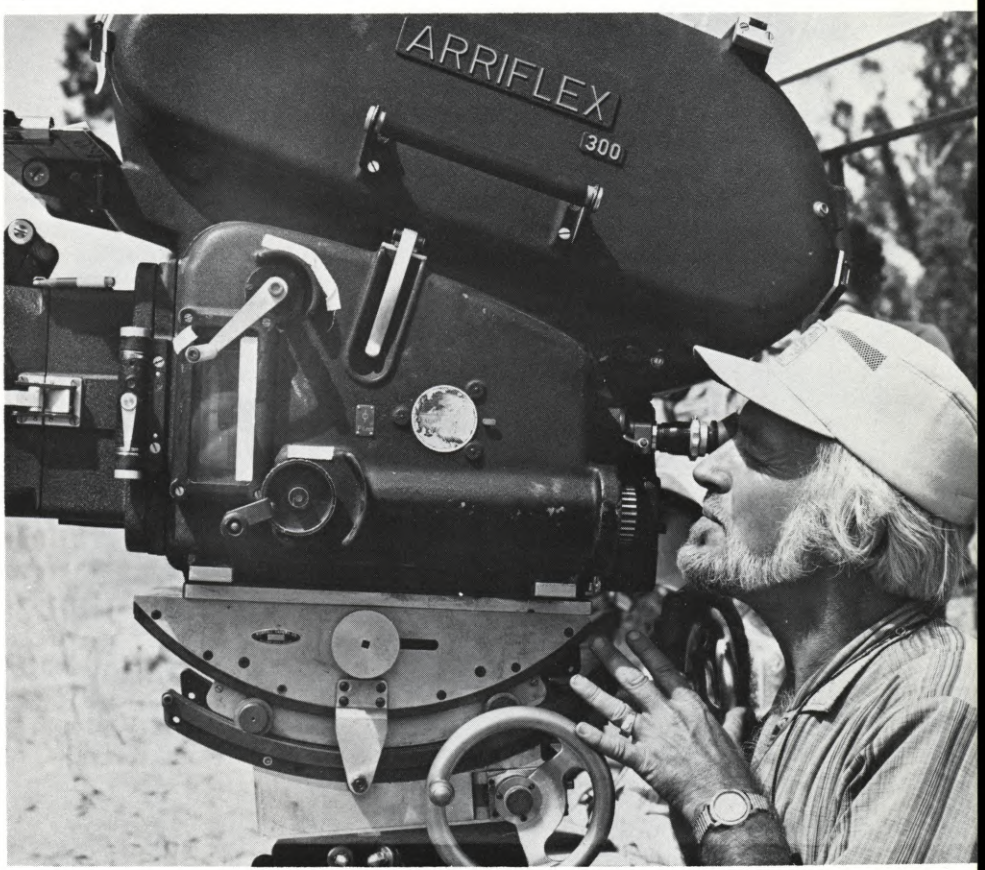
The Arri 300 proved most satisfactory. The particular Angenieux 25-250mm zoom lens we used—throughout its range—was one of the sharpest that I had ever worked with. And it was a real time-saver as well.

THE SOUND EQUIPMENT

In consideration of our limited budget, a two-man sound crew, rather cramped and cluttered interiors, and the rapid pace of our shooting schedule, we decided not to go with a mike boom. Instead, we used an extendable-type fishpole for interiors and exteriors. Fish-poling sound was a bit tough on our intrepid boom man, but it did the job and saved time.

Keith Wester, our production sound mixer, used a Nagra III sound recorder (two, when we added a Cine 60 for double-coverage of a scene), with a specially modified Sela four-channel mixing console.

Because of the rather high ambient noise level– ever-rustling leaves, very vocal barnyard animals, and the rather noisy generator—in our valley shooting site (which in itself amplified all noise), and because the mike often had to be positioned further from the action than would be ideal in order to clear the camera frame, particularly for long shots, Keith selected and used an Electro-Voice 668 microphone, which has outstanding noise-reduction characteristics, with wind-screen throughout the filming. His production sound came through sweet and clear, saving valuable post-production dubbing time.



Director of photography Bill Hines follows the action with the Arri 300 sound camera. Note zoom control handle above and focus control handle below on camera access door.

INTERIOR SHOOTING

Fully thirty per cent of "CLOVER GROVE" was shot in a rather large barn, with a small number of set-ups in Claude Raintree's rustic house nearby.

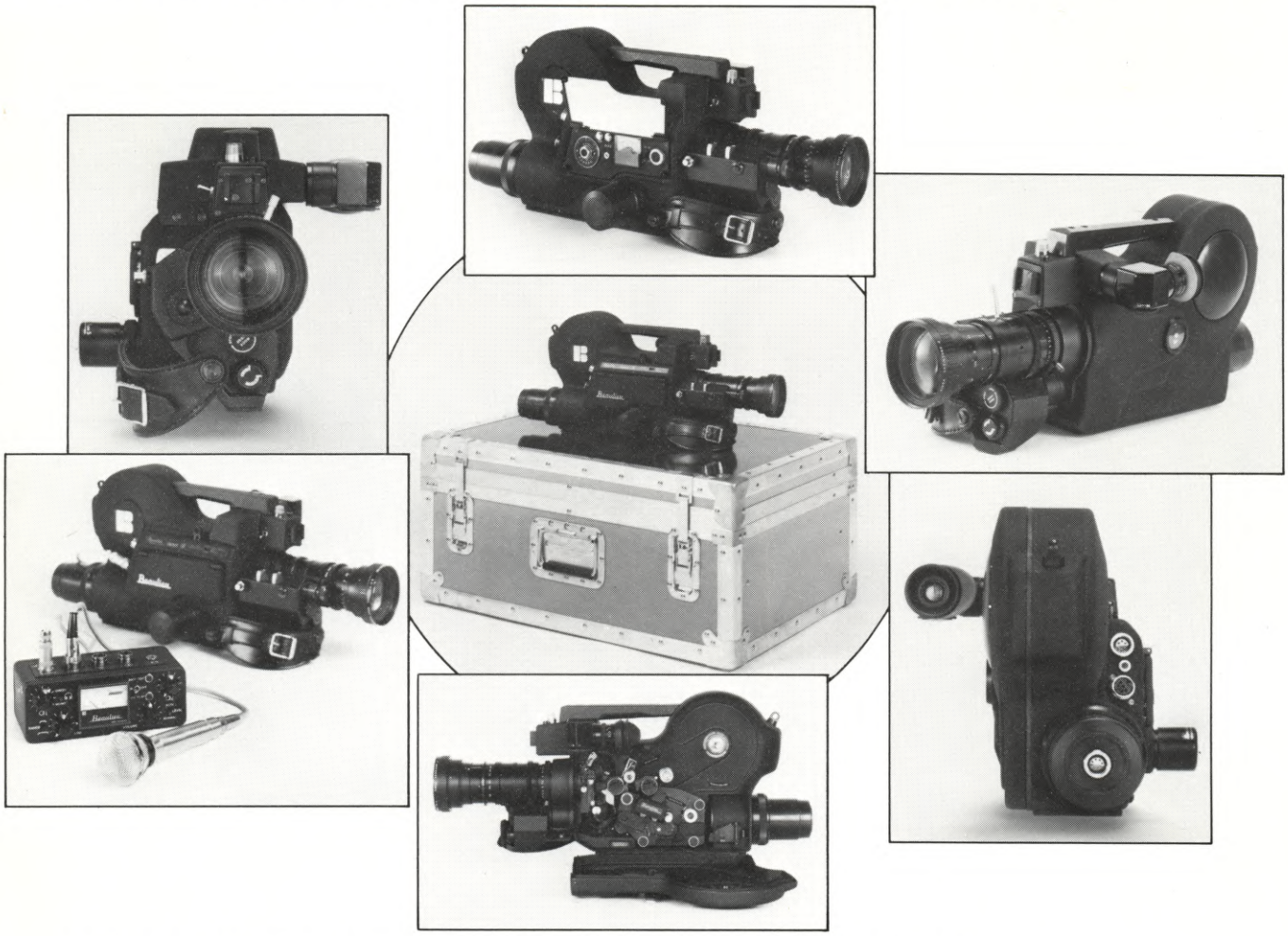
The barn interior was modified and dressed to provide a workshop area, a toy display area, an area for supplies and discards, a stall for a calf, and a storage area for fodder, farm tools, etc. The wings on each side of the barn interior were closed off by 4' x 8' aged-down sections of plyboard and masonite, which left 24' x 50', plenty of room for the main action area and, at the same time, minimized lighting and set dressing. A level 16' x 20' x ¾" plyboard floor was laid over the dirt in what was to be the workshop/toy display area in order to have a smooth surface for operating the mobile toys and to dolly the camera on.

In discussing electrical rigging with Craig Greene, the gaffer, we decided against hanging several chicken coops overhead, because of the effect that their weight might have on the barn structure, the potential hazard to cast and crew, and the servicing time involved. Bounce light from ground units appeared to be the most efficient way to achieve the ambient light level desired.

Overhead, the length and breadth of the interior action area, a 24' x 50' silk was rigged sixteen feet above the floor, stretched over a supporting grid of bailing wire. In each of the walled-off wing areas of the barn we placed five four-light FAY units (with four units in reserve) on high stands aimed up over

Continued on Page 456

NO MATTER HOW YOU LOOK AT IT...



BEAULIEU'S "NEWS 16" CAMERA IS QUITE AN IMPRESSIVE SYSTEM.

Beaulieu's "News 16" is the professional result of over three years of design, research and critical field testing by the engineers and technical experts of Beaulieu S.A.

A light weight, modular camera designed for both single and double system sound filming, the "News 16" offers:

- **Mirror Reflex Viewing** (the mirrored shutter always stops in viewing position)
- **Built-in Automatic Power Zoom and Automatic Diaphragm Control** (both with manual override)
- **Behind-The-Lens Gossen Exposure Meter**
- **Lens Interchangeability** ("C" mount)
- **Interchangeable Variable Speed Motor** (12-40 f.p.s.)
- **Automatic/Semi-Automatic Self-Threading of 200' or 100' daylight loads**
- **Choice of Sound Capabilities:**
  Single System module (to be used in conjunction with the Beaulieu amplifier unit)
  Double System Synchro-Pilot module (3 modes available—50 Hz, 60 Hz, or 100 Hz)
  Double System Crystal module (2 modes available—24 f.p.s. or 25 f.p.s.)

The modular construction of the camera permits instant and rapid changing of key parts (power supplies, motors, lenses, sound modules) without the requirement of tools. A full range of professional accessories (batteries, charging units, etc.) are available separately so that the cameraman is able to build up his equipment, as needed, to suit the requirements of any given shooting assignment. The Beaulieu "News 16" basic unit comes equipped with either an Angenieux 12-120mm or Angenieux 9.5-57mm zoom lens.

Full technical information on the "News 16" is now available.
For further details write to:

Hervic
CORPORATION
TECHNICAL PRODUCTS DIVISION
EXECUTIVE OFFICE: 14225 VENTURA BOULEVARD
SHERMAN OAKS, CALIFORNIA 91403

Considering a 12-120mm lens? Choose Canon's.

MACRO ZOOM LENS 12-120 FOR 16MM

We've got the one for superior performance. Created by Canon . . . famous for quality and precise optical know-how. Canon's Macro Zoom 12-120mm gives you a world of creative possibilities with its multi-point focusing, extreme close-up capabilities and high resolution. It was the first such lens to use fluorite.

Now you can own one. At a price that's very competitive. The Canon 12-120mm lens focuses to within .04″ of its front element. Even if it didn't it would still be your best buy in a 12-120mm zoom lens.

See it, price it. At any one of the exclusive franchised Canon lens dealers listed below. You'll have every reason to buy it.

Authorized Canon Dealers

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

Brooks Camera, Inc.
45 Kearny St. at Maiden Lane
San Francisco, Calif. 94108
(415) 392-1902

Calvin Cine-Equipment, Inc.
215 W. Pershing Road
Kansas City, Missouri 64108
(816) HA 1-1230

Camera Mart, Inc.
456 W. 55 Street
New York, New York 10019
(212) PL 7-6977

Cine 60
630 9th Avenue
New York, New York
(212) JU 6-8782

Victor Duncan, Inc.
11043 Gratiot Avenue
Detroit, Michigan 48213
(313) 371-4920

F&B Ceco, Inc.
315 W. 43 Street
New York, New York 10036
(212) JU 6-1420

F&B Ceco of Calif., Inc.
7051 Santa Monica Blvd.
Hollywood, Calif. 90038
(213) 466-9361

Adolph Gasser, Inc.
5733 Geary Blvd.
San Francisco, Calif. 94121
(415) SK 1-0415

Gordon Enterprises, Inc.
5362 N. Cahuenga Blvd.
N. Hollywood, Calif. 91601
(213) 985-5500

Helix, Ltd.
679 N. Orleans Street
Chicago, Ill. 60610
(312) 944-4400

Lloyd's Camera Exchange, Inc.
1612 Cahuenga Blvd.
Hollywood, Calif. 90028
(213) HO 7-7189

Photomart/Orlando
1504 McCoy Rd.
Orlando, Florida 32809
(305) 851-2780

Standard Theatre Supply
125 Higgins Street
Greensboro, N.C. 27420
(919) 272-6165

Gordon Yoder, Inc.
2840 Reward Lane
Dallas, Texas 75220
(214) FL 7-3045

Canon®

Canon USA, Inc., 10 Nevada Drive, Lake Success, New York 11040

DIARY OF AN AROUND-THE-WORLD CORPORATE FILM

A day-to-day record of the adventures encountered in a far-flung effort to glorify American blue jeans on film

By PAUL FILLINGER

Friday, September 29, 1972:

The official letter of agreement was signed with Levi Strauss International to produce a 15-minute film about their international operations. It would involve visiting ten countries to film major factories, typical retail stores and kids in the various countries wearing Levi's and doing their thing.

Earlier in the week, Mike Howard, International Marketing Coordinator, had called me and said that I had been selected for the job and to get started packing for an October 4 departure date. The whole selection process had been such a whirlwind affair that I had trouble adjusting to the possibility of a four-week around-the-world trip—now that it was official I was in a mild state of shock. My first feeling of elation over the upcoming adventure faded somewhat with worries about the many things that could go wrong: fouled plane schedules, lost or damaged camera equipment, x-rayed film, sickness, bad weather—typical worries for any film project but, in this case, greatly magnified by the extremely tight schedule which required delivering a finished film by December 18, the date for the Levi management meeting at which the film would be presented. I felt a tightness in the stomach that didn't go away for many weeks.

Monday, October 2:

I picked up my rented equipment—two portable Sun-Guns, a 10mm lens and a tripod case. I had planned to rent an Eclair ACL but decided at the last minute to use my own Bolex Rex 5 with its 12-to-120 Angenieux lens. Having made several films recently with an Arriflex, I was intimidated into believing the Bolex wasn't professional enough. I wanted something very light so it was a good excuse to get to know the ACL, taking my Bolex along as back-up camera. A friend pointed out the logic of sticking to a familiar, lightweight camera and forgetting status symbols. A very wise choice. I took along my editor's Bolex as the back-up camera. In addition, I took a Miller fluid-head tripod, motor, battery, Sony model 126 stereo cassette recorder and Shure 155 microphone. This sound system works for sync sound and is exceptionally lightweight.

Drove to Levi Strauss & Co. and submitted the final treatment for the film based on discussions and interviews the week before. Basically it was this: a montage of traveling shots for the introduction; factory shots; retail store shots; sync sound man-on-the-street interviews (cast in a humorous format); and an ending that focused on active kids doing their thing, giving a lyrical, uplifting feeling of kids around the world. Mike liked the plan and also liked the suggestion that we consider the possibility of re-editing the last section into a cross-cultural educational film for the junior high school level. (I had checked this idea earlier with Rex Malcolm at BFA, educational distributors in Santa Monica, and he had encouraged the idea.)

Tuesday, October 3:

Picked up 6,000 feet of 7242 from Kodak. This gave me the best ASA for poorly lit factories and also the ability to work outdoors with little or no sun. This proved the best possible choice and post-fogging by the lab reduced the contrast to the level of ECO film.

I teach part-time at California State University in San Francisco so a flurry of phone calls succeeded in lining up a substitute instructor, briefing him, handling all last-minute arrangements, and relaying final instructions to Ronald Chase, my editor. Ron would receive the film as I sent it back from each country and let me know what was working, not working and needed in the way of additional shots.

Wednesday, October 4:

My kids were happy to get out of school to see me off at the airport but didn't let me forget a previous promise to take them along on all future trips. The whole family had gone to Europe a few months earlier while I was completing a German television documentary. I explained this was a "scouting trip" in order to know where to take them next time!

With our ten cases of equipment, film, luggage, and overweight charges, Mike and I caught a 3 p.m. Western

The author, shown filming in Hong Kong harbor with Bolex Rex 5 camera and 12-to-120mm Angenieux lens. His comment: "Shooting in busy Hong Kong harbor posed some problems with 'stabilization'. Like it or not, we achieved a very fluid effect."

flight to Mexico City.

Thursday, October 5:

Met Levi people for breakfast. The general manager turned us over to his advertising agency, who thought we were putting on a fashion show. Mike went into action. (One of the conditions of taking this assignment was that someone in authority from Levi accompany me to take care of all the slip-ups, miscommunications, and many traveling details that could not be planned for in advance. Mike Howard was that person.) Little had we suspected that trouble would occur so soon. Mike had written, teletyped, and phoned ahead specifying precisely what we would be doing and needing. We learned early in the trip that you can't expect much help from the branch offices you visit—at least on such short notice. All that you should realistically expect is for them to know you are coming, hopefully make hotel reservations, and, if you're lucky, provide a car and helper or interpreter. Anything more, like lining up appropriate models or suggesting suitable filming locations, we found to be an unrealistic request. What is needed is an on-the-spot coordinator with authority, imagination, and great energy who can line up the whole thing on the spot. Mike had a knack for doing this. He understood my concept of the film, quickly learned my style and the kind of shots I was looking for, and was able to arrange everything. If every filmmaker could have such a producer . . .!

Friday, October 6:

Still in Mexico City—and the first factory. Yesterday had been confusing but fun with the models romping through the Alameda. Now came the rows and rows of ladies at sewing machines. I avoided long shots, worked near windows for side or back lighting, and used long lenses to throw foreground and background images out of focus. Faces, hands, machines, rack focusing, slow pans and zooms were used to avoid the possibility of the factory looking like a sweat shop. In fact, the factory footage turned out to be some of the most dramatic in the whole film, perhaps because I worried so much about these problems.

In the afternoon we visited the University to get some students in a campus atmosphere. Our student contact didn't show up so we collected kids and set up some "walking around" situations. Exhausted, we drove back to the hotel in our luxurious, rented limousine, waving and smiling at smaller cars and people waiting at bus stops, hoping to change the image of the rich from old and stuffy to young and friendly.

Mike Howard (left), Marketing Coordinator for Levi International, handled all arrangements and sound recording for the first half of the trip. Here the crew plans a shot with local models on grounds of Bangkok's Temple of the Sleeping Buddha.

Saturday, October 7:

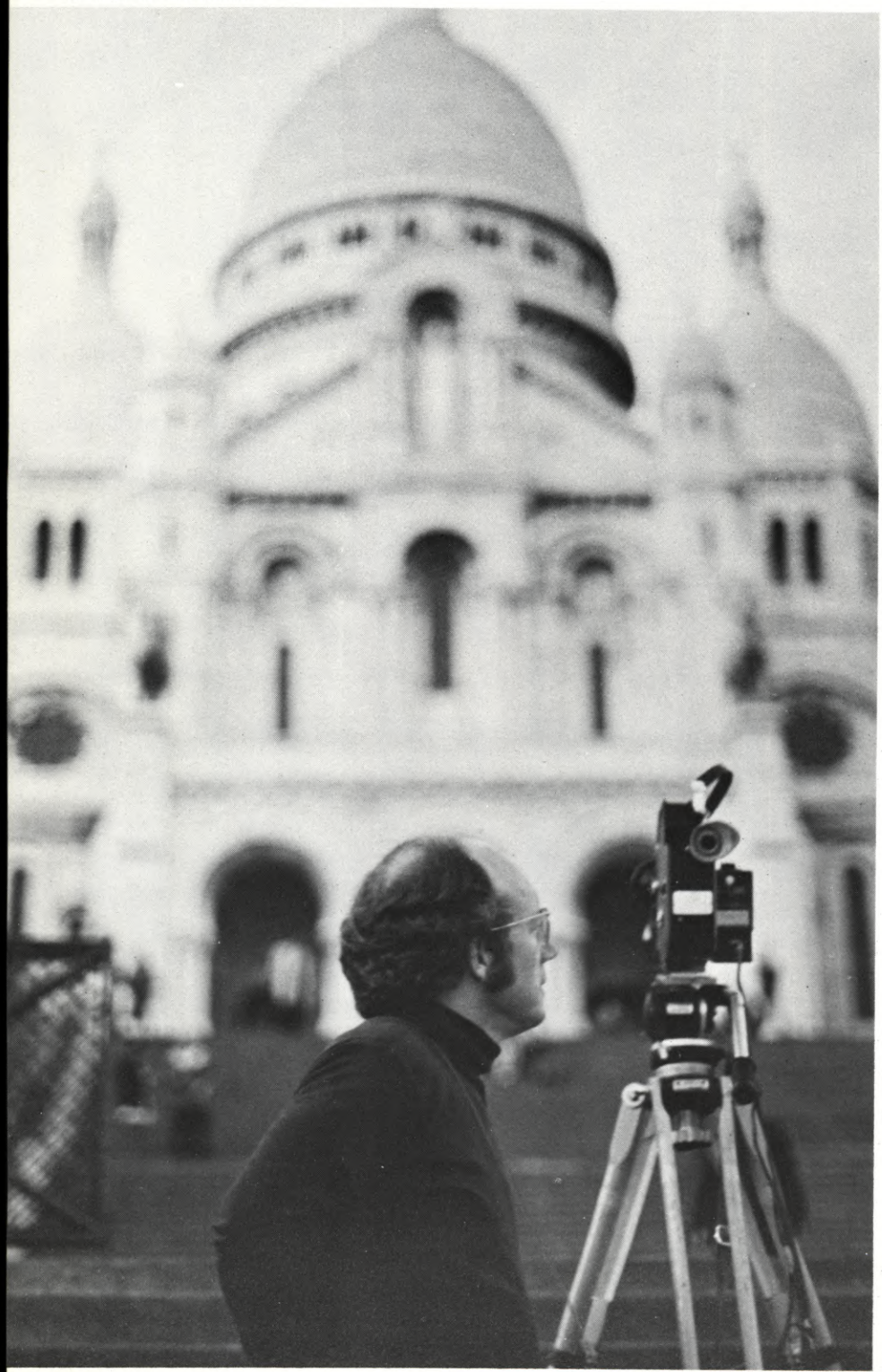
We met two Levi people for breakfast in Mike's room and recorded brief interviews about the local operation and the Latin American market in general. Then packed and left for the airport to catch a noon flight to Tokyo. We flew a long time before we looked out and saw Lake Tahoe—practically back where we had started. I thought about getting out. There had been a knot in my stomach since we left. Were the shots coming out

Matzu Yamamoto, marketing manager for Levi's Japan (left), directs models in Sensoji Temple garden in Tokyo.

or not? There was no way of knowing for sure—and there was no going back for retakes. By the time I would know how the film turned out I would be in Hong Kong or Sydney.

(The film shot in a particular country was sent by the local Levi office back to Mike's secretary in San Francisco, who forwarded it to the lab for processing. Then my editor would pick it up, review it, and select the parts to be workprinted. He was also to wire me as to how things looked. In this regard we had miscalculated. It was a week and a half later before I had any word as to the first footage I had shot. This lack of feedback nearly drove me crazy. If you're basically insecure and tend toward paranoia, you should have a lot of cheerful, constructive and encouraging phone calls, teletypes, letters and post cards coming from the folks back home. Otherwise you can imagine all kinds of conspiracies, mix-ups, and catastrophes taking place.)

The author lines up a shot in front of Sacre Coeur in the Montmartre district of Paris. Operating with only one other crew member, he managed to maintain a hectic shooting schedule throughout the world.



Sunday, October 8:

Flying to Japan you follow the sun, so it was only early evening when we landed in Tokyo, 17 hours later. However, because of crossing the international dateline, it was already the next day. We had VIP treatment through customs and never did know who arranged that. Upon arrival at the hotel, I decided to try a massage and that was one of the amazing experiences of the trip—completely legitimate, thoroughly professional, and practically medical in its scientific exactness. It's like checking in your old body and getting back a new one. It almost made up for losing a day.

Monday, October 9:

Breakfast with the local manager and marketing director. Planned the next two days. Shot retail stores in the old market and models in and around the Sensoji Temple. Back at the hotel, we interviewed several students about clothing habits of Japanese youth, ideas about social change, etc.

Tuesday, October 10:

Shot more kids doing their things—going to a carnival-type amusement park, walking through the streets and through modern department stores. That afternoon we shot mostly identification shots. It's hard to find anything that "says" Tokyo. But Japan was great: a delicate serenity, a mystical quality I'd like to understand better. Marvelous people.

Wednesday, October 11:

We recorded some statements by the marketing manager at the Levi office and left for the airport. Ten cases in a small Japanese cab mean you're sitting on and around a lot of luggage.

It was dark when we landed in Hong Kong. My geography knowledge of this part of the world was a bit fuzzy so I was constantly confused about where places were in relationship to each other. Fortunately, Mike had lived here for two years so was very much at home.

Thursday, October 12:

Breakfast meeting with the local manager and the marketing director, Albert "No Problem" Chan. Whatever our request or suggestion, Albert would smilingly say, "No problem," and arrange it. We shot retail store exteriors and interiors, general identification

shots and the Hong Kong factory.

Friday, October 13:

We met our models in front of the Bank of Hong Kong for some downtown shots, then drove to the Aberdeen Typhoon Shelter for a sequence of four kids taking a sampan ride. (In each country I tried to find an activity for the kids which would be natural, say something about the country, and give the visual dynamics I wanted for the ending sequence of the film.) The traffic was so bad that we only had 45 minutes to rent two sampans, film the sequence, and be back to the other side of the island by noon to catch the hydrofoil for Macao. We made it with seven minutes to spare.

It's an hour to Macao and a beautiful ride through the many islands. We were met, taken to lunch, and then shot the factory there, which is located across a 50-foot-wide river from mainland China. We wanted to show this proximity but without letting the border guards, 50 yards away, see the camera, since they are reputed to be very mean characters. When I was fully zoomed in on them, I wondered briefly what a bullet looks like when it is coming straight at the lens.

Saturday, October 14:

Met our models again in order to shoot closeups there hadn't been time for yesterday. We then drove around town for general atmosphere shots, had lunch at a restaurant on Victoria Peak, overlooking the entire harbor, and did some MOS sync interviews. Mike had meetings today with the Levi people so my helper here was George Chang, a California College of Arts and Crafts (Oakland) graduate with whom I had made experimental films years ago in San Francisco. He had recently returned to Hong Kong and is a struggling but highly talented filmmaker there.

Sunday, October 15:

This was our one "day off." I bought a still camera and gifts for the family before catching the plane for Bangkok. It was a MAS flight (Malaysia Airline System)—the finest airline we flew. Everything, in all respects, was of such a superior quality that we continually felt we were being mistaken for some world-famous dignitaries. What an introduction to this part of the world . . . of sensitive, cordial, gentle, beautiful, smiling people.

The flight took us over South Viet Nam and, knowing there were occupied areas below, and perhaps raging battles, it was disturbing how a mere 35,000 feet could remove one so far—and how quickly it was behind you. The setting sun made thousands of red ribbons of light on the many klongs (canals) around Bangkok as we landed.

Tim Van Beek (right), Levi's European Director of Advertising, and Fillinger set up for a sync-sound interview with a young lady in the red light district of Amsterdam. Tim was the European coordinator for the film and also recorded interviews.

Monday, October 16:

A breakfast planning meeting with the local manager and his advertising account executive. We discussed appropriate activity for the models. I suggested horseback riding, tennis, jogging, etc., and was kindly informed that, in Bangkok, kids look for *in*activity in their spare time. The most popular pastime is going to air-conditioned movies. When I walked out of our hotel I understood. It must have been 90 degrees with the same humidity, and this was the cool part of the year! I could see that any outdoor shooting in Bangkok was going to be accomplished

Continued on Page 485

REPORT FROM THE UCLA FILM-MAKERS

Graduate Cinema students of the University of California at Los Angeles talk about changing trends in their production, their future plans and their attitudes toward Hollywood

By TOM BIRNS

With the lowering of the age of majority to 18 in mind and the new general emphasis across the country on youth in business, politics and art, Editor Herb Lightman asked me, as a writer for the UCLA Daily Bruin, to talk with aspiring film-makers on campus to determine new trends in their films, and changes they would like to see in the motion picture industry.

I hiked up to the north part of campus where the various art departments are situated amid a green landscaped park and surrounded by *avant garde* sculptures and fountains. Also located in this inviting spot is Melnitz Hall which houses the film classes, sound stages, and editing rooms. I looked up Derek Scott and Jim Morrison who run the technical office and with their help was able to contact some of the more outstanding graduate film students.

The first student I located was Don Paonessa. A bearded, intense looking fellow, I found him tucked away in a tiny editing room working diligently on his thesis film. I stuck my tape recorder in the middle of his rewinds and got him talking by asking his impressions of the latest trend in student films.

"When I first started here the big thing was drug-related films and from that there was a trend toward the sexually-liberated film where they got involved with a lot of sex on the screen. Now, it seems that there's a trend toward the individual—the individual involved in his society and his inability to remain an individual. I think it relates a lot to what's going on in society. There's a good deal of social consciousness; there's an attempt to be 'relevant.'

"It's interesting that what happens at

Student cast and crew assembled on UCLA sound stage to shoot night-club sequence for Master thesis film, "THE NOSE". The UCLA Motion Picture Division complex is located on campus in Melnitz Hall and includes three sound stages, in addition to full television production facilities, sound recording and mixing facilities, cutting rooms, etc.

(LEFT) Student sound technician fishpoles microphone during shooting of dance sequence in a computer center for thesis film. (RIGHT) Cameraman Vince Dyer swings in a suspended tire to film "pendulum" shot for chase sequence of "THE NOSE". Some student films might be classified as "far-out experimental", but most dramatic and documentary cinema projects deal with contemporary real-life situations.

UCLA sort of precedes by a year what the industry picks up on. Specifically, a year before Hollywood ever attempted to get into drug films they were being made here. And when it was a dead subject here all of a sudden there were six or eight drug films ready to be released in the industry. Generally you could say that if you look at what's being done in the film schools today, those films will probably come out in the industry for the general public in about a year.

"I've never really been involved in tape. I don't like tape. There's something about film; it's tactile, it has a look, a feel about it that hasn't been achieved yet on tape. For soap opera tape is the medium; it's cheap—you can see it right now. I like film. I like the quality, the look it has and I don't think I'd be willing to give that up for tape. But who knows, they may perfect tape."

Paonessa paused to look into his Moviescop and I asked him about his future and the type of films he is interested in making.

"I'm interested in traditional narrative films, dramatic films. I've tried to be involved only in the type of films that I want to make when I get out of here. But making that break from the University to the industry is a very difficult one to make because the people in the business have had very bad experiences with young film-makers.

"A couple of years ago they were on this big youth trend and they employed a lot of young film-makers to give them a chance to make feature films. What happened is that most of them bombed, so they got scared and they stopped. Now it's almost impossible for a first-time director to get a job.

"The way to go now, as I see it, is to write screenplays and hope to get into the industry on a low-budget level. Or else write until I have the power of negotiation—so that I can have enough leverage in dealing with the industry—to turn out enough product in terms of screenplays so that I can demand certain things."

Graduate students at UCLA who are working towards the Master of Fine Arts degree have a heavy workload to complete over a two-year period. They are required to pass nine courses and complete a thesis consisting of a feature-length motion picture, a one-hour television script, or an equivalent amount of writing in fictional or documentary form.

The courses cover such subjects as: European and American motion picture history, film structure, seminars in documentary and fictional film, broadcast media, educational television, animation, television production, and the completion of two film projects, including writing, production and editing.

Penelope Spheeris, a tall effusive brunette who looks mature for her 26 years, worked in the technical office at UCLA while attending the film school. She was finishing up her thesis film for her Master degree at the time of this interview.

"It really upsets me that film-making has to be a troublesome endeavor," she commented, "I would like to be able to come to a point where the process of

Cameraman Derek Scott, who also heads the UCLA Cinema technical office, sets lights for a student production. Studio lighting is taught on the sound stages of the University, though most student productions are filmed on location.

(LEFT) Cameraman John Sherat moves into position for an unusual "dolly" shot, with Eclair NPR camera mounted on a raft, during filming of UCLA production, "I DON'T MEAN MAYBE". (RIGHT) Cast and crew of "I DON'T MEAN MAYBE" making shot in the desert near Death Valley for race to the swimming hole sequence. Actors in the film doubled as crew members when off camera.

film production is fun and an easy situation and not always very uptight. You have to depend on equipment always working and the weather, both of which are very unpredictable things, and so, for the most part, a lot of it is out of the director or producer's control. Still, if you can set yourself into a situation where you can work with people with whom you really have a lot in common and get along with them it makes it a lot easier.

"The films I've worked on for a major production company or independent feature film production companies have been such that there are a lot of people who are in it only for the money and not for any creative release. It's like working in a bank or something—I don't like that attitude in film-making.

"I'm extremely fascinated with recreating the real situation. To me, it seems that there is more challenge in that than there is in total dramatic film-making and so my films, thus far, have been an integration of the two techniques. I've called them pseudo-documentaries or semi-documentaries because it takes a hell of a lot of film to shoot a documentary. Since a student doesn't usually have enough money, what I do is find a situation that exists in real life and, instead of going out and documenting that situation, I translate it into drama. It's sort of a Peter Watkins approach, only not so far out.

"I want to do something that hasn't been done before. I think that to be original is a normal human drive. The approach that I have is rather unique. Now I'm not saying that to make myself sound wonderful, but it's experimental, it's fresh, and it's *avant garde*. You're not competing with something that has already been accomplished—you start out defeated if you are. Hollywood is dying for a new innovative technique.

"I went around with a script in my hand to maybe thirty or forty independent film producers in Hollywood just trying to get money for a feature film. The film ultimately became my thesis film because I couldn't get the money and I learned it's very hard to approach people with a new kind of idea. If you're a woman it's especially difficult and you start out batting zero.

"My thesis film is a story about two rather unconventional people who are caught up in a Hollywood underground scene and hopefully it says something about the entire society being extremely degenerate."

Students filming an Intermediate project at UCLA line up a shot on the sound stage. (Left to right:) Brogan de Paor (Director), Charles Morrison (Cameraman), Francisco Martinez (Production Assistant), Richard Pelter (Actor) and Larry Mirisch (Actor).

Production manager and lecturer at the film school, Hugh Grauel (pronounced "growl"), is particularly excited about the films being made at UCLA. According to Grauel, some student productions manage to draw Hollywood support, such as "LET'S EAT", a film about the eating habits of Angelenos produced by Max Reed with a grant from Mirisch Bros., and "FOR THE LOVE OF THE MOON", a feature produced by Michel Leviant, with music by Sandro Zaninovich and made with grants from Henry Mancini for scoring and Charles Boyer for acting.

A third picture by his proteges, of whom he is proud, is a "sensitive triangular love story about three young people—a Korean girl, a Caucasian girl, and a black man," produced by Evi Hong, a Korean student.

Grauel predicts a continuing interest in ethnographic and documentary films among the 250 graduate students enrolled in the Theatre Arts Department.

Howard Lester, a 27-year-old professor at the film school, seems to be almost a legend around the film depart-

Continued on Page 447

Announcing
a revolutionary new helicopter mount, right out of the space age:

HÉLIVISION II

A smash hit at *Photokina '72* in Cologne, the sleek new HÉLIVISION II intrigued professional and amateur cinematographers from all over the world. Designed to "float" at the touch of a finger, this unique system seems to defy gravity in achieving a "weightless in space" effect which results in new freedom, ease of handling and ideal operating control. With pressure of only one gram, an operator can float the entire camera-lens system in any direction while keeping the camera absolutely stable, free of movement or vibration in any position with no outside influence.

FERCO believes that HÉLIVISION II, manufactured in Sweden by Hedén Engineering, will revolutionize helicopter shooting. Just think about it: A mount that keeps the camera almost independent of its environment and will *hold a given position regardless of the attitude or vibration of the helicopter.* A mount that is *lightweight and versatile* . . . adapting easily & quickly to small, inexpensive helicopters as well as their big brothers. We invite you to write us for more specific details or come in for a free demonstration.
419 W. 54th St., New York, N.Y. 10019 (212) 581-5474

NOW AVAILABLE AT FILM EQUIPMENT RENTAL COMPANY, EXCLUSIVE EAST COAST DEALERS FOR HÉLIVISION II.

The New CP-16/A (with Crystasound).

RADIO 970
POST OFFICE BOX 1000

WAVE
LOUISVILLE, KENTUCKY 40201

TV CHANNEL 3
(502) 585-2201

October 6, 1972

Mr. Norman L. Bleicher
Operations Manager
Victor Duncan, Inc.
11043 Gratiot Avenue
Detroit, Michigan 48213

Dear Norm:

Thank you for your letter of September 13, 1972.

You mention four areas for information relative to news work, using the CP-16/A, and they are as follows:

1. I feel that the CP-16/A is the best news camera on the market today. All of our news reporters feel the same way. It is extremely portable and we are able to shoot pictures much as we do with our Bell & Howell or Bolex cameras.

   I have designed a small "U" shoulder pod of aluminum, padded with rubber, for use with the camera. The light weight of the camera, "U" pod and magazine make for quick and easy shooting, with comfort and ease for the cameraman as well.

2. As to use under adverse conditions, the camera has performed very well in inclement weather and I see no reason why it should not be the same in the winter as in the summer.

3. Service has been the best. Both you and Cinema Products Corporation have been in close touch with us and we are very pleased with the quick service we are getting.

4. News of Interest: In addition to the shoulder pod, I have installed a Sennheiser MKH-815 shotgun microphone, with a shock-proof mount, on top of the CP-16/A camera. The camera is so quiet that the 815 mike does not pick up any camera noise. With no cables and no power pack to get in the way or restrict your movement, the cameraman can really move in and around, getting the right position to get the best picture. He becomes a part of it all.

The enclosed photographs may be of some help to explain the "U" pod and the shotgun mike. The cameraman is Larry Sales, a reporter here at WAVE News. The other guy holding the camera and mike happens to be me.

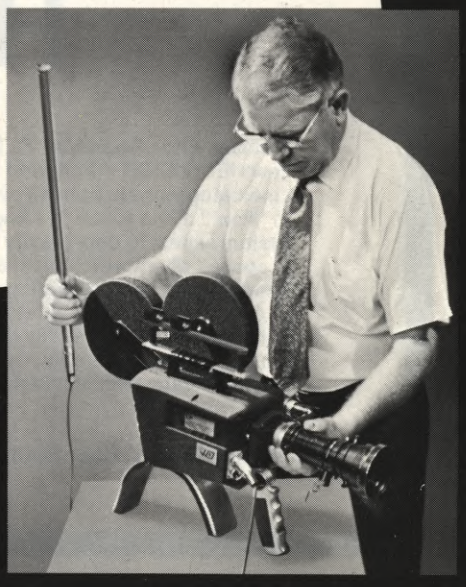
In summing up, I am happy to say that we are very pleased with our two CP-16/A cameras (even the price) and I am looking forward to getting another in the very near future.

Sincerely yours,

Edward E. Thompson
Newsfilm Director
WAVE-TV

EET:jk
Enclosures

ORION BROADCASTING, INC.
LOUISVILLE, KENTUCKY WAVE-AM-TV
EVANSVILLE, INDIANA WFIE-TV
GREEN BAY, WISCONSIN WFRV-TV
ESCANABA, MICHIGAN WJMN-TV
CEDAR RAPIDS-WATERLOO, IOWA WMT-AM-FM-TV

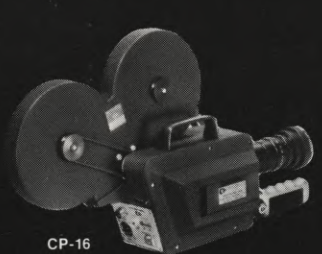


Mr. Edward E. Thompson,
Newsfilm Director,
WAVE-TV

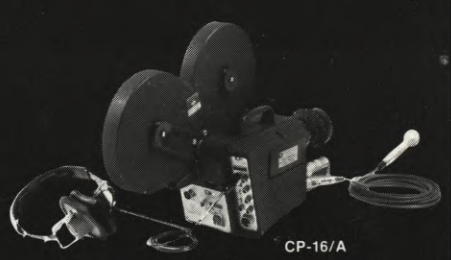
A Cameraman's Kind of Camera.

Mr. Larry Sales, TV-Newsfilm Cameraman, WAVE-TV

To arrange for a demonstration of the all new CP-16/A (with Crystasound recording system) or CP-16 cameras, contact your local professional sales/rental dealer.



CP-16



CP-16/A

For further information, please write to:

cinema products CORPORATION

Technology In The Service Of Creativity

2044 Cotner Avenue, Los Angeles, California 90025

Telephone: (213) 478-0711 ■ Telex: 69-1339 ■ Cable: Cinedevco

BUILD YOUR OWN EDITING TABLE

A do-it-yourself project for low, low-budget film-makers and impecunious cinema students said to result in editing facilities (almost) like the big boys have

By SAM WATTS

It always comes down to money, right? And no matter how much creative genius flows from the filmmaker into his work, if there's not a good bit of cold cash backing it up, all is for naught.

These days, however, many independent filmmakers have given up dreaming of a professional lab equipped MGM-style. Instead, they're taking a long, hard look at the sophisticated stuff and duplicating it at a fraction of the cost.

Many do-it-yourselfers have found this approach lends itself most readily to editing equipment. When three young filmmakers recently set out to beat the high cost of editing and synchronizing film and sound tracks, they first reduced one of the expensive models down to its mechanical essence, and let their imaginations take it from there.

The result is an editing table which could well be the filmmaker's dream come true. It performs with the same degree of proficiency as the professional tables, sacrificing only a little of the automated convenience and a lot of the cost.

All the editing equipment fits into—or on top of—a large, steel office-type desk. This proved to be an ideal framework because, aside from its sturdiness, a desk has the built-in advantage of drawers—a real bonus in any crowded workroom. Also, a desk like this can be picked up fairly cheaply by any conscientious bargain hunter.

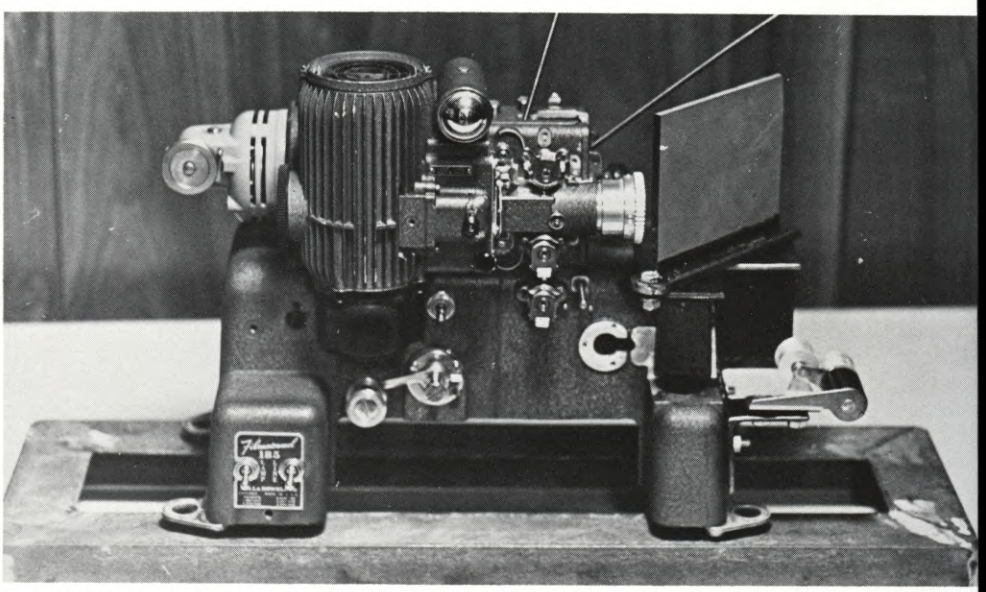
The top of the desk is rigged-up with the conventional visual editing equipment—two rewinds mounted on either side of the desk move film through a small Moviescop viewer. A splicer sits beside the viewer.

After this point, however, convention gives way to hard work and ingenuity. What the designers were after was a table that could not only edit film, but also synchronize sound tracks. Fitting a synchronizer into the system, they discovered, would be no problem. The real hang-up would be moving both the mag-tracks and the film simultaneously, and at a constant speed.

The answer they finally decided on was an outside power source. After a good deal of trial and error, a quick survey of their own equipment solved the problem.

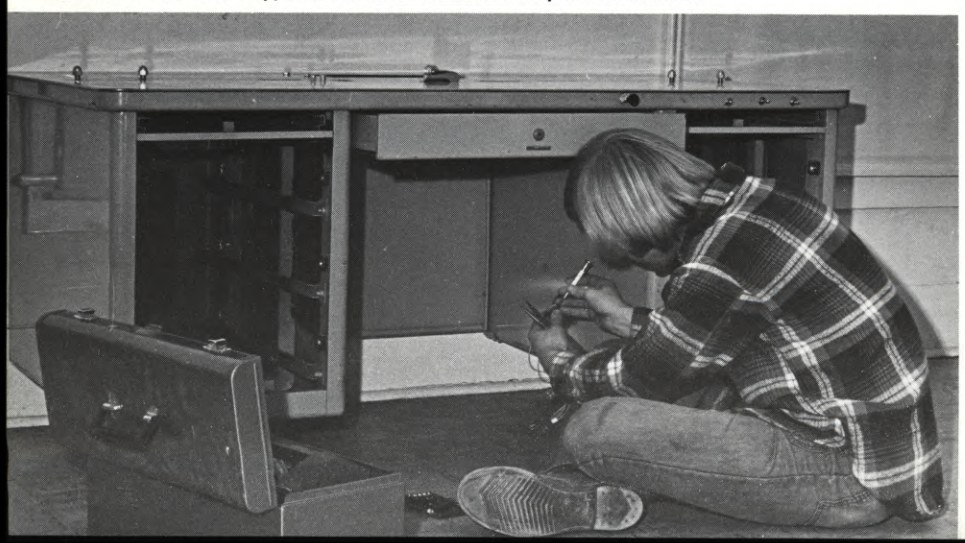
At the heart of this do-it-yourself editing table is a not-so-slightly modified Bell and Howell 16mm sound projector. Innumerable hours were spent pondering over how to tie together an unwieldy combination of sheet metal, gears, motors, pulleys and light bulbs into a simple (!) unit. This unit had to be capable of driving film through a viewer big enough to actually work with, pulling magnetic track across playback heads, and keeping the two in sync at 24 frames per second. But even the slowest thinker eventually feels the pang of the realization that someone has already solved the problem—and has done it a lot cheaper than you ever could.

It doesn't take long to notice that the most expensive thing about those professional editing tables—other than



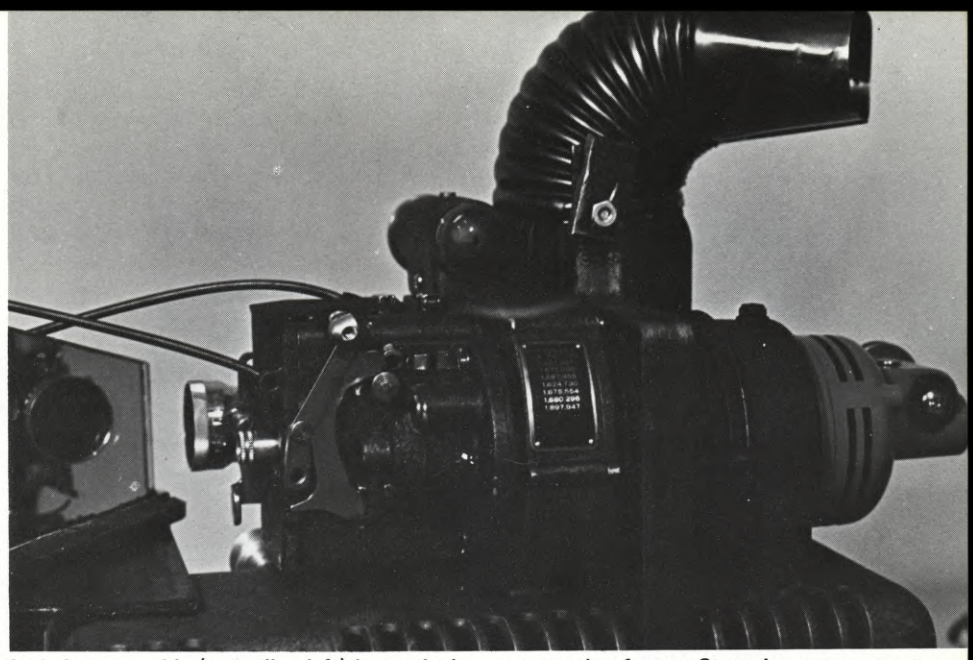
The modified projector is mounted on a support brace. Note that directly below the lens, the optical-sound component has been removed. An adjustable mirror, mounted at approximately a 45-degree angle, helps transmit the image to the large screen.

A steel office desk provides the framework for this low-cost editing system. The three switches on the desk-front will control the projector, lamp and direction. The round, black knob is connected to a choke-type cable which activates a stop-action control.

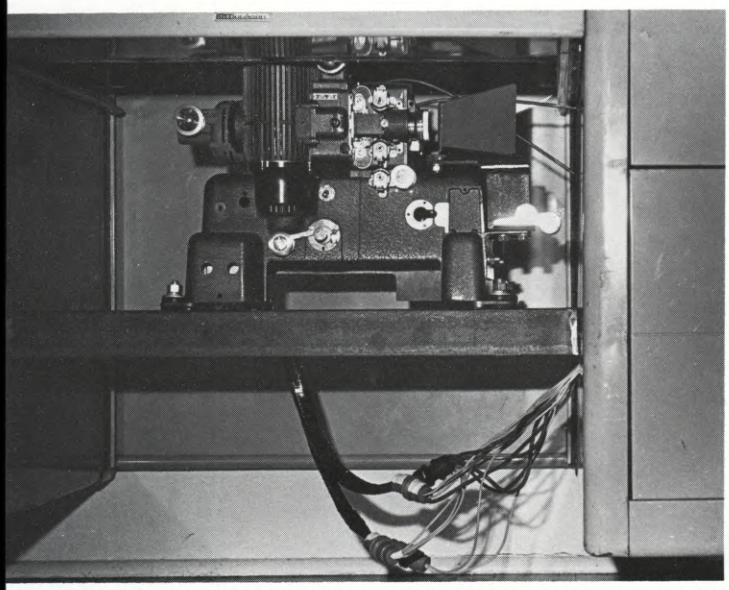


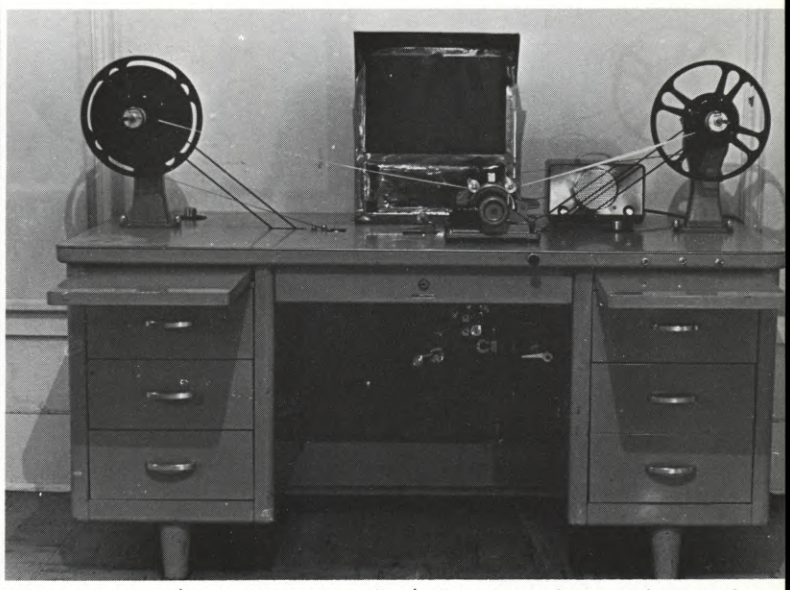
their slick, efficient-looking packaging—is what you can't see. All those synchronous motors, relays, shuttles, rollers, and assorted paraphernalia that make the damn thing *go* are what run the price up. But since it's going to be hidden anyway, and since by its nature it has to do basically the same thing when put to normal use, there's no reason why the economizing filmmaker can't drop an inexpensive pre-assembled unit (namely, a projector) into his editing table.

Once the decision is made to use a projector as the mechanical link between raw film and mag-track and the edited product, there are three main considerations: 1) the direction in which film and mag-track move across the table, 2) getting to the projector to thread the film; and 3) ease of dis-assembling for later modifications or just for moving the equipment around.



A choke-type cable (extending left) is attached to a stop-action framer. Stovepipe acts as a vent for the lamp, directing heat away from the tabletop.





(LEFT) The projector is mounted into place under the desk. Quick-disconnect cables (the type used in trailers) allow the projector to be moved easily. (RIGHT) The finished table allows the editor to match sound tracks and film.

Practicality dictates that the film comes off the reels and moves across the table from left to right. When this simple procedure is followed, images tend to be right-side-up and the action looks the same as the cameraman saw it.

With this requirement in mind, and considering the second one of accessibility, the result is that the projector must be operated in a somewhat unorthodox manner. Since, on the model used, the busy side of the projector is on the left, the lens must point to the right side of the desk in order to expose the drive sprockets for threading.

A moment of reflection at this point will suggest to most observers that film travel from left to right in a projector

Continued on Page 460

Rewinds are in reverse position in order to match the synchronizer and to connect with the projector. A drive cable extends through the slot in the tabletop to the projector below.

intercine

editing and synchronizing console

Model 813
16 mm / 35 mm Combination
NO MODULES TO CHANGE

the console with superior qualities

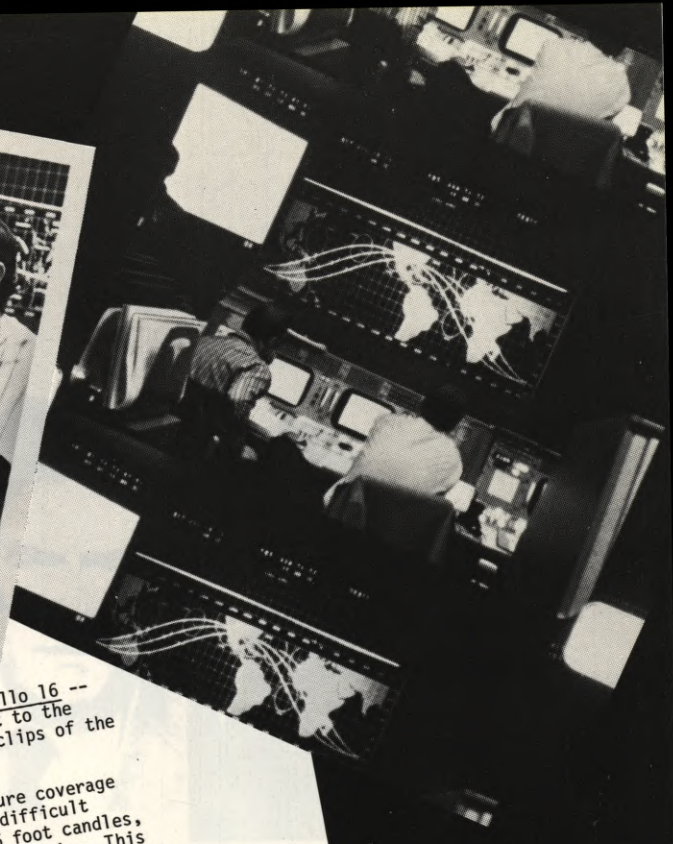
- Brightest picture ever • Solid state 10 W amplifier
- Super sound • Single frame viewing
- Exceptionally quiet • Digital or mechanical counters
- All driving rollers are ball bearing
- Unlimited passes without damage to film

Other models available, for information and price write:

intercine U.S.A.

3259 Prospect Street, NW • Washington, D. C. 20007 • (202) 337-0707

MADE BY "INTERCINE UNIVERSAL" MILANO, ITALY • DISTRIBUTED BY "INTERCINE U.S.A."



Mr. Sam Getzoff
Eclair Corporation of America
7262 Melrose Avenue
Los Angeles, California

Dear Sam:

Enclosed are some production stills, shot while making Apollo 16 -- "Nothing So Hidden ..." as part of our contractual support to the Manned Spacecraft Center. We've also enclosed some film clips of the Mission Control Center at Houston.

In providing all Mission Control documentary motion picture coverage during manned spaceflights, our cameramen operate under difficult conditions. Besides an average illumination level of 16 foot candles, all footage must be shot on an absolutely noninterference basis. This is one of the reasons we went to the Eclair NPR early in the game: there is no extraneous noise to distract the Flight Director or Flight Controllers. We've shot under the most critical situations, without a single complaint.

Because of the noninterference rule, shooting sync sound on Apollo 16 proved particularly challenging. We rigged a Sennheiser shotgun microphone directly to the side of the NPR, connected to special circuitry we built to remote all audio and sync to the sound man 75 feet away -- leaving the cameraman unencumbered. Most NASA people didn't even realize we were shooting sound!

On the recent Apollo 17 mission, we used three NPR's to provide the same kind of coverage, with equal success. Thanks, to a great extent, to the reliability, flexibility and remarkable silence of our camera equipment.

Sincerely,

William W. Robbins
Vice President
NASA Motion Picture Production

creators in Audio-Visual communications • EXCELLENCE *is our difference*

Quite another sort of voyage took place during recent Apollo missions. The setting, Mission Control in Houston. The environment: low light levels; tight quarters; tense subjects...and silence an absolute requirement.

Filming with a condenser microphone actually mounted on the camera, A-V Corporation's professionals moved rapidly, inconspicuously—recording the activities and emotions of NASA's Flight Director and Flight Controllers. Running thousands of sync-sound feet through their NPR's in the most critical situations without a single complaint from Mission Control. More important, the capabilities of A-V's crew and its cameras translated the drama of space fight into first-rate documentary cinema.

If flexibility, reliability and utter silence are important to the way you shoot, you owe yourself more knowledge of the NPR. Ask to see one at your Eclair dealer's...or send for our fact-filled brochure to Eclair Corporation of America, 62 West 45th Street, New York 10036 (212) 869-0490 or 7262 Melrose Avenue, Los Angeles, California 90046 (213) 933-7182.

filming new frontiers **eclair** Corporation of America

the DELPHI BUREAU

Title Design
recently completed for
ABC Television

James Schmerer, producer

Thank you Mr. Bevins—

SOUTHERN FILM SERVICE 14 SOUTH BUMBY AVENUE / ORLANDO, FLORIDA

MAILING ADDRESS: POST OFFICE BOX 3162 / ORLANDO, FLORIDA 32802 / TELEPHONE 305 / 424-0215

October 30, 1972

Arriflex Corporation of America
25-20 Brooklyn-Queens Expressway
Woodside, New York

Gentlemen:

This is definitely not a letter of complaint, but there seems to be a deficiency in your marketing procedure that you may not be aware of. Recently, I needed a good recorder but was forced to shop "price" first, so I bought your ARRIVOX-Tandberg instead of its Higher Priced Competitor.

Honestly, your advertisements really don't tell how great the ARRIVOX-Tandberg recorder is. Your Designer-Engineers did their job wonderfully well, but the Marketing people are keeping all of its improvements over the H.P. Competitor a secret!

To me, the ARRIVOX-Tandberg has at least 8 definite improvements over the H.P. Competitor:

1. The reel holders are part of the shaft - no more knurled knobs or rubber holders to loose.
2. A footage counter - what a time saver!
3. A limiter control on all three inputs.
4. A speech-music filter on both mike inputs.
5. The lighted VU meter. And information on the meter can be read easily - no magnifying glass needed.
6. All controls, inputs and outputs are on one panel - no cables dangling from the three sides of the recorder.
7. AC Adapter can be put in battery compartment - cannot be lost, dropped, or forgotten.
8. Built-in power supply for condenser mikes - saves money on mike purchase and eliminates another article that could be lost, dropped, or forgotten.

Some of these improvements may seem minor, but because of them, the ARRIVOX-Tandberg allows the soundman to become more efficient, which means better sound at less cost.

After working with two models of the H.P. Competitor, its a pleasure to use the ARRIVOX-Tandberg. Why don't you tell more about it.

Sincerely,

Ralph Bevins

Ralph Bevins
Director-Producer

Continued from Page 376

fast/slow motion/stop action of 570 frames, is now available from Moxon Inc./CTS Division, Irvine, California for instant sports replay, record storage, mug shots, race track photo finishes, monitoring hospital operations, missile launches and related moving or single frame applications.

Designated the Model 9108, the unit is housed in a table-top or rack mounted chassis containing a constant contact recording/playback head, high fidelity recording disc and solid-state electronics.

The simple-to-operate instrument employs front panel controls (engraved with appropriate function) that select same speed recording and playback as well as fast recording and slow playback or vice versa. This enables a wide range of effects to be achieved. The record head position (frame number) is shown on a seven-segment readout.

Recording is controlled by setting the HEAD switch to ON and pressing RECORD INTERLOCK and RECORD. The 1 TRACK RECORD switch permits changing data recorded on any frame, one frame at a time. Recording may be made over existing recorded data or by pressing the ERASE before RECORD.

Playback is initiated by pressing PLAY. STEP selects one frame at a time, while spring-loaded REVERSE switch temporarily changes playback direction. (Long-term direction changes may be set with a FWD. REV. switch.) Holding a single frame for viewing is controlled with FREEZE. STOP returns the disc to frame 0.

Rack mount dimensions are 19" W x 8-3/4" H x 18-1/2" D while the table-top version is 17" W x 9" H x 34" D. Weight is 64 pounds.

Price: $18,000.00 depending on options.

Delivery: 60 days A.R.O.

Direct inquiries to Mr. Marshall Wise, V.P.; Moxon Inc./CTS Division; 2272 Michelson Drive; Irvine, California 92664. Phone: (714) 833-2000.

•

ECLAIR ANNOUNCES LONG-AWAITED SUPER-16 ACL CAMERA

Eclair Corporation of America today announced the availability of its well-known ACL camera in the Super-16 format. Using an image area of 91 square millimeters (aspect ratio 1:1.66) as opposed to 76.6 millimeters (aspect ratio 1:1.33) for the conventional format, the camera provides almost 20% more image area. This larger image size allows significant economies through the use of 16mm equipment, while providing crisp, clear blow-ups to the 35mm wide-angle format.

Ready for immediate delivery, the Super-16 ACL is available in a package consisting of camera head, motor, battery, power cable, battery charger, 360° rotating eyepiece, two quick-change 200-foot super-16 magazines, deluxe Supol handle (containing 2 filter holders) and deep flotation case for a list price of $8495.

For further details, contact Mr. Eric Falkenberg, Technical Executive, at the address below.*

*Please Note: Eclair's East coast office is now located at 62 West 45th Street, New York, N.Y. 10036. The new telephone number is (212) 869-0490.

•

TIFFEN INTRODUCES PROFESSIONAL SHOW/CORDER

An audio visual 2-track Show/Corder AV7200 has been announced by Tiffen Optical Company. Used to synchronize voice, music or sound effects to slide shows, it is ideal for use by sales departments, audio visual staffs in schools, libraries, sales promotion firms, or by professional and amateur photographers.

Unique controls of this new Tiffen model enable fine focus and forward and reverse cycle control of the projector right from the Show/Corder.

Sound Mixing is another special feature. Voice, music, and sound effects can be recorded, plus an electronic signal for automatic slide changing. It also has an individual channel erase—allowing sound or signal to be erased or recorded from tape separately.

Other features include a digital counter, automatic level control with manual override, manual input volume control, input monitor switch, and slide dials in place of the rotating type. The Model AV7200 Show/Corder also has a unique electronic signal (100 Hz) that keeps the projector in perfect sync, with output jack for an external speaker.

Tiffen's Show/Corder AV7200 has transistorized circuitry, and a 3" x 5" oval type permanent dynamic speaker. It is equipped with a projector connecting cable for Kodak Carousel Projectors. The complete kit also includes a direct recording (radio/hi-fi patch cord), AC power cord, earphone, remote microphone with carrying case and stand, a blank C-60 cassette, and four "C" type batteries. Connecting cables for Airequipt, Sawyer, Minolta, and Nikon projectors are available.

Completely portable, the Tiffen Show/Corder AV7200 is 9" x 8-7/8" x 2-7/8", and weighs only 5-1/4 lbs. The complete kit has a suggested list price of $159.50.

For further information, contact: Tiffen Optical Company, 71 Jane Street, Roslyn Heights, L.I., N.Y. 11577.

•

NEW HITACHI MEMORY VISION UNIT BREAKS TIME BARRIER

A highlight at the NAVA Show held recently at the Albert Thomas Convention and Exhibit Center was a working prototype of Hitachi's newest development in the "freezing" and storing of TV frames.

Self Contained Control Center

The new unit, titled Hitachi Multi Channel Disc Memory, is basically a compact, self-contained control center weighing only 22 pounds, that can be used with any video signal source such as a TV camera, off-the-air broadcast, VTR or VCR. It will record, store and retrieve up to 15 different image frames spaced from 0.1 to 17 seconds apart in color or black-and-white.

All Solid State Unit "Goes Back In Time"

Unlike other "frame-freezers" that can only record and store images "on-line" (that is, simultaneously with receipt of the image signal), the Hitachi unit can also go back in time to automatically freeze, store, and retrieve images from previously received signals.

This is accomplished by means of a high-speed, magnetically sensitive memory disc. The amplified incoming signal is recorded continuously on this disc at a speed of 3600 rpm for high resolution and clarity. As new signals are added the oldest are erased.

By automatic programming of the control, as many as 15 different images

Continued on Page 492

UCLA FILM-MAKERS

Continued from Page 436

ment. Everyone knows of him but never where he is. He teaches the basic production course, called Project I, which is the first film that somebody makes at UCLA. I finally found him in an editing room on the third floor of Melnitz Hall.

"The trend that I see starting to happen is a trend away from intellectual communication to direct sensual communication where the audience doesn't sit there, look at the film and say, 'Oh, that happened and that means the following . . . ' or they are simply intellectually following a story. The trend is toward a kind of communication which will directly be felt emotionally and physically but without the intermediate interpretive step. I have the feeling that this is a trend that is just starting but it's just a feeling—it's difficult to point to specific films.

"I'm into any kind of film, all kinds of film. The way I probably limit my approach in what I do is not in terms of a kind of film or style or subject matter. It's a matter of the approach to making a film because it's a business. There is no limit to the types of films I would like to be involved in. The limit doesn't come in terms of documentary as opposed to comedies or optical printing as opposed to *cinema verité* but rather in terms of how you make the film.

"I am uninterested in specifically dealing with the traditional Hollywood way of business. I would much rather make money from my films than make money in any other way, but films are more important to me than just making money. I don't refer to film-making as an industry. I'm talking in this particular vocabulary just because in the last two days I've run into a lot of people who, in talking about film-making, don't say 'film-making,' don't say 'making movies,' or anything else. They say, 'In the industry . . .' or 'In the business . . .' and that's it. I don't want to be part of an industry.

"The film that I'm working on now hopefully will make money. All the people who worked on the film are extremely competent, they all earn their money professionally making movies but none of us were paid. If we make any money we will simply share it equally. We all got into it; everybody shared and, as a result, there wasn't one hassle during the shooting of the movie, not one moment of undue tension, no hatreds—just people having a good time.

"The result is a better kind of film than if we had done it with people who were there only because they had a job or because of an archaic union system.

Women's Lib comes into its own at the UCLA Motion Picture Division, as Director Penelope Spheeris and Soundwoman Fritzie Rodgers struggle to unload camera and sound equipment from hearse doubling as location car.

Everybody who worked did so because they wanted to. In the *business* there's a very different attitude. Things just don't happen as easily in that kind of system. It's very difficult to have fun making a movie in Hollywood and movie-making should be fun. If it's not fun, then it's a job and it gets back to being an industry and I'm making movies because I don't want to have a job.

"I probably have a very snobby reaction to video-tape and to small screen and to situations where only one or two people are viewing it instead of a whole theater full of people. There's a very definite thing that happens between members of the audience in relating to a film. And it's a different feeling when you're in your home alone watching a film on TV, which is why they put laugh tracks on TV. I personally prefer the theatrical experience to the private experience.

"But with the possibilities that video-tape has, and with the silver quantities being depleted, and certainly the ease of video-tape in comparison with filming, and the potential saving of money by video-tape productions, it probably will become extremely important. But my reaction right now is that I'm still a little snobby about it. Film is film and video-tape is TV."

Lester stopped to light another cigarette. Since he is a member of the faculty I asked him if he feels the department is doing its job in stimulating student creativity.

"The main problem with the depart-

Continued on Page 468

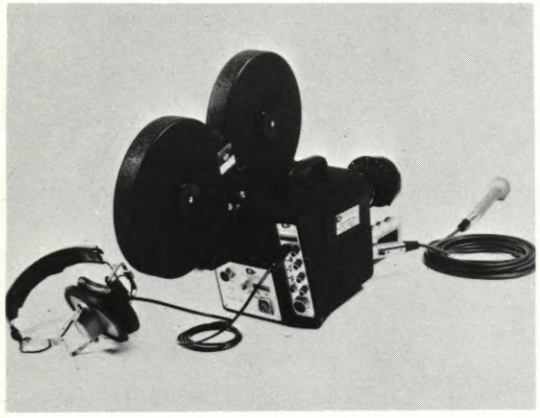
Mark Griffith, Director of UCLA production, "AND I DON'T MEAN MAYBE", lines up an early morning scene in the desert for "chest-butting" sequence, filmed near Death Valley. It was not explained whether chest-butting is a form of combat or some exotic mating ritual.

F&B/CECO & SOS *Present* *a free* CP-16/A *seminar*

CP-16/A NEWS/DOCUMENTARY CAMERA

Professional 16mm single/double system sound camera • Sync sound controlled by crystal oscillator • Built-in amplifier • Plug-in Nicad battery pack •Sinusoidal intermittent movement • 173° rotary disc fixed shutter • Filter slotted • Uses 400′ or 1200′ magazines • 12:120 Angenieux zoom with short finder • Weighs only 16 pounds • Choice of many exciting accessories.

CINEMA PRODUCTS COMPLETE LINE OF PROFESSIONAL MOTION PICTURE PRODUCTS WILL ALSO BE DEMONSTRATED.



Saturday, 28 April 1973, 9 am to 1 pm
Hollywood, *7051 Santa Monica Blvd.*
New York, *315 West 43rd Street*

Continuous Camera Demonstrations
Refreshments

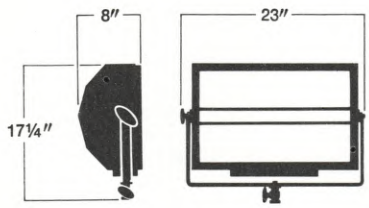
F&B/CECO/SOS

7051 Santa Monica Blvd., Hollywood, Calif. 90038 (213) 466-9361
315 West 43rd Street, New York, N.Y. 10036 (212) 586-1420

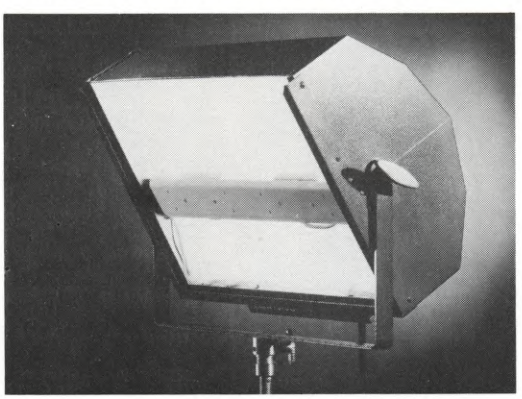
Mini Soft-Lite

A new 2kW portable fill light from Berkey Colortran

Berkey Colortran's new Mini Soft-Lite, an ultra-light weight (8¼ lbs), portable fill light, uses two 1kW quartz lamps, each on its own switch. The Mini Soft-Lite is equipped with a new combo stud that fits ⅝″ studs or 1⅛″ females. It needs no assembly. Plug in its 25 foot feed cord and you're ready to shoot. Newly designed reflector provides shadowless high output light. 110 footcandles at 10 feet. Super soft output at a mini price. See your Berkey Colortran Dealer.



width	23″	58.4 cm
height	17¼″	43.8 cm
depth	8″	20.3 cm
weight	8¼ lbs.	3.7 kg



Berkey Colortran®

1015 Chestnut Street, Burbank, CA 91502, Telephone 213 843-1200

A DIVISION OF Berkey Photo Inc.

FILMING "LOST HORIZON"

Continued from Page 409

and a refueling stop by a DC-3 on a barren desert was filmed at Victorville. Bronson Canyon, a few short blocks from Hollywood Boulevard, was completely snowed in artificially to serve as the background for closeups of the dangerous treks to and from Shangri-La.

Undoubtedly the biggest set construction in Hollywood in many years took shape on the back lot of The Burbank Studios where four acres were used to create an awesome replica of the lamasery of Shangri-La. The structure, rising 80 feet in the air, surrounds extensive gardens, five pools and two waterfalls. The area was also seeded to provide its own floral decor, even to the real flowers blossoming from the cracks in exterior stairways and passageways.

At the 20th Century-Fox ranch in Malibu, huge areas were leased to create the entire Valley of the Blue Moon that spreads out in all its verdant glory below the Shangri-La lamasery. Acre upon acre was seeded there, too, to provide its own flowers and greenery, including a golden meadow of flowers as the setting for the romantic encounter between Peter Finch and Liv Ullmann.

"LOST HORIZON" was produced with all of the lavish care typical of the "Golden Age of Hollywood"—and recently in short supply. No amount of time, budget or attention to detail was spared to give it authenticity and the maximum amount of production value. For example, thousands of dollars were spent to bring rare orchids to the set to decorate the exotic interiors of the lamasery of Shangri-La. The *odonoglosom grande,* a prize-winning flower from the Orchid House of San Luis Obispo, Calif., forms the centerpiece for a dining room sequence. Set decorator Jerry Wunderlich also brought in *dendrobium* from Hawaii, as well as displaying *phalaenopsis* and *cymbidium.* The most impressive bloom, flown in from South Africa, was the *protea,* an imposing flower that resembles an artichoke that has been struck by a rainbow.

The costumes designed by Jean Louis for the inhabitants of Shangri-La are imaginatively original, but in the sequences prior to the arrival at The Valley of the Blue Moon, realism is stressed and the wardrobe is scrupulously authentic. For example, during the trek to the magical valley, Peter Finch is decked out in the authentic arctic gear of the famous Sherpa porters of Tibet. Heavy fur-trimmed leather trousers feature extra furs that are wrapped around the legs with leather thongs, huge fur-lined leather coats topped by two fur parkas, and heavy fur mittens complete the frosty picture.

"In an outfit like this," commented Finch, "only a clairvoyant could get to the bathroom on time."

The thousands of props required for the picture—some of them wildly exotic—presented a unique set of challenges to Ross Hunter's prop man on "LOST HORIZON". Among the listed items needed for the picture: 150 lamasery torches, Tibetan wax paintings, a bronze statue of an 11-headed Bodhisat Avalokitesvara, a full library of books with wooden covers, two gallons of caoutchouc for making up native women and enough yak hair to fashion six herdsmen's 12-by-50-foot tents. Max Frankel, prop man on the film, accomplished the feat—and then some. He actually got enough yak hair for seven tents.

The new "LOST HORIZON" is a visual spectacle of stunning beauty, with handsome sets by Preston Ames and exotic-chic costumes by Jean Louis, but it is the photography of Robert Surtees, ASC, that lends pictorial magic to the film and crystallizes the story's never-never-land theme.

Surtees was a most fortuitous choice for Director of Photography. A triple Academy Award winner for "Best Achievement in Cinematography", he was last year nominated *twice* in that category for his work on "THE LAST PICTURE SHOW" (in black and white) and "SUMMER OF '42"—two films employing radically different styles of photography. After 46 years in the motion picture industry (and going stronger than ever), he is one of the few still-active cinematographers of the old school with the skill and experience to handle a film of such magnitude in the grand manner.

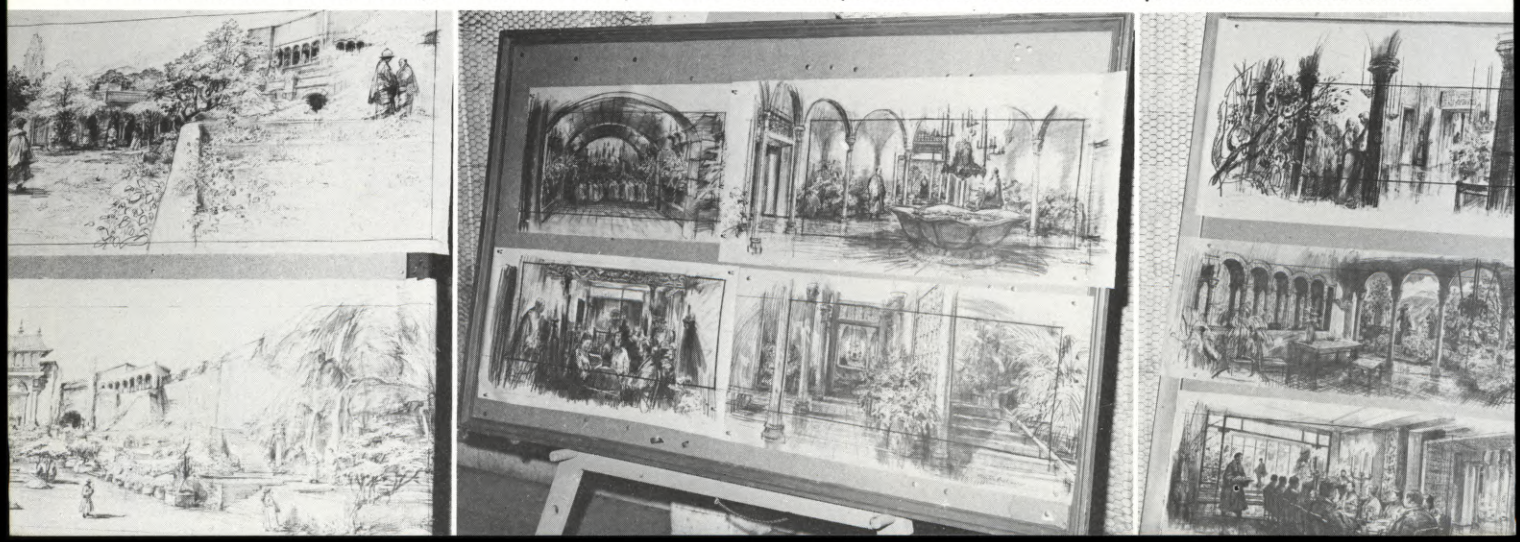
That "grand manner" means glossy and outright glamorous photography of a type that hasn't been seen on the screen since "SOUND OF MUSIC". It is characterized by superb lighting, precise composition, smoothly fluid camera movement—and it is, by today's gritty standards, unashamedly old-fashioned. But it is all of a piece with a story that takes place in mythical Shangri-La, a place of unreal beauty, where all is perfection, utopian health and happiness prevail and no one grows old for hundreds of years.

In his photography of "LOST HORIZON", Surtees creates an aura of fantasy without leaning on gimmicks—and it is refreshing (and somewhat nostalgic) to enjoy once again cinematography that is sharp and crisp, with rich color and modeled lighting—and which makes no apology for its studied perfectionism. It is the work of an artist who is master of his craft and who achieves Art without artifice.

In the following interview with *American Cinematographer* Editor Herb Lightman, "LOST HORIZON" Director of Photography Robert Surtees, ASC, discusses the techniques and methods he utilized in filming the picture:

QUESTION: First off, Bob, can you tell

(LEFT) Artist's renderings of some of the sets and camera compositions for "LOST HORIZON" designed by Preston Ames. The sets mix Tibetan motifs with clean, modern lines to arrive at a style that is distinctively "Shangri-La" and unique to the film. The effect is that of a timeless never-never-land, with an air of fantasy, but rooted in reality—a kind of dream Utopia that is free of the strifes and pressures of the world outside.



(LEFT) The proverbial "cast of thousands" was assembled on an abandoned airfield near Tucson, Arizona to stage the film's dramatic opening sequence that supposedly takes place in a strife-torn South Asian nation. Planes, illuminated by the fires from burning buildings, land and take off in the midst of human chaos. (RIGHT) Inside the last plane to leave the area, Michael York, Sally Kellerman and George Kenndey become aware that they are being abducted.

me about the photographic style used in shooting "LOST HORIZON", and why that particular style was selected?

SURTEES: The photographic style was indicated by the story and the script. That's what means the most to me. Almost everyone knows the story of "LOST HORIZON" because of James Hilton's book and the other picture that was made from it. They usually think of Shangri-La as a heaven-on-earth sort of place where you don't get old and you don't die for many hundreds of years. It sounds a little corny, but I guess there's a lot of people these days reaching out for something like that. Anyway, in order to get a visual look in key with that idea, I went right back into an earlier style of photography—a glamor type of photography, the kind of stuff that my good friend Arthur Miller and the other boys of that period used to do. I guess I'm the last active cameraman who remembers that era or has had that kind of experience. By "glamor" photography I mean trying to get a great richness into what's on the screen.

QUESTION: What are the specifics that you feel create this glamor aura in photography?

SURTEES: In terms of lighting, for example, the old Mae Murray pictures used to emphasize hot highlights on the hair. Well, we went back to a little of that—and it looks completely different, because no one has done it for so many years. Our compositions were very carefully figured out in pre-planning. The camera moves, also, were very precise and always motivated. Instead of just going with somebody, there was always a reason for the move that would advance the story and show the people most advantageously in the sets. Many things were done to dress up the "heaven" idea. Preston Ames did the sets and his work was very, very important to the picture—and important to me. The exterior set for the monastery in which the monks live—and where most of the action takes place—was enormous. This may be the last Hollywood picture to have tremendous sets like that—and be able to afford them. Then there were the flowers, thousands of them, that were used in the sets. They spent something like $1,000 a day to fly in fresh flowers from all over the world. But the settings, the design, the decorations and the photography do an awful lot for this picture—much more so than they would have for a "normal" type of picture—because we had to reach out to suggest that Shangri-La would be a perfect place to be for the rest of your life. On the other hand, you had to be careful in matters of taste, so that you didn't over-dress it or over-photograph it, because the whole thing could have become cornier than hell.

QUESTION: What about the location shooting, the snow sequences particularly?

SURTEES: We climbed Mt. Hood in Oregon and shot up there for a while—slept out in the snow and stuff like that. The second unit did some shooting in the Washington Cascades and they had some terrible experiences up there. They made snow tunnels and slept in them. From time to time their food couldn't be flown in by helicopter because of the weather. Then we followed up and had to match some of their work on the top of Mt. Hood, which is about 60 miles from Portland. It's a beautiful spot, but when you get up to around 9,000 feet the grade gets awfully steep, so you can't get very far with snow vehicles. They tumbled a couple of them, as a matter of fact.

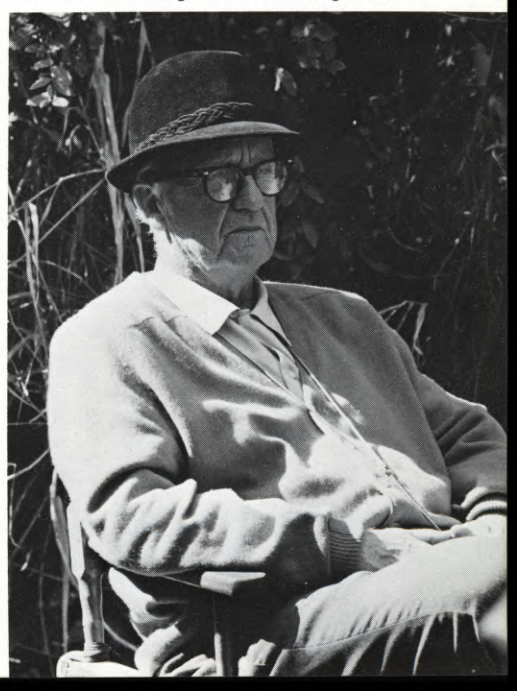
QUESTION: Does that mean you ended up climbing it on foot?

SURTEES: Oh, yeah—sure. But after climbing the mountain we still had a lot of stuff to shoot with the principals. Sir John Gielgud was too old to climb the mountain, so when he came up we arranged to do his scenes about a mile from the hotel, in a parking lot area where the skiers park their cars. They cleared it for us one morning and we went down and shot all day. While we were there a storm came up and it worked out just beautifully. It's the best-looking snow stuff in the picture!

QUESTION: What about other locations?

SURTEES: Well, they updated the story just a bit, but it starts off with people being loaded onto airplanes in an area

Triple Academy Award-winning cinematographer, Robert Surtees, ASC, master of many photographic styles, reverted to an old-fashioned glamor treatment as an appropriate mode of visualizing a musical Shangri-La.



On location at the freshly glamorized 20th Century-Fox ranch in Malibu Canyon, the crew prepares to film a romantic scene between Peter Finch and Liv Ullman. The familiar location ranch has never looked so green and beautiful.

under siege—something like the India-Pakistan thing—and the enemy troops are approaching, so the order is given to burn the village. We did this sequence in four or five nights of shooting near Tucson, Arizona. We built a village at an abandoned airport and burned it. You could see it for a half-mile at night because the flames from the fire were so great. There were about 1,000 people used in the sequence, with planes coming in and taking off and the enemy arriving and shooting it out. They've got a little of everything in that sequence. I hope they don't have too much of everything.

QUESTION: Working with fire photographically is always a bit tricky, but handling it on such a vast scale must have been a real challenge. What were some of your problems in that respect?

SURTEES: Well, for instance, in the long shots, as much as possible, we played a red glow against the distant sky. Then, for the scenes around the airplanes, where these thousands of people are running from one side of the airport to the other and trying to hold the planes down, we had to have flame effects. We worked this out with the Special Effects people and did it in a rather simple way. Instead of using smoke pans with oil burning in them, as we usually do, we just used pieces of silk that were shredded and then shook them in front of the lamps. I like to introduce a little red into scenes like this, but I don't like to hit faces with red—unless someone runs through and out. For one thing, such scenes go out of focus because there is a wave-length shift in the red. But we did have red kickers coming from the top and back to outline the faces and hair. We kept the red off the faces by cutting the 25A red gelatines so that the red color would hold only from the neck down and it doesn't appear so peculiar. Otherwise, to me, it looks a bit motion picture-ish.

QUESTION: So much for location lighting, but how about the problems of lighting that huge monastery set on the Burbank Studios backlot?

SURTEES: There were problems, alright. Just to light that great area night-for-night required 35 or 36 Titan arcs. I think we had every one there is in Hollywood. The number of lights and the amount of area they had to cover and the time that it took to set all of them added up to a huge project and incredible expense. But, as if that weren't enough—it happens that this was a candlelight picture. This meant that that vast exterior had to look as if it were lighted by candles, in such a way that you could believe it. We used a lot of MT-1 and MT-2 filters in front of the lamps to get the effect. I prefer that to using a filter over the lens, because I'd rather have a clean negative and put the color into the lighting. This leaves you free to take some out or add more wherever you want it.

QUESTION: I noticed when I was out at the studio that the monastery exterior set was continuous. In other words, it went all the way around in a circle. That must have meant that you sometimes had to light the whole thing at once.

SURTEES: Well, yes—because the director did a lot of 180 and 360-degree pans—which are rough. I spent about a quarter of the picture hiding under the camera to keep out of the composition, lying flat on the ground with the camera panning over me. In the final cut of some of the sequences, they've eliminated half of the pan, so that you get only about 180 degrees. That's because they sometimes run too long and slow down the tempo, but there are times when they play very well. We had a terrible throw to light from the top of the set down to where the action played, while keeping the lights out of the picture. The picture was shot in Panavision anamorphic, which, of

Burt Bacharach conducts the orchestra in recording his original score for "LOST HORIZON". In addition to the dramatic underscoring, he composed, in collaboration with Hal David, a dozen songs to be performed by the principals in the film. The film is more a "drama with music" than it is a straight musical.

course, takes in a lot of area in a single shot.

QUESTION: How did your lighting style carry over into the monastery interiors?

SURTEES: Those were supposedly lit by candlelight, too, so I tried to get a kind of copper tone into the lighting, using MT-1, MT-2, 70 and 57 filters over the lights. The monastery interior sets, the private rooms, were beautifully designed and decorated. The color combinations were very subdued—no harsh blues or reds or oranges. I tried with my lighting to pick up textures—wood textures and the textures of various materials—because when you can see these textures the effect is more realistic. The costumes were beautiful, too. It's that old, old story about making pictures—everything has to click at the same time. If one department doesn't do its job right, if the sets look cheap, if the picture isn't photographed or acted the way it should be, then the final result can't be good. Costumes, makeup, lighting—they all have to hit, especially in color. In black and white you can play with things a bit. You can take a bad set and use some shadows and light it so that it looks right. You can't do that in color. In black and white, if the makeup is bad or skin doesn't look right, you can use a little more light or a little less light to give the makeup the correct density, but in color there is nothing you can do about it.

QUESTION: What about filtration on the lens? Did you do anything tricky there in the way of diffusion or fog filters?

SURTEES: I don't use fog filters anymore. I did the fog filter picture to end all fog filter pictures when I shot "THE SUMMER OF '42", and I don't want to ever touch a fog filter again. They're too old-fashioned.

Director Charles Jarrott eyes a possible camera angle through his Director's Finder, while Director of Photography Surtees surveys the scene and the camera crew prepares for a new set-up. Camera angles throughout were kept conventional to avoid being obtrusive.

QUESTION: That's a little ironical, considering how much the younger cameramen have been using them lately—over-using them, in some cases.

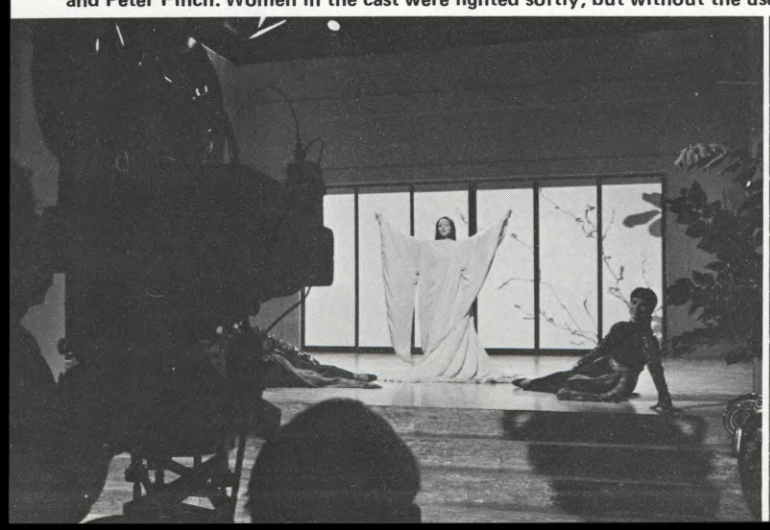
SURTEES: Yes, but I think they're starting to get away from them now. It's like the hand-held camera. It isn't being used as much anymore. Such gimmicks have outlived their usefulness. Fog filters make me feel self-conscious, but some people use them as a crutch. After all, it's harder to light a set right than to put on a fog filter to gloss over lousy lighting. It's much harder to get the right feeling sharp and hard than it is the other way, but I think it's much better. Of course, you couldn't tell me that when I was doing "THE SUMMER OF '42". But that picture was nostalgic and I was trying to get a feeling of nostalgia into it. Everything kept getting softer and softer until, at the end, you could just barely believe it. It may have been a little overboard, but I was trying for an effect and when you do that you have to go a little over. Otherwise it won't read. It's much better to have a little too much effect than not enough.

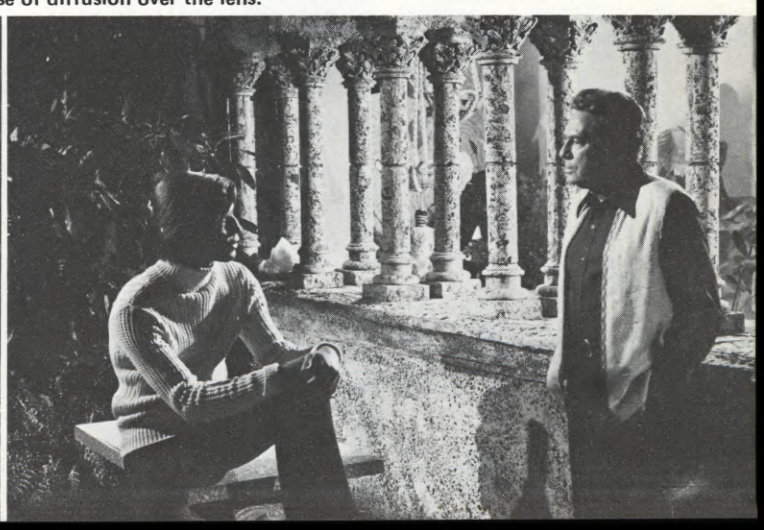
QUESTION: How about more conventional types of diffusion on "LOST HORIZON"?

SURTEES: I used a very thin marquisette net for the torch parade sequence, where there were five or six hundred torches. It didn't create a big blur—just a shimmer. But I didn't use any other diffusion, even for photographing the women in the cast. I don't think the audience should be made aware of such devices. They should simply feel that the scene is done right, instead of

Continued on Page 466

(LEFT) Cameras record a dance sequence featuring Olivia Hussey in a role totally different from that of the 15-year-old Juliet that marked her screen debut in Zefferelli's lush "ROMEO AND JULIET". (RIGHT) Strong cross-light accentuates the ruggedly masculine features of Michael York and Peter Finch. Women in the cast were lighted softly, but without the use of diffusion over the lens.





PRE-PRODUCTION PLANNING

Continued from Page 427

the partitioning, to bounce light off the silk into the action area. We maintained 64 foot-candles of ambience in the workshop/toy display area with an average of two lights per unit working. Several midgets and babies provided back light, key light for actors working close to the 40W hanging practicals, and to boost illumination in certain background areas. Two diffused 4K softlight floor units were used—one to motivate sunlight ambience from the gaping hole in the barn front, the other to boost fill ambience. We keyed to maintain exposure between T/4.2-T/5, depending upon the angle and the subject matter, for the 10x zoom lens.

For interior shooting, I make it a practice of pushing film stock one stop under controlled lighting conditions, and do this for several reasons. First, cooler lighting keeps the actors and crew more comfortable. Second, smaller lighting units draw less amperage, and a less powerful generator, or even household current, may be used. The advantages achieved are better performances throughout the day, a smaller and more efficient crew, a better-natured set, plus cost savings using the smaller lighting units and less power. In short, efficiency is improved and sustained over a longer period of time, which more than makes up for the added nominal cost of forced film development.

A couple of light changes were called for in the script. One took place in the barn, while Fester and Jefferson are nipping at the cider and reminiscing, when the work lights go out and the two cronies find themselves lighted only by daylight filtering through the barn slats. This effect was achieved by killing the overhead key and background lights, leaving only the heavily diffused 4K soft fill which was emitting two stops less intensity than had the key light.

The other light change was a night interior, which changes from subdued interior light to moonlight when Claude turns off the bedside lamp after hearing the runaway orphan's bedtime prayer. The problem with light changes, especially when going from one color to another, and without a properly sophisticated switching board, is that of intensity lag, or overlap, of the two effects when one is killed and the other switched on. Studio lamps just do not come up to full intensity, or drop to zero intensity, immediately. Switching, or plugging and unplugging, often flaws the desired effect. Lamp shutters, on the other hand, are noisy. Leaving bluish light on the scene with the warm interior light can be distracting if not carefully placed and washed out. A #626 blue gel was placed in front of a full-flooded senior. By positioning the blue light 90° to the left of the camera's lenticular axis and lightly filling from behind and to the left of the camera, cross-back-keying both actors as though being lighted from the practical bedside lamp, the blue was effectively washed out and could be left on during the prayer bit. After getting into bed and covering up, Claude turned the motivating practical light off and the warm lights were simultaneously killed, leaving only the blue light coming through a window pattern, which then bathed the room in moonlight at two stops under the previous warm key-light intensity. The effect worked well on film.

To cover Claude as he crawls after an errant mobile toy, we utilized a Dexter platform dolly with paired vector-cammed wheels riding on tubular aluminum rails. A wild Arri was set on baby legs and a sixteen-foot dolly move was made. It took less than ten minutes for our efficient grips to set and level the lightweight track. This lash-up was used in another interior sequence for multiple moves during Raintree's pantomime sequence and for an exterior sequence involving the orphan children. The lightweight dolly system was found to be fast, firm and efficient.

One thing that concerned us during scouting was a flock of pigeons which had been using the barn rafters as their home base. Their rattling around on the corrugated tin roof, cooing and fluttering could play havoc with our sound. However, when production started, the pigeons obligingly left during shooting hours, returning to roost in the rafters above the silk each night. So, because each of those birds regularly left deposits on the silk, *we* ended up having to buy it.

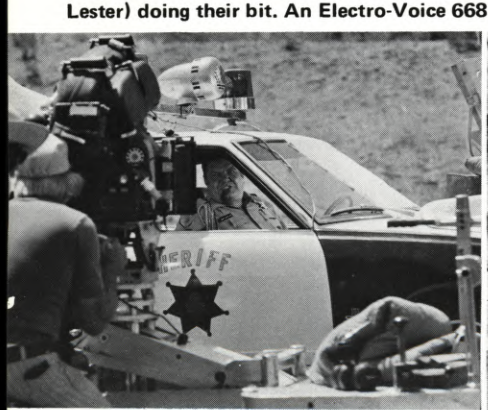
EXTERIOR SHOOTING

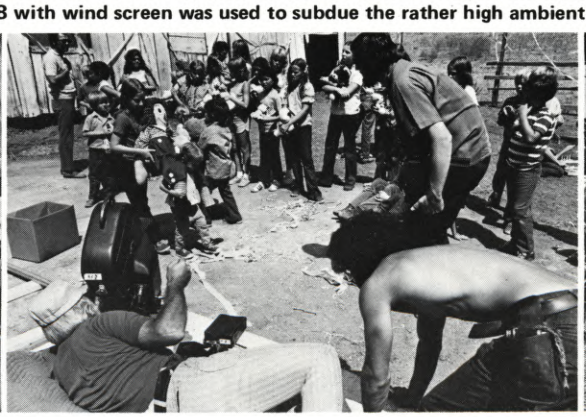
In general, we lucked out on our exterior shooting weather. A day of scattered clouds and an overcast afternoon were the extent of our weather problems. We were utilizing two, sometimes three, six-light Maxi-brutes with PAR 64 dichroics for fill on exteriors, using the sun as side key or back light whenever possible. The artificial fill-light level on the subjects was kept high in order to filter down exposure, intensifying the hint of green in the dry ground cover. After all, Clover Grove should have a green-as-possible look.

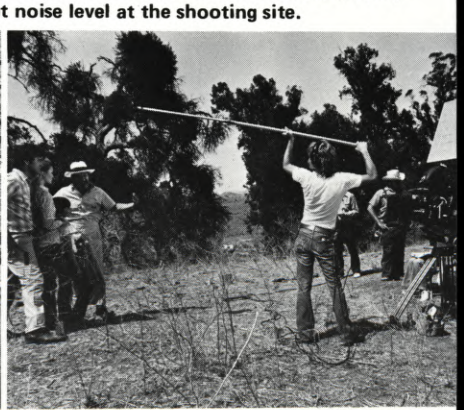
85N6 and 85N9 filters were used in order to keep the lens in its optimum mid-stop range and to soften the focus on the backgrounds and foregrounds, thereby emphasizing the principal action. In addition, longer focal lengths in the 25-250mm zoom lens were used to further soften the backgrounds, especially for close-ups.

We felt that a soft, pastel treatment of a love sequence by the tree-rimmed lake between Claude and Millie would be an appropriate contrast to the rest of the sharp, bright sequences. We reached out with a 100mm prime lens through

(LEFT) Sheriff Dodd (Joe Higgins) does his thing for camera. Plastic velveteen covering the windshield provides appropriate diffusion of the dichroic ground lighting. (CENTER) With key grip Mike Shore pulling, the dolly move works well, as 2nd AD Sylvan Duchovnay, b.g. and director Hillman hover over the little actors. (RIGHT) Boom man Dave Schneiderman fishpoles a take of Claude, Millie, Zeke and the villainous Ched Fields (Buddy Lester) doing their bit. An Electro-Voice 668 with wind screen was used to subdue the rather high ambient noise level at the shooting site.







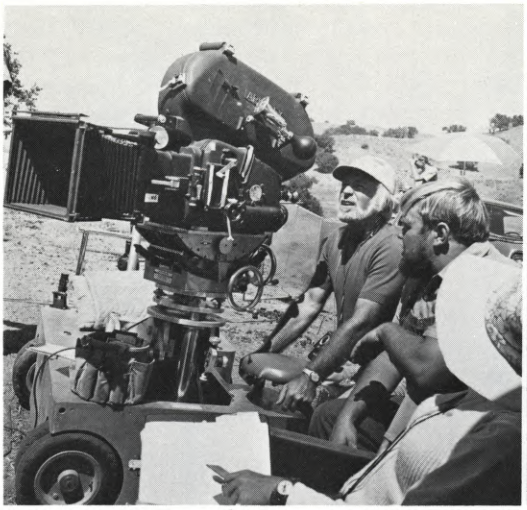
soft-focussed leaves while subdued leaf patterns played gently across their faces. A ½ double fog and light chocolate filter pack along with heavily diffused fill lights gave this rather soft, pastel feeling to the scene which we were after.

Because the action could not always be staged to utilize the sun as back light, we employed solid and silk butterflies in order to control our mid-day lighting on close-ups. The direction of the mid-day sun throws harshly angled and unflattering shadows on faces which even appropriate fill light does not sufficiently subdue. We used reflectors and/or Maxibrutes to provide exterior key and/or fill. Fortunately, we had laid runs of 4/0 cable from the generator to each of our shooting areas and were within 300 feet of our power plant for all of our exterior sound takes, excluding some vehicle and horse run-bys and other establishing shots, so we kept our options open with respect to lighting.

We had one major move to a roadside restaurant, about four miles from our principal shooting site. As luck would have it, scattered clouds were scudding by, and the varying light was playing games with our action area. We were hustling along, as usual; however, we had come prepared, so we set up both lights (operating off the available 110V AC household) and reflectors to cover the rather extensive and partially shadowed entrance way and parking area in which our action would take place. We shot this particular sequence, the establishing long shot and close-ups, both with lights (under cloud cover) and with reflectors (under direct sunlight), alternately, as the light conditions changed, and got both versions in the can in short order.

A number of interior shots were required in our rather unusual Clover Grove Sheriff's patrol car, which was a specially modified Dodge Dart with full-sized red lights and siren paraphernalia mounted atop the black and white compact. Emblazoned on each door and the hood were large green clovers and the Clover Grove Sheriff's logo. The visual incongruity of such a small vehicle holding the bulk of our Sheriff, Joe Higgins, and his deputy, Stu Gilliam, and occasionally their prize prisoner, the minstrel hippy Jed Allen, can be imagined, as can some of the problems of lighting them.

In lighting these interior-exterior shots, we used artificial dichroic illumination and employed plastic velveteen to diffuse our frontal key light (a 4-light FAY unit) and our fill lights (1K and/or 650W quartz) as well. We rigged a 12' x 12' silk butterfly over the patrol car in order to take down the sunlight on the white top and sides and to reduce the intensity of the sunlight coming through the car windows. The velveteen was especially effective in diffusing our lights when the patrol car set-ups were located in heavily shaded areas.



(LEFT) The director of photography and his gaffer, Craig Greene, discuss a set-up, with script gal Jane Morgan listening in. Note the McAlister crab dolly which was used for exterior shooting for the mobility it gave to the heavy camera. (RIGHT) A silk butterfly was rigged over the car to control the sunlight and to help balance the dichroic ground lighting. Note 4-light fay units.

Multiple camera coverage, which can be a real time- and money-saver, was used several times during the production. This technique is best employed for special effects (when re-rigging time is a factor or when an expensive set, or irreplaceable props, are involved), for most stunts, chases, one-time events and large crowd scenes—and we had them all. A quick time-cost comparison convinced us to go with the additional personnel and equipment for the few days required.

When utilizing two or more cameras from approximately the same photographic position, it is a good idea to vary the taking lens of each by at least 15mm and also to vary the vertical and horizontal positioning of each by at least 15° in order to avoid the feel of a jump cut when the footage from each camera is intercut later in editing.

Three remotely-controlled cameras were used to cover an explosion which blows the front door off the barn—two high-speed Mitchells (one running at 120 fps, positioned about 90° to the direction the debris would take, and the other running at 96 fps, positioned directly in line with the debris pattern) and one wild Arri running at 48 fps, positioned at 45° to the special effect. On another occasion, we used two cameras, running at 12 fps, to cover the errant sport car as it came crashing through the rear barn door and on into the outback outhouse containing Charlie Strange.

On four occasions, two cameras were used to record stunt falls—one by our intrepid horsewoman, Millie, as she takes a spill from horseback; another as fumbling Fester saws his way through board *and* sawhorse; once again, when the Sheriff sits on that same poorly-glued-together sawhorse while sweet-talking Millie; and lastly, when Fester does a spinning fall while holding onto a huge piece of lumber, timing the fall to coincide with Sister Mary's passing action.

We also employed two cameras during the entrance of Sister Mary's ancient orphanage truck which had been acting up, running in fits and starts, threatening to stop dead at any time. Fortunately, the third take resulted in a clean, non-stop entrance. Then the truck quit for good, but we had our two angles for the editor.

During the party which Claude Raintree gives for the neighboring orphans, we used two cameras in order to maximize coverage of the one-day event. Between takes by the camera holding the master angle, Bob Kaufman, assisted by Keith Kelsay, went hand-held among the children to capture candid shots of them playing with the varied toys Claude had fashioned for their pleasure.

Undercranking the camera has been a time-honored technique for emphasizing ridiculous comedy action as well as for increasing the apparent velocity of objects in motion. We employed this technique for both purposes.

We undercranked at 8 fps to enhance the frantic antics of Claude, Millie and Zeke while they were being pursued by the Sheriff and his deputy, as well as for Charlie Strange as he was being run down and captured by Fester and Jef-

Continued on Page 481

Continued from Page 384

the meter and requires a certain amount of maintenance. A mercury battery is usually employed because it maintains an even discharge voltage. However, the more sophisticated systems use an additional voltage-regulating circuit to minimize re-calibrations due to battery voltage differences. The CdS cell also requires some color temperature balancing, as its spectral sensitivity somewhat differs from that of panchromatic film. It should be obvious that the CdS type meter is not quite as simple as the selenium system. In addition, there are other facets of the CdS "personality" that are worthy of mention.

The CdS cell will sometimes "lag" at very low-light levels; in dim situations, the meter is not very quick in responding to small changes in illumination. In low light situations, it is wise to approach the correct reading from two directions and average the readings if they differ. That is, point the meter to an area darker than the area in question (or cover the meter with your hand) and then take a reading in the area in question. Note the reading. Then point the meter into a bright area and again take a reading. If the two readings differ, average them.

Another quirk of the CdS cell is "dark adaptation." When the CdS cell is covered for a long period of time or exposed only to very low light levels, it may give an overly bright reading when exposed to bright illumination. The best defense against this phenomenon is pointing the meter (or camera in the case of a TTL meter) directly into a light source or very bright area for a minute or so before using it.

As you can see, the personality of an exposure meter is dependent upon the type of cell it employs. However, the configuration of the meter (i.e., incident, reflective, spot, etc.) is a greater factor in determining exposure technique and this will be our next topic. ■

EDITING TABLE

Continued from Page 441

positioned like this is a bit odd—backwards, to be exact. But there's no way to avoid it, short of an endless collection of loops, idlers, and sprockets to route the film completely around the projector.

The solution? Forget about convention. Thread the projector from the bottom, up past the lamp to the right rewind spool, and run the machine in reverse. It works perfectly, and with the correct mirror combination, the image in the viewer is true to life.

The secret to getting the projected image from its hideaway beneath the desk to the large screen mounted on the desktop is the oldest joke in filmmaking, "It's all done with mirrors."

Tired, but true. The first mirror, a small trapezoid directly in front of the lens, is on a swivel mount so that it may be adjusted to focus the beam on another mirror directly behind the projector. This second mirror is larger, and must be able to adjust up, down, right, left, forward and backward, and rotate on its axis. This insures that the beam will be placed squarely on the screen. This mirror could be stationary, but the builder must know exactly where it goes before making it permanent. Better to play it safe and allow plenty of room for adjustment.

The third mirror is permanently mounted inside the viewing screen's enclosure. It depends on the other two for correct placement of the image. It's necessary that the number of mirrors always be odd, because the image is reverse-projected onto the back of the viewing screen. The screen itself is a 16-inch square piece of double-strength glass etched on one side with hydrofluoric acid. The effect is the same as on the ground-glass screen in a Moviescop.

The added complexities of editing mag-track recordings didn't present too great a problem. The editor's main concern here is keeping each track synchronized with the picture and with each other. Most people are willing to pay for a synchronizer block to perform that function. The projector is again tapped to keep the chain turning at a steady, pleasing-to-the-ear 24 frames per second.

For lack of a better drive belt, the builders use a continuous loop of leader running from an extra power sprocket to the rear synchronizer sprocket, which it shares with the film. With everything tied together by registered leader film and mag-track running over toothed sprockets, there is no way for any of the tracks to slip synchronization as much

as a frame.

The last links from the projector to outside components are the metal, spring-type drive cables now running to each of the rewinds on top of the desk. These cables are the same kind normally used to operate the supply and take-up reels on an ordinary projector. (This particular type, however, may be peculiar to Bell and Howell projectors.)

The only modifications needed for this step involved the intricate pulleys that the cables pass over. The pulleys are designed so that if pressure is applied in one direction, they offer resistance and lock in place, causing the shaft to turn with the cable and pulley. But when the direction is reversed, the pulley gives no resistance and only freewheels. In this case, the shaft may remain stationary.

One of these pulleys had to be installed on the shaft of each of the rewinds—after they had been machined to tolerances on a lathe—in order to apply tension to the appropriate reel while the other turned free, depending on the direction of film travel.

An additional pulley was installed inside the projector just above the lens to power the right-hand rewind when necessary. This finishing touch was simple in concept, but proved to be considerably more difficult to carry out because of the lack of free space in that part of the projector.

Now, back to money. The builders estimate their over-all costs to be roughly $600. The break-down is as follows:

Rewinds	$ 80
Synchronizer	100
Amplifier	50
Projector	200
Splicer	20
Moviescop	70
Desk	60
Hardware	25
TOTAL	$605

Of course, many filmmakers will already have some items in their on-hand stock of equipment, considerably bringing down the price.

Compared to the $10,000 to $20,000 investment a professional table would mean, this $600 system represents a substantial savings. And for that kind of bargain, almost any filmmaker can cheerfully learn to put up with the annoyance of changing reels by hand. ■

CINEMATOGRAPHY ON THE OCEAN FLOOR

By RICHARD SHUTT
Marine Life Research Group
Scripps Institution of Oceanography

An ingenious approach to filming in an eerie frontier that is deep, eternally dark and mysterious . . . the abyss beyond the continental shelf

Seventy one percent of the earth's surface is covered by water. If it were possible to look out over all of the oceans at one time, one could only see a very small part of it. Much, much more lies below the surface. With all the oceanographic research, equipment, ships and money spent, we have not even begun to fathom it. One of the many projects of the Marine Life Research Group (MLRG) of Scripps Institution of Oceanography, which is under the direction of Professor John D. Isaacs, is to study life in the oceans, particularly in the abyssal regions. One of the methods used in this research is cinematography.

Today's technology has enabled us to send man to the edges of the continental shelf. With him, he carries his camera and lighting equipment. Beyond this lies another frontier. A frontier that is deep, eternally dark and mysterious . . . the abyss. Life is present there and man's desire to know something about it has forced him to overcome tremendous problems. Very few men have physically penetrated this region and when they do, they are confined to a small cramped capsule and their stay is for a very short period of time.

Since 1958, MLRG has deployed small oceanographic instruments by the use of a "free vehicle". This was a departure from the traditional method of deployment . . . most instruments are lowered by cable from a ship. This vehicle consists of a locating float, with a radio transmitter and pressure switch built into its mast, a set of hollow glass spheres or syntatic foam used as buoyancy to support the weight of the instrument, the scientific instrument, a release system and ballast weight. These components are connected together by a 3/8" diameter line approximately sixty feet in length. See FIGURE 1.

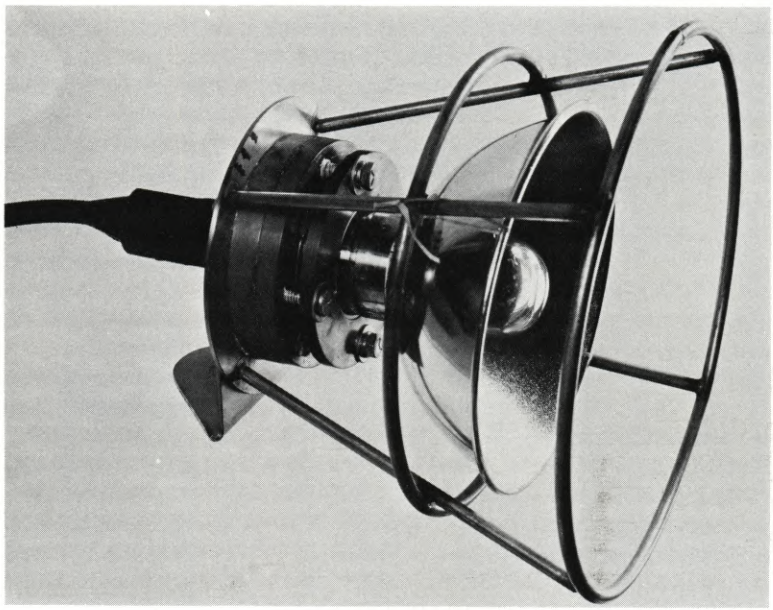
The entire system is assembled on the deck of a ship and thrown overboard. It descends to the bottom of the ocean, does its thing, and upon activation of the preset release system, ascends to the surface, whereupon it emits a radio signal to the ship. It is then picked up and the data processed.

The free vehicle has many advantages. It does not burden the ship with holding a station while the instrument dangles at the end of a cable. It frees the vessel to do other oceanographic work, while the instrument, independent of the ship, goes about its business. The ship may deploy many of these systems, later coming back to retrieve them.

One of the many instruments used in this manner was an Edgerton 35mm still camera, modified for use with the free vehicle to take photos of deep sea bentic life. The camera was self-contained, having its own control system which was pre-programmed before launch. The ballast weight was baited with scrap fish in order to lure the creatures into view. This system worked well. It has resulted in an enormous amount of information being compiled about life on the ocean floor. It is still in use today.

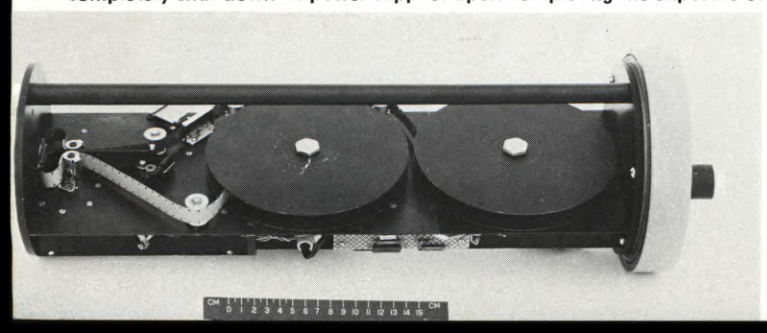
After the successful use of the still camera system, it seemed only logical to proceed with a deep water cine system.

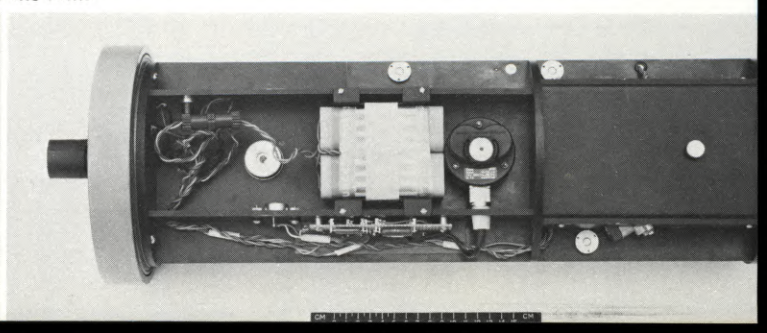
Continued overleaf

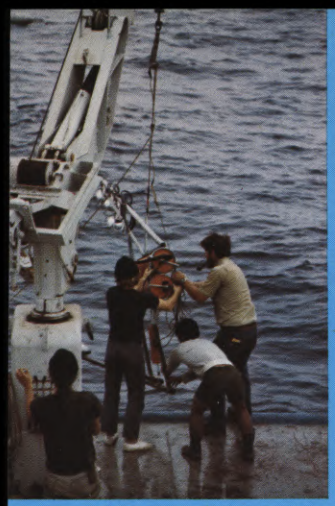


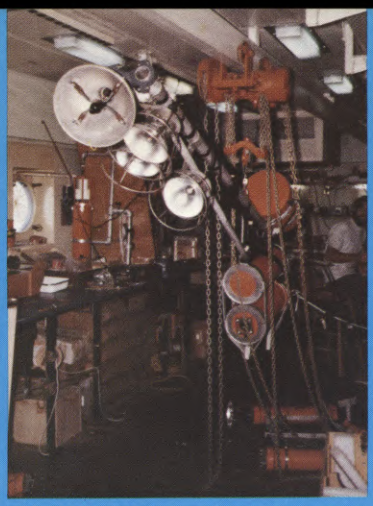
Deep water cine lamp consists of a 30-volt, 350-watt (FBW) Sylvania tungsten-halogen lamp enclosed in a glass pressure vessel. Three of these units are used in a cine system totaling over 1000 watts. Lamps are protected from rough handling and shock by stainless steel wire cages. External pressures found in the deep ocean will shrink the lamp housing, thus requiring the reflectors to be tied to the cages in order to keep them from sliding off.

The camera transport was designed for use in cylindrical pressure cases. It is built around a Bell and Howell Model 70 film transport and shutter mechanism. It has a film capacity of 400 feet on spools. The camera is powered by a 12-volt nickel-cadmium battery and is driven at 24 frames per second by a governor control constant speed motor. A second film gate is utilized to detect the end of the film in order to allow the system to completely shut down its power supplies upon completing the exposure of the film.



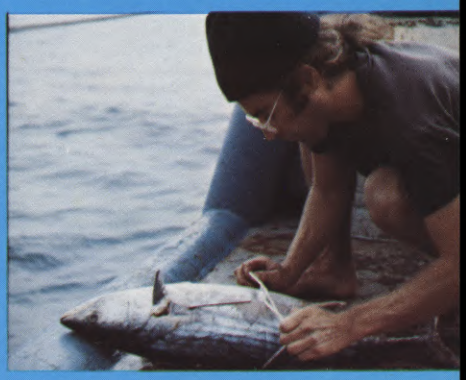






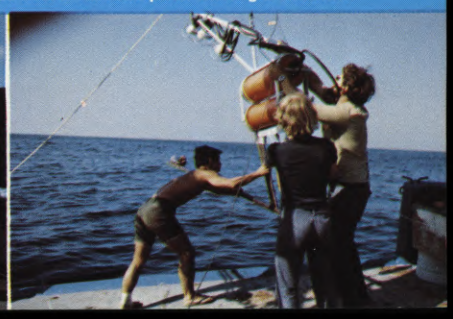
(LEFT) The crane on the "Ellen B. Scripps", Scripps Research vessel, is used to launch the camera system. The camera weighs about 200 pounds in air. (CENTER) Stored lighting and other equipment for the project. (RIGHT) Hosing down equipment after a camera mission.

(LEFT) Author-Designer Richard Shutts, of the Scripps Institution of Oceanography. (RIGHT) Jim Singleton attaching bait to the ballast pole to lure deep sea creatures into the camera's field of view.



(LEFT) Frame blow-up of a cow shark, taken off the Comoro Islands. In many cases, the sharks completely missed the bait, taking bites out of the coral rock. (RIGHT) Frame blow-up of a scene taken in the San Diego Trough, in about 4000 feet of water. The eel-like creatures are hag fish. Sable fish and Grenadier also appear in these sequences.

(LEFT) Prior to launch, Scripps' technicians, Tetsuo Matsui, Jim Singleton, Ken Knutson and Author (center) survey their work. (CENTER) The author makes a final adjustment to a lamp before launching the camera. (RIGHT) Deck activity sometimes hits a furious pace during a mission.



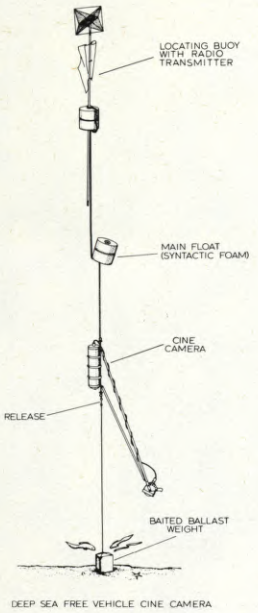


FIGURE 1

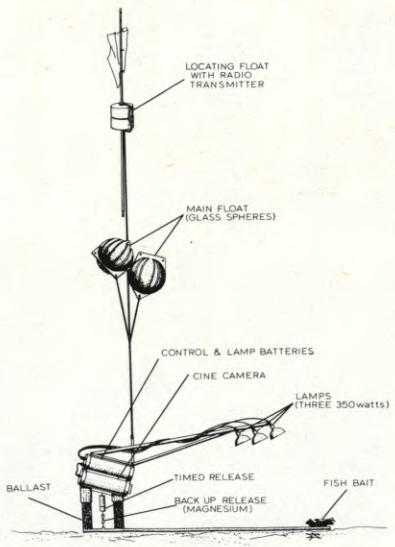


FIGURE 2

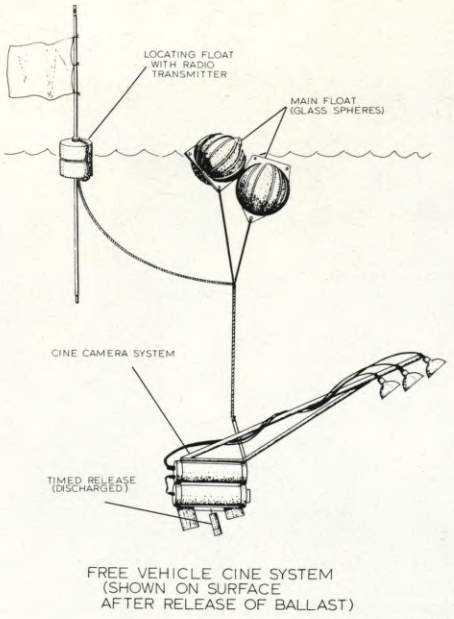
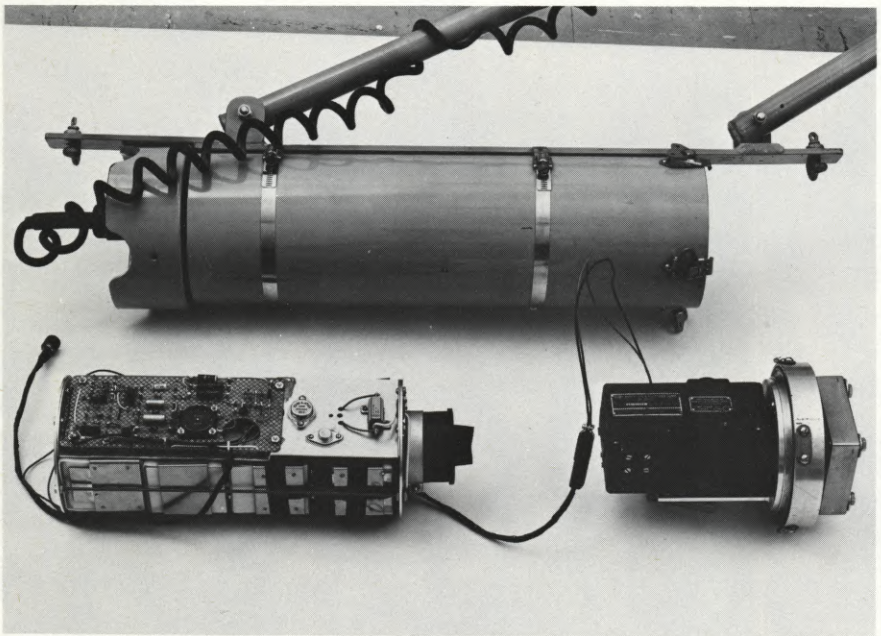


FIGURE 3



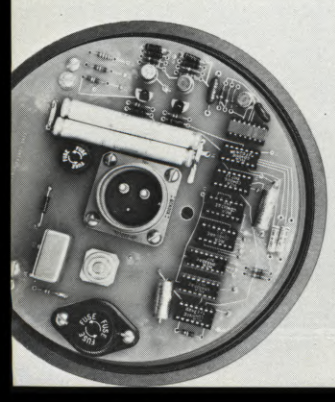
The experimental cine camera consisted of a surplus 16mm aircraft gun camera, a 30-volt nickel cadmium battery pack, a converted diver's lamp and a control circuit which programmed the system to turn the camera and lights on every ten minutes for a duration of eleven seconds. A delay timer was incorporated to allow the camera to reach the ocean bottom before the programming was initiated.

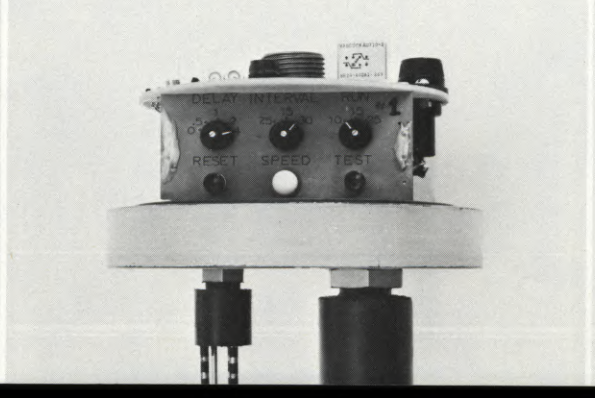
Outside of a slightly different set of electronics to control the camera, the basic difference would be a continuous light source, rather than a strobe as used in the still camera. This, of course, brought up other problems. There was the possibility that deep sea creatures would be frightened off when the lamps came on. It was one thing to take a still photo with one flash of light and quite another to expect them to stay around several seconds under a continuous light source. What of the transport noise? We were dealing with critters that no one really knew that much about. With these questions confronting us, I certainly did not feel it advisable to launch myself into a full-scale cine camera development program without having answered some of these basic questions.

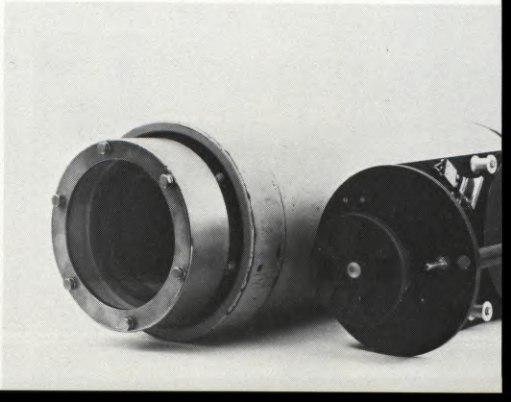
EXPERIMENTAL CAMERA

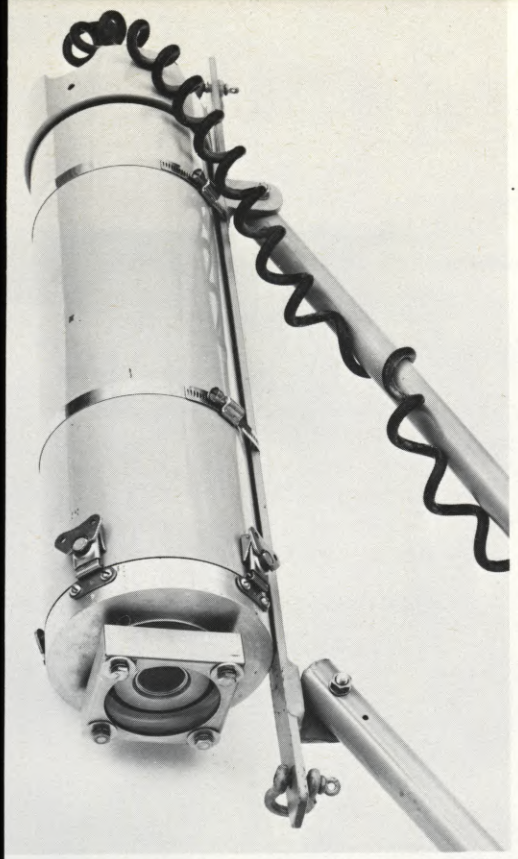
I found a surplus 16mm aircraft gun camera, that operated on thirty volts and had been converted to run at 24 frames-per-second. A diver's hand-held 250-watt lamp was used as a light source

(LEFT AND CENTER) The lamp battery pressure case also houses the control circuits. Mounted on an end cap, a panel of switches allows the camera technician to dial in the program he wishes the camera to perform. These are delay, interval and run durations, as well as test functions; run, camera motor speed, and reset. (RIGHT) 3D experiments were recently conducted with the use of a Swiss made stereo lens system. A much larger diameter hole had to be cut in the pressure housing end cap to accommodate the lens. This required a two-and-one-half-inch thick glass port to withstand the pressure. Normally, only a one-inch thick port is used with the standard lens.









Experimental camera, with housing. This model proved that a cine system could be used to photograph creatures on the ocean floor.

along with its thirty-volt battery pack. The lamp lens port was removed and replaced by a thicker piece of glass in order to withstand greater pressures. The hand switch was disconnected and sealed. A control circuit was designed and built to operate the camera for ten seconds at fifteen-minute intervals until the film, all fifty feet of it, was used up. It also had a delay function to keep the camera from turning on until it reached the ocean bottom. I used a discarded pressure case to house the equipment.

Experiments were conducted out of a small launch off La Jolla in 2000 feet of water. We got our answers. Those creatures which live near the range that light penetrates the ocean depths seem to be affected by light. We found, for example, that if the bait were placed in such a way that the fish could not actually get to it, they spooked usually within seconds after the camera system came on. If, however, they were allowed to eat the bait, it preoccupied them and they usually stayed around for the duration of the filming sequence. On later missions, which were made in the deep ocean, we found that the light never seemed to affect them, probably because they have never known light other than bioluminescence; therefore, they were not frightened of it.

After twenty successful missions, a decision was made to design and build two complete cine camera systems. Several things had become apparent from the use of the experimental camera. The control circuit and cable drained off a great deal of power before it reached the lamps. This restricted us to a F/1.6 lens setting and the need to force process the film two stops. The film we were using was Ektachrome 7242. As seen in FIGURE 1, the experimental camera shoots from overhead, providing only a top view of the creatures. Scientists studying the film believed an oblique angle shot would better suit their needs.

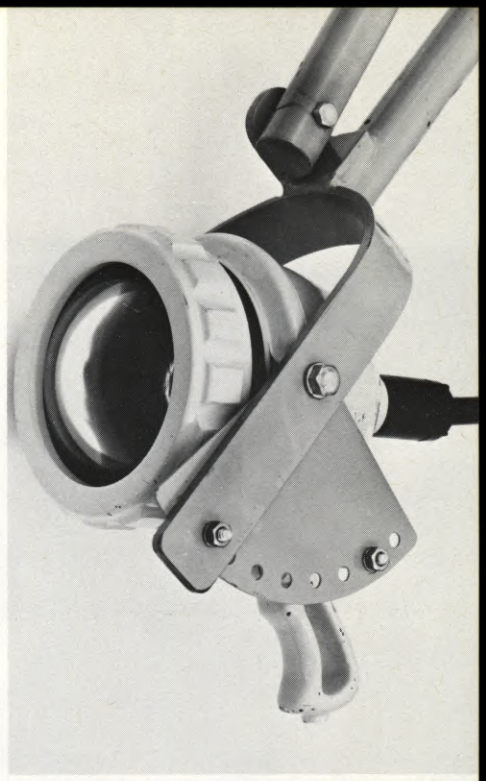
Work began immediately.

CAMERA TRANSPORT

The deep-water, high-pressure environment dictated the shape of the pressure housing and camera transport. I chose the cylindrical shape, due to our experience with these shapes and the ease of manufacturing and testing. The pressure case is eight inches in diameter and twenty inches in length. With a 5/8" wall using 7075-T6 aluminum, the maximum operating depth is 22,000 feet.

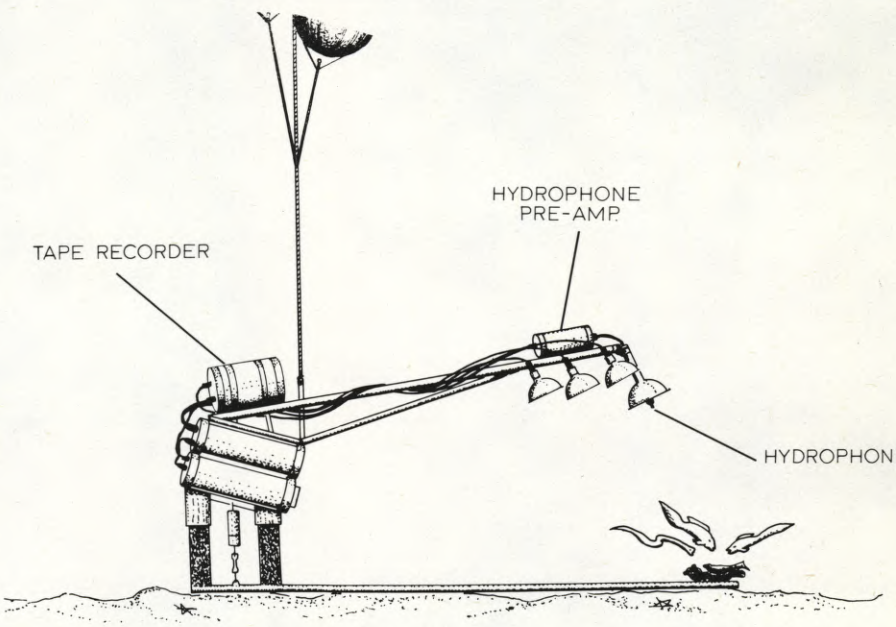
I investigated various film transports that were available and readily adaptable and concluded that a model 70 Bell and Howell film gate and shutter mechanism would fit my requirements. The chassis was built to accept a 400-foot spool of film rather than cores, so that sea-going technicians could load the transport in subdued light rather than in the dark. The film is driven through the transport at 24 fps by a 12-volt, electronically governed motor through a series of reduction gears. This motor has a speed fluctuation of plus or minus one percent within the temperature ranges of the deep ocean. It comes up to normal operating speed within a fifth of a second. A twelve-volt torque motor is

Continued on Page 476



Used with experimental camera, converted diver's lamp has control circuit programmed to turn it on every ten minutes for eleven seconds.

FIGURE 4



FREE VEHICLE CINE CAMERA SYSTEM
WITH SYNC SOUND

"LOST HORIZON" FILMING

Continued from Page 453

saying: "Oh, they've got a pictorial disc in front of the lens."

QUESTION: Although the monastery set was located on the backlot at Burbank Studios, I feel that the picture gains great scope and pictorial impact because of the sequences shot at the Fox Ranch. Can you tell me something about that phase of the shooting?

SURTEES: Frankly, it came as a surprise to me when they said that we were going to do Shangri-La, the most glamorous place in the world, at Fox Ranch. I said: "Wait a minute—this sounds like a quickie." But the fact is that they spent a fortune on transforming Fox Ranch into Shangri-La. Every day they'd have thousands of fresh flowers, all set in the ground by hand and a crew would spend all night replacing them with more fresh flowers for the next day's shooting. The lighting out there was something else. For example, the torchlight parade that takes place following the death of the Grand Lama—we ran that parade for a quarter of a mile and rigging the lights for it was a tremendous operation. Most of the rigging out there went fairly smoothly, however, because it was well prepared. We simply buried cables all over Fox Ranch so that we didn't have to move generators or anything. It was just like plugging in on a house circuit. All of this cost a hell of a lot of money for rigging crews and equipment, but it was the only way we could shoot and stay on schedule. We did the same thing at the airport in Tucson. All of that was rigged in advance, too.

QUESTION: I must say that I've never seen the Fox Ranch look so green and beautiful in a film before. Did they have to spray the foliage to get it to look that green?

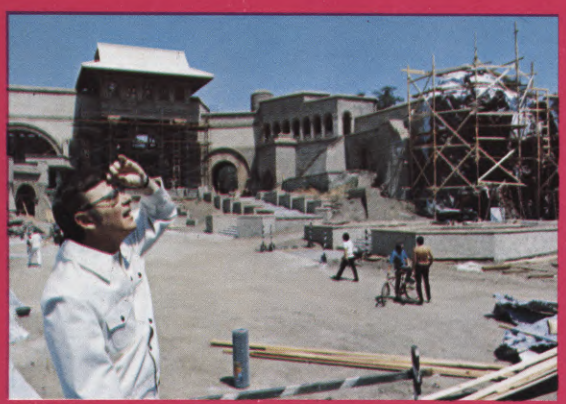
SURTEES: They put in a lot of fresh sod and installed a special sprinkling system. The sides of the mountains had been sprinkled for a couple of months before we got there. You can't imagine what it cost. Then, too, in those sequences, we tried to tie water into just about every shot—the lake, the stream, the waterwheel. We even turned on the waterfall, although we didn't stay on that too long because they didn't want people to recognize it. That waterfall used to be in every picture Fox made.

QUESTION: Where did you shoot that sequence where they come from the raging snowstorm, walk through the tunnel and come out into the warm summer sunshine of Shangri-La at the other end?

SURTEES: We shot it—of all places—at Bronson Canyon, right in the heart of Hollywood. They had those hills covered clear to the top with artificial snow, but to me it looked like they'd used bed sheets. We decided to shoot it at night instead of in the daytime in order to take the curse off it. We used the torches and there was a storm going on with wind and lots of snow blowing—the more snow the better, to cover the background—and it worked beautifully. We shot from both ends of the cave, panning from one end to the other. The question was: Where do you put your lights? I had no choice. I couldn't put the lights where they should have been. I could only put them in the one place where they wouldn't show in the picture, but it turned out fine. The producer, Ross Hunter, was delighted with it. He came down to the set with film clips to show everybody how good it was.

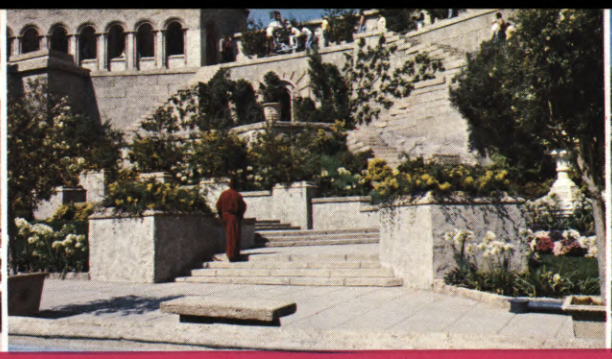
QUESTION: With limited lighting in that dark tunnel, it must have taken some doing to keep things looking good as you panned around to the brightly sunlighted Shangri-La end of the tunnel.

Continued on Page 494

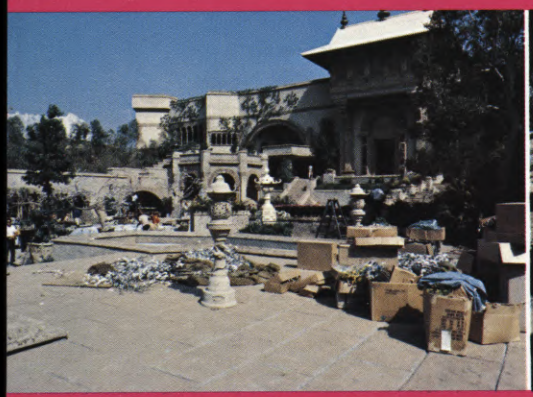


(LEFT) Producer Ross Hunter observes construction on giant Shangri-La set taking shape on the backlot at Burbank Studios. Far from being a figurehead producer, he is an astute working technician, always on hand to supervise each phase of production. (RIGHT) The crew sets up for a dolly shot at the 20th Century-Fox Ranch in Malibu Canyon.

(LEFT) Camera dollies ahead of torch-carrying procession in the snowy wastes of Hollywood's Bronson Canyon. (CENTER) A huge water sluice complex, built on the 20th Century-Fox Ranch, serves as a giant prop for a musical number. (RIGHT) Focal point of the number is waterwheel at the bottom of the sluice complex. In the film, it is designed by engineer George Kennedy to eliminate need for carrying water by hand.


(LEFT) Technicians set up for filming of a sequence at the ranch. Hillsides were irrigated for months before the start of shooting in order to insure rich green foliage. (CENTER) Thirty six Titan arcs—probably all that there are in Hollywood—had to be rigged around perimeter of Shangri-La set to light the vast area. (RIGHT) Crane is moved into position for balcony shot.



(LEFT) Designed by Preston Ames, the huge Shangri-La lamasery set was built from scratch on four acres of the Burbank Studios backlot. It was a "continuous" set, extending 360 degrees and allowing for camera shots from any angle. (CENTER) A corps of greens technicians worked for months planting seeds and live foliage to dress the vast courtyard area. (LEFT) Several terraced water pools added pictorial interest to the Shangri-La set.



(LEFT) In the opening sequence of "LOST HORIZON" (filmed at an abandoned airfield near Tucson, Arizona), a gas dump is purposely set afire as a landing beacon for planes after the enemy bombs the power generator. Flames from the blaze could be seen a half-mile away. (CENTER) The crew basks in the warm glow during filming of fire sequence. (RIGHT) Red gelatines in front of the lamps lent the scenes a ruddy tint, but red was kept off the faces as much as possible.

(LEFT) Giant "sky-hook" crane lifts crew in cage high above snowcapped mountain backing. (CENTER) Chapman crane, with camera mounted, moves in on plane "crashed" against mountainside in Bronson Canyon. (RIGHT) Norwegian star, Liv Ullman, takes a ride on the crane during set-up for a scene at 20th Century-Fox Ranch. Although there is considerable camera movement in "LOST HORIZON", it is smooth, unobtrusive and always motivated.



UCLA FILM-MAKERS

Continued from Page 447

ment is that it is part of the University and the bureaucracy of a large university does not always work well with the teaching and creation of film. At the moment we are on the quarter system, so people are expected to do things in ten weeks. Well, ten weeks might not be a natural time to make a film or to learn how to direct an actor. But as a student, once you learn to deal with the bureaucracy and get that out of the way, this department is extremely well-equipped, and so there is the opportunity to use whatever equipment you want without spending a lot of money on it.

"I have been here as a student and faculty member for five years and it is very convenient. Also there's a community of film-makers which is really very nice. If you get an idea and want to shoot something there are ten people without any big hassle who are willing to go and work with you on it for a few days. It's very nice when you're hung up in your editing room and you've gone over the same cut twelve times and you don't know what's wrong to be able to walk outside and have your choice of twenty editing rooms. You knock on somebody's door and say, 'Look at this for me' and he'll say the obvious thing and you do the same for him.

"There's a great deal of sharing and, because it's a community of young film-makers, there's always something in the air. A lot of bad ideas are in the air and bad ideas always lead to good ideas or are eventually rejected anyway."

Lester's most recent film was a comedy or what he calls an adult fairy tale. "It was inspired by the Goebbels story, THE NOSE. It's about a guy who loses his nose. He goes in search of it and has a variety of adventures and finally does track the nose down after a chase and a big finale." Professional actors worked with Lester on the film but will only be paid if the film makes money. Most of the crew were either students or former students.

A 28-year-old graduate student working on his thesis at the time I interviewed him, Tomas Mendoza has since received his Master degree and is now working on films in South America.

"Film has not reached a great level of development and I feel that there is still a great deal to be done in film. Not so much technically, but aesthetically. I think that since the development of sound film, people have been stuck in a certain kind of technique, a certain approach to film, which has held it back and we're reaching a point where film can take a new leap forward.

"I think the changes that are beginning to take place in the approach of upcoming film-makers will be different from the social standpoint, from the aesthetic standpoint, and in terms of their use of the materials.

"It's inevitable, really, that tape or electronic systems will take over. The whole process by which film is made is still in a very primitive stage. It's still in a very chemical, very physical stage. The silver halide crystals on the film, the way you do your editing, physically cutting little shots and putting them together. This is all in a non-technological stage. I think the electronic processes where you can do your optical effects and your editing at the same time will really do a lot for the creative aspects of film.

"Another drawback to film is its expense. Not many people are able to get into it. As film goes into the electronic stage, perhaps the equipment will be costly but the materials will be much cheaper. In this way film, or the visual medium, can be made accessible to more people. And by making it accessible to more people you will find a greater expression of the general consciousness. It won't just be the expression of a certain elite which is either fortunate enough to be at a University or fortunate enough to have the money or the connections to make film.

"I'm very much involved with making documentary film because, like any other visual medium, you can capture reality. Film is too often used in a fantasy way, rather than to show people things about the real world which exists around us. One of the problems today is the problem of alienation. We don't know what's happening next door or in the next country—we don't know anything about other people.

"The visual medium, by its power, can bring us into a vicarious experience. It can inform us emotionally, intellectually, and in many other ways about what's happening in the real world. That's one of the things I like about documentary."

My impression after talking to these and other students in the film department at UCLA is that as in any other field some will excel while others will be mediocre or fail. There are many creative minds in this department and it is these students who will fill the limited number of jobs available in the movie industry. Further, whether the entrenched producers and directors like it or not the simple passage of time will eventually push them aside and bring the "new blood" into the profession and, with it, new techniques and new ideas. ■

BRINGING REALITY TO FILMING OF "THE MAN WITHOUT A COUNTRY"

Film story of a man who rejected America is photographed with great realism by cinematographer who adopted it as his country

By ROBERT A. FISHER

It is ironically appropriate that Edward Everett Hale's classic tale, "THE MAN WITHOUT A COUNTRY," was filmed for television by Andrew Laszlo, ASC. The story is that of a man who rejected the United States; the filming was done by a man who adopted the country as his own. Both came to love it.

In Hale's fictional story, Army Lt. Philip Nolan, played in the film by Cliff Robertson, is tried for complicity with Aaron Burr during the latter's attempt to achieve, through separatist government, what he was unable to do at the polls. During his court-martial, Nolan angrily blurts out that he never wants to hear of the United States again.

That, ultimately, is the judgment handed down, and for the rest of his life—a period of some 50 years—Nolan

(LEFT) Director of Photography Andrew Laszlo, ASC, checks final camera angle before shooting night-for-night scene on location in Mystic, Conn. for Kodak-sponsored 90-minute ABC-TV special, "THE MAN WITHOUT A COUNTRY". (RIGHT) Director Delbert Mann discusses strategy with Laszlo before shooting of sequence on deck of *"The Rose"*, replica of a frigate located at Mystic.

(LEFT) Director Mann (center) and second assistant cameraman Vincent Gerrado review camera angle with Laszlo, while on location at Newport, Rhode Island. (RIGHT) Setting up for night dance sequence, with deck of *"The Rose"* at Mystic serving as open-air "ballroom". In order to achieve requisite depth of field for action, 200 foot-candles of light were necessary, but places to hang lights were few. Problem was solved by force processing.

(LEFT) Director Delbert Mann runs through scene with Robert Ryan, Cliff Robertson and Guy Spaull, prior to shooting in Mystic, Conn. (RIGHT) Robertson, portraying Lt. Philip Nolan, takes command of a gun crew during filming of battle sequence between American Naval vessel and a foreign ship. Such scenes were shot aboard land-locked ships and pitch was simulated by installing camera on improvised mount made of inflated innertube sandwiched between two sheets of plywood.

lives aboard a succession of U.S. warships, where the crews are forbidden to mention or discuss the United States in his presence.

Cinematographer Laszlo was born in Hungary. He showed an early inclination for photography, and was beginning an apprenticeship at a Budapest motion-picture studio when World War II erupted and ruined his dream of a cinematography career in his native land. In 1947, he emigrated to the United States to seek a job—any job related to photography.

His first work was taking baby portraits; then he served as an in-plant photographer for a company manufacturing wallpaper. Later, to do movie work for an industrial film producer in Pittsburgh, he lived away from his family five days a week, commuting to his New York home on the weekends.

The big break came when he was hired as camera operator for "NAKED CITY," one of the first location-filmed TV series. Today, Laszlo says, there is virtually no place in New York that doesn't evoke for him some memory of "NAKED CITY" or other films he made there.

During filming of the series, Laszlo became a full-fledged Director of Photography, and was tapped ultimately to film a series of theatrical movies, including "ONE POTATO, TWO POTATO," "THE NIGHT THEY RAIDED MINSKY'S," "THE OWL AND THE PUSSYCAT," "THE OUT-OF-TOWNERS," and "LOVERS AND OTHER STRANGERS." His latest, "CLASS OF '44," is scheduled to be released later this year.

Signed for Special

When producer Norman Rosemont and director Delbert Mann were gathering a crew to film "The Man Without A Country"—a 90-minute ABC-TV special to be presented by Eastman Kodak Company April 24 at 8:30 p.m. (EST)—Laszlo was an obvious choice as director of photography. Because of his work in the east, he was familiar with locations in Mystic, Connecticut; Newport, Rhode Island, and Fort Niagara, New York. Laszlo eagerly accepted the challenge.

The result is a film that clearly adds to the pathos of the original story. If a word had to be chosen to describe its effect on viewers, the word would be "believable."

How Laszlo achieved this is perhaps best understood through a description of how he filmed the death scene. Nolan, now an old man, is dying. His last wish is for the captain, who is by now an old friend, to tell him something about the country he had forsaken.

"We had to capture the visual gloom of the impending end," says Laszlo, "and we also had to denote, in a few minutes on the screen, the passage of several hours during which Nolan and the captain talk. The technique had to

Continued on Page 472

Camera operator Richard Katina checks a camera angle prior to shooting scene of Robert Ryan aboard ship at Newport, Rhode Island. Many times, in filming on deck, camera was mounted high up on gyb arm, with crew rocking the gyb at right angles to the optical axis in order to simulate pitch effect.

THE FILMING OF "THE MAN WITHOUT A COUNTRY"

Continued from Page 471

be almost imperceptible, to make the viewer conscious of the passage of time, but not of how we created the illusion."

Working in tight quarters, with a Mitchell BNC camera and Eastman color negative film 5254, Laszlo did it with lighting. The scene is a small cabin and, as it opens, the dominant light is late afternoon sunlight. As the sun goes down, a candle and oil lamps are lit, and at the end of the scene the captain turns out the lamps, leaving only the candle to illuminate Nolan.

"Through this symbolism we know Nolan has died," recalls Laszlo. "There was a period—a long one—when you couldn't do this for television. You had to fill the dark corners with light, and you had to dim the bright areas to avoid flare. But now, with high-speed, sensitive negative film and greatly improved television reproduction, you can expect contrast and tonal quality that pretty nearly match what you see."

Tight Scheduling

As with most television specials, the shooting schedule was constricted. Production for the feature was completed during four hectic weeks in September and October, 1972. Essential to meeting this tight schedule, Laszlo relates, was painstaking preparation coupled with real devotion on the part of the cast and crew. Director Mann and Laszlo were on location weeks ahead of production.

Authenticity was the prime criterion in selecting locations. Historic Fort Niagara was chosen for both the court-martial of Nolan and the final *mea culpa* scene in which a stone memorial is dedicated to the deceased outcast. Newport supplied an original colonial courtroom for the trial in which Burr was acquitted, and a period home that served as the office of the Secretary of the Navy.

A small studio was set up in an abandoned Newport gymnasium, where replicas of the cabins that housed Nolan on different ships were constructed. The side of a U.S. warship that took a direct hit and exploded in the story also was built there.

The "Rose," a replica of a frigate based in Newport, was made to serve as a number of ships by changing angles of view and minor redressing. A wooden whaler in Mystic, the Charles W. Morgan, also became a number of ships carrying Nolan.

Tourists See Filming

Filming aboard the Morgan was com-

plicated by the need to schedule production around crowds of tourists. In this case, local authorities worked with the production crew by limiting tours to mid-afternoon hours when the traffic was the heaviest. During these periods, Mann scheduled scenes away from the main deck while scores, and sometimes hundreds, of visitors watched in fascination.

Each day's film was shipped to TVC Laboratories in New York City; the processed dailies were returned to location the following afternoon and viewed that evening. Because of the changing weather and lighting conditions of location shooting, Laszlo was in daily telephone contact with the lab to inform them of problems and answer their questions.

Night Scene Problem

One scene that presented special difficulties was a night dance on the deck of a ship supposedly docked in Milan. In the action, Nolan was embarrassed by a confrontation with the wife of the American ambassador. Laszlo's problem was to get appropriate establishing shots across the entire ship deck.

To get the depth of field he wanted, Laszlo needed a minimum lens opening of F/4 which, according to film specifications, required 200 foot-candles of light. "We were working aboard the Rose," he remembers, "and there wasn't any place to hang a lot of lights. We had only two masts, which were both in the picture, and the lights we hung around the rigging provided only about 50 foot-candles or less on the deck."

Laszlo's solution was to have the film force processed at the lab. As a test, he photographed a dress rehearsal of the scene and had the lab process it in three pieces: one as normal, one forced to the full capability of the lab, and one forced about halfway. Upon seeing the results of the dress rehearsal filming, Laszlo determined how the final filming of the scene should be processed.

"I had a good idea of what to expect," Laszlo says, "but I wanted to check the first results before processing the second shot. This way, the lab could make the proper adjustments in processing to match the second shot as closely as possible with the rest of the film."

Ingenuity Pays Off

The same scene demanded additional ingenuity. The story called for other ships to be anchored about 1½ miles offshore. Because it was a night scene, it was agreed that the outlines of the other ships could just be suggested by properly placed, lighted portholes. Instead of

sending a lighting crew to achieve the effect, Laszlo had circles, about a foot and a half in diameter, cut from a reflective material. Then the "portholes" were staked into the ground on the other side of the bay, about a mile away. Laszlo had only to wait for darkness to get the appropriate shot. He set up a 5,000-watt light at the camera position on the ship and aimed it at the reflective material. The effect was the same as if the light had been generated from the other direction.

Good Simulation

Though most of the action takes place at sea, the cast and crew actually spent only one day afloat. The remaining "at sea" scenes were shot on landlocked ships. To simulate the pitch and roll of the ships for these scenes, Laszlo built a camera mount by sandwiching an air-filled innertube between two sheets of plywood with the corners tied together by a shock cord.

This mount, with the camera on it, was installed on top of a gybe arm and, as scenes were filmed, a member of the camera crew rocked the gybe at right angles to the optical axis. The result was a barely perceptible movement.

"We did it the first day on an experimental basis," Laszlo says. "The first scene we shot was of a British admiral surrendering his sword to an American sea captain on the pitching deck of a warship. Actually, the ship was resting in gravel, but the dailies showed it pitching and swaying, and we knew we had the right effect. We used the gybe throughout the rest of the film whenever the action was at sea."

Scene Presents Problem

Another challenging scene involved the filming of chained slaves in a ship's hold. The scene was conceived to depict the indifference with which the slaves were treated, and Laszlo wanted it to be believable.

"Nobody was comfortable," he relates. "It was hot, humid and cramped in that hold, with 50 or 60 'slaves' lying on wooden planks, plus the cameras and crew. Everyone was sweating, and it was *real*," he says.

There was a lot of temptation under this pressure, he adds, to light the hold as he would a set just to complete the scene. But he decided that wouldn't be realistic because the darkness and the shadows in the hold would make the scene believable.

Laszlo used the light filtering through an open hatch and balanced for it with a few portable 750-watt lamps. He also had the film force processed by one stop.

"The feeling I wanted here was one of brutality and coarseness," says Laszlo. "The lighting helped but, by force processing the film, we knocked down its pleasant tonality and brought out enough grain to make the scene look as coarse as the story we were telling.

"I don't force film unless I want to achieve an effect," he says. "It usually isn't necessary when you're working with a color negative film with an exposure index of 100. But the object of any film production is to make the audience believe what it sees and, in this scene, forced processing was the means to that end."

Like any other production, there were many other situations where the ingenuity of the Director of Photography and crew were tested and the right answers were found. In each situation, after pondering various alternatives, Laszlo relates that he always came back to the same conclusion.

"I did what was realistic," he says, "because I believed in the story, and I wanted the audience to believe with me. That's what a director of photography has to bring to any assignment—not only a bag of tricks, but also a commitment to reach through the camera with some feeling that relates to, and is a part of, the story." ■

UNDERSEA CINEMATOGRAPHY

Continued from Page 465

used to drive the takeup spool. A separate battery supply is used for the camera. This eliminates high-level electrical noises from the camera motor which sometimes interfered with the control circuit in the experimental model.

The film is laced over the rollers from the supply spool, through an "end of film" switch, into the film gate and onto the takeup spool. The "end of film" switch is held in a closed position, thus keeping the control circuit operating, by riding on the edge of the film in the area of the sprocket holes. Upon passing the end of the film through the switch, its plunger drops through the guide, shutting the entire system down. This prohibits needless drain and subsequent damage to the batteries.

I was satisfied with the quality of the lens used in the experimental camera and I used it again in these units. It is a 10mm wide-angle F/1.6 Kern Switar lens. Using Ektachrome 7242 and the new lighting system, the lens setting is F/2.8.

LIGHTING

Lamps have to be relatively simple in design for use in an underwater environment; otherwise, they become bulky and heavy to pressurize. Sylvania manufactures 30-volt, 350-watt, single-end, tungsten-halogen lamps. Three of these lamps were placed in pressure housings with open reflectors. Since the unit is not mobile other than on its trip to and from the bottom, there was no need to utilize enclosed reflectors such as a diver might use to reduce drag.

The lamp housings and reflectors are surrounded by wire protection cages to absorb shock and accidental denting from handling on the ship. The use of three individual lamps provided better control and flexibility of light distribution than one lamp of the same total power.

BATTERIES

With the change of lamp power consumption from 250 watts to 1000 watts and the need for more "lamp on-time" due to the increase in the length of film, (from fifty to four hundred feet), we needed more powerful batteries. Twenty Yardney HR 21 Silvercells worked very well, producing approximately 41 volts at the battery terminals. The reduced temperature range found in the deep ocean, along with voltage drops through the control circuit and power cables, provided the correct voltage and color temperature

for the lamps. These batteries provide a longer high-level plateau of discharge before dropping off abruptly. This has resulted in even exposure through several missions before recharging is necessary. Normally, however, we recharge them after each mission if they will accept the charge.

CONTROL CIRCUIT

Gordon Cooke, an electronic design technician here at Scripps, came up with a preprogramming circuit that was operated by a crystal-stabilized clock which provided variable programming for the filming missions. It allowed for the manual selection of three variables: delay, interval and duration. The delay switch, which is usually set to allow the camera system to reach the bottom before it commenced filming, can be set for 1/2 hr., 1 hr., 2 hrs., 4 hrs. or no delay. The time between shots, when the camera is shut down, is selected at 7.5-min., 15-min. and 30-min. intervals. Camera "on time" can be selected at 10 sec., 15 sec. and 25 sec. These parameters were chosen to include normal operating requirements, but they may be changed to suit special situations by changing the chips in the circuit board.

There are two additional functions: one to activate the program and the other to test the system without upsetting those parameters already initiated by the activating switch. These two switches are duplicated by reed switches, thus allowing these two functions to be activated after the system has been closed up in its pressure case by passing a magnet over the area of the reed switch.

VIEWING ANGLE

In order to change the viewing angle, there were several problems that had to be considered. As experience has taught us in using the free vehicle, it is not advisable to place anything directly on the ocean floor which we want to retrieve. To do so may result in the instrument sinking into the sediment or getting trapped in rock formations, making questionable the possibility of getting it back. There was an element of safety in deploying the camera with the lens looking down on the subject. The camera was suspended about ten feet off the floor. Only the ballast weight and bait sat on the floor and these were jettisoned anyway.

The camera also had to look at the bait since that was where the bulk of the activity was presumed to be. There had to be some rigid structure between the camera and bait, otherwise, the currents could swing the camera around at random. This structure had to be

made so that it could be handled with relative ease on board a ship; a large frame would not do. It also had to be inexpensive since it would be discarded at the end of the mission.

A number of approaches to the problem were brought to the drawing board stage and discarded. Finally I settled on the system shown in FIGURE 2. It is a piece of pipe on which two legs have been welded. These legs fit into pockets under the camera frame and are held in place by the releases which are secured between the legs. A turnbuckle is used to take up the slack. Bait is attached to the end of the pole which is always in view of the camera. Upon release, the electrical timer or backup release breaks its attachment to the ballast pole and the camera lifts off of the legs and returns to the surface. See FIGURE 3. This method is now being used on the still cameras as well as the cine systems.

RELEASES

Two releases are employed in the cine camera system. The primary release is a precision electronic timed device, designed by Meredith Sessions at Scripps. A crystal-controlled clock activates the firing circuit after a preselected time and fires a squib which severs its connecting link to the ballast weight. The backup release is made of magnesium rod and works on the principle that salt water will corrode the magnesium at a known rate. Release accuracy within one to three hours can be accomplished by cutting the magnesium to certain diameters.

MISSIONS

The deep water cine camera system has been used extensively off the Southern California coast, East Africa and in the Humboldt Current off Chile and Peru. Some harrowing experiences have occurred. Ever see a dolly shot made several thousand feet beneath the sea? On this particular mission our charts indicated that the bottom was made up of steep slopes and jagged outcroppings of rocks. When we got the dailies back and projected them, we found our camera sliding down a slope apparently still on its way to deeper depths, the bait pole digging up clumps of rock and scattering bentic creatures in its path. We never saw the bottom at all on several missions. It was apparent that the camera was sitting on a ledge looking out over a submarine canyon or valley.

Most of the fish we photograph on the ocean bottom are Grenadiers or rat-tails. This is a deepwater fish. Along the shallower reaches, hag fish, an eel-

like creature, and sable fish, known as black cod, have been most abundant. Once at the bottom of the Patton Escarpment, on the outer edge of the channel islands, two and one half miles down, we encountered a small octopus which was just a little larger than an orange. How did we know this? One of our technicians got a bright idea; he suggested we see if fish were partial to citrus fruit. An orange was placed on the bait pole along with the regular bait. There were no takers for the orange, but the little fellow appeared to be checking it over, fondling it, sitting on top of it. Hmmmm, sex has gone abyssal.

Off Aldabra Island in the Indian Ocean, we encountered cow sharks, about eight to ten feet in length, which would come crashing in to get the bait, but somehow, would end up missing it completely and, instead, take a bite out of the coral rock. There has only been one mission where we did not photograph any fish. This was in the Santa Monica Basin. The camera did, however, photograph some medusa drifting by. We have photographed many types of crabs, starfish, eels, etc. Most of our work has been accomplished in depths over two miles, our shallowest being one mission in 700 feet of water.

FISH LIP-SYNC

On one occasion, off East Africa, we added lip-sync sound capability to the system. See FIGURE 4. Ever hear a fish talk? A tape recorder with pilot tone head was piggy-backed, or maybe "fishy-backed" is more appropriate, on the camera frame in its own pressure housing and connected to a special deep water hydrophone. The camera motor was connected to a sync generator and an automatic blooping signal device was designed and built into the system. The results? Not too successful. Underwater acoustical problems amplified the camera transport noise and we could not hear anything over the clatter. Unfortunately, there were no loud-mouthed fish around.

The fish lip-sync idea was temporarily abandoned due to the fact that it would require complete isolation of the camera from its pressure case in much the same manner as a normal sound camera is damped from its sound blimp. Aluminum tubes large enough to house the camera and its insulation are hard to come by, especially if required to resist the pressures we are working in.

STEREO

Currently, we are conducting missions in stereo. Two images are taken an eye-width apart and placed side-by-side on the same film. They are later fused

together with the use of a special projection lens and stereo glasses. This system gives depth to the underwater scene and, to some extent, allows closer estimates as to the size and shapes of the creatures viewed. Because the lens system is somewhat larger than our regular lens, a special lens port had to be constructed. This port is two-and-one-half inches thick by six inches in diameter. Due to the larger hole diameter in the end cap, the additional thickness was required for strength.

Aside from the scientific use of the film, some sequences have been shown on CBS's "BLUE ZOO", a special report on oceanography, and a twenty-five-minute film, "LIFE ON THE ABYSSAL FLOOR", was shown at the 1971 Underwater Film Festival in San Diego.

THE FUTURE

Additional experiments are to be conducted, as well as more of our regular camera work. A time-lapse cine system is presently under development for use in detecting sediment shifts on the ocean floor over long periods of time. This system can also be used to detect the activity of small crawling types of creatures. Also, attempts will be made to photograph micro-organisms in mid-water in the scattering layers. The use of macro-lens and even micro-lens seems inevitable as we continue our probing of life in the deep oceans.

There is, of course, the job of continually improving our methods of deployment, viewing, lighting, etc. These are all more difficult than they would at first appear. It is, for example, relatively simple to change the lighting for a motion picture shot on the surface. One can physically place the light where he wants it, but this becomes a very complex set of problems on the ocean floor. Does the change make the system heavier? How much flotation is required to get it back to the surface? What type of framework has to be constructed to suspend the light over the area you want lit? Can it be handled easily on board ship, especially in rough seas? How much additional power is required? What is the loss of power over an extended length of cable? How can you release it from the bottom? The problems compound themselves.

Refinement does come as our technology and experience in the field broaden, but it seems a slow, painstaking process. It comes because there is a demand for it. "What was that? That thing that lurks just at the edge of the light, covered by the cape of darkness. That creature that has hesitated to place its image on your film. We must find out." ■

PRE-PRODUCTION PLANNING

Continued from Page 457

ferson. And when one of Claude's electronic doodads causes the Sheriff's car to go out of control and run amuck in a field, we cranked at 6 fps for an hilarious result.

The remote-controlled model sport car would not run over the rough dirt surfaces and blacktop as fast as we would have liked, so we increased its velocity on film two-and-a-half times by photographing it at 9 fps.

Of course, when operating the camera at a film flow speed less than the standard 24 fps, compensation must be made for exposure. This we did by using heavier 85ND filters to minimize having to stop down.

This production was no exception in utilizing the skill of the grips in judiciously hanging greens in the foreground about the frame line to pretty up the composition and/or to hide otherwise obtrusive immovables (such as a rather extensive modern housing project in the background of certain needed camera angles).

Although our exterior shooting was pretty well centered in the barnyard area, where short range and limited moves of equipment and personnel were all that were required, we did have to move up a hill to high ground, or down the dirt road a piece, occasionally. When such a move was necessary, the entire crew pitched in and loaded what equipment was needed—camera dolly, the cameras and accessories, lights, reflectors, stands, sandbags, apple boxes, props, sound gear and water—on a half-ton pickup truck and headed out. Such moves averaged less than half an hour. We maintained an average of close to twenty-four set-ups per nine-and-a-half hour shooting day.

Since the area is known for its population of rattlesnakes, the crew was advised to wear high-top boots. The second morning a huge rattler turned up by an outbuilding while we were moving some of the ranch equipment for a set-up. Needless to say, after that happened, everyone wore boots to work daily, and, of course, not another rattler showed up.

One of the biggest cumulative delaying factors (taken into account during pre-production planning) was airplane noise. It caused more delays than we had anticipated during our scouting of the area. Evidently, an instructor from one of the several valley airports acquired some morning students, and so the plane would appear overhead for half an hour at a time every hour or so each morning. This was in addition to

occasional passing military and civilian aircraft which used the valley air corridor during the day.

POST-PRODUCTION

A useful rule of thumb to apply when figuring editing time on a tight, low-budget feature is two to three sixty-hour weeks of editing for every week of production, depending upon the type of film being shot. Since we were to have three weeks of principal photography plus two or three days of pickups and inserts, and were dealing with a comedy having an original music score, we budgeted for ten sixty-hour weeks of post-production time, to accommodate picture editing, music scoring and recording, sound transfers, the editing of voice, sound effects, and music tracks, the preparation of titles and opticals, and sound dubbing.

Our assistant editor/sound cutter, Don Schneider, was put on early to set up the editing room in our production offices for the convenience it would afford. He would sync and have coded the voice track with the one-light, uncorrected color workprint, having our dailies ready for an 8:30 PM screening each evening. Besides saving money, the principal reason for ordering one-light, uncorrected color dailies is to determine whether the exposed negative is within printing range. Our CFI dailies printed at light 26R, 20G, 14B for the interiors and at 30R, 27G, 18B for the exteriors, near the middle of the printing scale, so we were all right in this department.

During our look at dailies, director Hillman was primarily concerned with the action, dialogue delivery, character interpretation and film coverage, while I scrutinized the film from a technical viewpoint—exposure, lighting balance, framing, camera and zoom moves, and the mechanical functioning of the camera and sound equipment.

Our film editor, John Winfield, began cutting sequences during the middle of the first week of shooting. We would screen these sequences right after looking at our dailies and then follow up with a rap session.

Post-production went well, as some clever comedy bits hit the editing room floor in the interest of overall pacing. By the third week following production, we had a first cut. Polishing—perfecting critical comedy timing and overall pacing of the picture—took two more weeks.

In the meantime, the composer, who had visited the shooting site and had viewed most of the rushes and the first cut, was roughing in his musical notions and was ready to start scoring.

During the next two weeks, as each

reel was finalized, timings were taken by the composer. Then the dialogue track was pruned of its minus-dialogue production sound and placed on a separate track, augmented by another track of appropriate library sound effects. The music cues were laid in on two tracks as they arrived from recording and transfer.

During the final week, while opticals and titles were being cut in, cue sheets for each of the dialogue, sound effects, and music tracks plus the sound effects loops were being prepared for the dubbing session at Glen Glenn.

Following the successful dub, and before cutting negative, we previewed the finalized workprint, now with all the titles and opticals included, interlocked with the composite mag track, before what we felt were audiences representative of our intended target audience—the rural and suburban family. The response was both gratifying and instructive. As a result, we did a moderate amount of pruning and readjusting, re-dubbed, and *then* cut our precious negative.

It was our intention when we made *"THE MAN FROM CLOVER GROVE"* to entertain and please a family audience, and with the feed-back we received from our representative audiences, we feel that our film has achieved this intended objective. On the money side, this decision to preview before cutting negative, was relatively costly, but well worthwhile, because the box office potential was enhanced. After all, that is where it counts because that is where decisions pay off.

SUMMING UP

In summing up, our day-end production meetings, our evening look at dailies, our extensive weekend skull sessions, during which we evaluated our progress and made adjustments in our plans, served us well. Even with some unexpected equipment failures–a surging generator with a faulty voltage regulator and the resulting burn-outs, a separated camera power switch cable, some minimal crew illness, and the airplane interference–we managed to come in on schedule with some adroit rescheduling of shots by Director Hillman and First AD Grillo, efficient repairs and moves by our gung-ho crew, and fast study by our fine cast.

It was a pleasant experience working with this cast of top-notch, first-take comedy actors. They were a pleasure on and off camera.

The crew performed well in all categories, often rising above and beyond the call of duty, hustling to get set up, or to break and move to another shoot-

ing site.

The rather rare Arri 300 configuration (I understand that there are fewer than six in use in the United States) worked extremely well throughout the production.

We utilized more than ninety-five percent of the equipment we had and, with post production inserts, we exposed every frame of film ordered.

Even with the speed of the shooting schedule, we were able to introduce appropriate camera moves with the crab dolly, the light-weight platform dolly, and the zoom lens to give sufficient variety to the camera coverage. In addition, our pre-production rigging procedures and the light-weight electrical equipment made for efficient shooting. As a matter of fact, the positive and cooperative attitude of cast, crew and staff would have made possible the shaving of a day or two off our fifteen day schedule had not the equipment failures occurred and had not that flight instructor selected our canyon shooting site for his students' aerial maneuvers.

To facilitate production, most of the category heads—cameraman, gaffer, construction supervisor, prop master, wardrobe mistress, makeup artist, utility and film editors, along with the assistant directors and script supervisor—were given adequate pre-production time to plan and arrange their materiel needs.

Post-production went about as planned, with some delays caused by several distributors desiring an early look at the film.

Having producer responsibilities while also functioning as a member of the production crew is not recommended for those who require their eight hours of sleep. Nevertheless, it can be, and was, challenging and worthwhile.

Although directing photography *and* operating the camera is not necessarily the most efficient way to go on most tight low-budget features, it worked well for this one because of the long-term relationship with my associate and director-co-producer, Bill Hillman, the substantial pre-production involvement with this project, the fast-paced production schedule, advance electrical rigging of interiors and exteriors, the efficient crew, and the first-take cast. In addition, I have a personal preference for operating my own camera because, along with lighting, it is the essential tool of the cinematographer and the creative process is best served with the tools securely in hand.

In short, we had prepared ourselves —staff, crew and cast—to cope with the unexpected by being thoroughly prepared for the expected. *Careful pre-production planning does indeed pay off.* ■

CORPORATE FILM

Continued from Page 433

while dripping wet. I was concerned about the effect of the heat and humidity on the film and noticed the film emulsion did become quite sticky but caused no problems whatsoever.

We filmed kids going to a movie and walking through the Emerald Buddha and Sleeping Buddha temples—absolutely spectacular places. Back at the hotel that evening, we recorded statements of several students. These sessions, rapping with students on a wide range of subjects, were always most interesting.

Tuesday, October 17:

Shot some retail stores, students walking around the University, and then back to our hotel, Dusit Thani, to pack. It conveniently rained while we had lunch. On the way to the airport, stopped at a Disneyland kind of place and got shots of Thai dancing girls and an elephant. Left on a 3 p.m. flight for Sydney that took all night.

Wednesday, October 18:

Checked into the Wentworth Hotel, Sydney, at 8:45 a.m., exhausted. At 9 the local manager was there for a breakfast meeting to plan our stay. He and his marketing manager had developed a comprehensive schedule which included stops in Adelaide and Melbourne. We had to go to Adelaide because the factory was located there, but it seemed unnecessary to go to Melbourne for retail shots that we could get in Sydney. You can make a point just so emphatically for just so long and then you back off. (We went to Melbourne.) The rest of the day was spent shooting identification scenes and working with models at the beach.

Thursday, October 19:

An early flight to Adelaide, where they hadn't got the word we were coming. It made little difference. Still managed some good factory shots and one MOS with a mini-skirted girl by a beautiful fountain. To the airport and off to Melbourne.

Friday, October 20:

The kindest thing to say is that things didn't go well here, even to the extent that the hotel's hot water system gave out. Mike went across town to record a retailer's statement while I was filming other retail locations. He nearly missed the plane. Back in Sydney we took a ferry boat ride for harbor shots and then interviewed several students.

Saturday, October 21:

This morning we tried to shoot crowds of shoppers on Martin Place; however, not many shoppers were out as early as we were. Filmed some humorous MOS and sync interviews instead. One lovely old lady said, "I saw some girls wearing jeans on Elizabeth Street, Sydney, and I thought they looked just awful!" Back to the hotel to pack, on to the airport, and off for a 33-hour flight to London. It was light across most of the Australian Outback—very desolate country—then dark all the way to Rome.

Sunday, October 22:

Arrived in London about noon and enjoyed the luxury of a nap until dinner time. Met with Levi people, in from the main European office in Brussels, to plan the European portion of the trip. From here, Mike was heading back to San Francisco so was busily briefing Tim Van Beek, the European advertising manager who would be taking Mike's place, as to the concept of the film, the arrangements to be made, his duties as assistant cameraman and sound man, and ways in which to handle a sometimes cranky filmmaker.

Monday, October 23:

We drove around for some early morning identification shots and then to Harrods, a large, well-known London department store. Shot wide open in a kind of boutique section which displayed many Levi's. The models we were to meet at Harrods either didn't show up or looked a matronly 35. We tried to recruit others. The motorcycle sequence we had planned required driving many miles to a motorcycle shop. We dropped the models off to get changed and try out the bikes while we scouted locations. Upon finding a nearby castle, we returned to the cycle shop to learn that none of the models had bike licenses or didn't care to ride even as a passenger. Mike and I found it curious that such matters hadn't been discussed earlier. As an alternative, we walked the models around the castle and were kicked out by a good-natured park attendant. This made a better sequence than we could have planned. Back to the hotel to record student comments . . . none showed up. London didn't go well.

Tuesday, October 24:

With no little trepidation, I said goodbye to Mike who was leaving for San Francisco later in the day, and my new helper, Tim, and I headed for a 9 a.m flight to Paris. Even though Monday had been a disaster, I had confi-

SITUATIONS AVAILABLE

FILM DEPARTMENT HEAD, needed by public/educational TV station. Must know still photography, lab work, motion picture editing, sound, processing, equipment, supplies, able to train indigenous personnel. Adaptable for foreign location. Salary to $13,000 plus considerable benefits. KVZK—TV, Pago Pago, American Samoa 96799.

WRITER/FILM DIRECTOR with experience as film editor or cameraman required to head small documentary unit in UN AGENCY based in Beirut. Write UNRWA LIAISON OFFICE, Room 1801, United Nations, New York, NY 10017.

OPTICAL AND Special Effects Photographer. This is an unusual opportunity for a professional to supervise an Optical Department in one of the country's best and most progressive full service labs. If you are looking for a challenging career where you can use your experience and creativity, we have the equipment to provide it. Please write Scott King at WRS MOTION PICTURE LABS, 210 Semple St., Pittsburgh, PA 15213 or call (412) 683-6300.

COPYWRITER WANTED; Advertising agency for leading professional motion picture camera account (NYC) seeks full time or free lance copywriter for ads and collateral material. Must have cinematography product writing experience and film production background. Successful applicant will be involved in client contact. Opportunity for special account compensated assignments. Resume please: Garber & Phillipson, Inc., 1 Old Country Road, Carle Place, NY 11514.

SITUATIONS WANTED

FILMMAKER, 26, has spent over 1/3 of his life making films, here, in Africa, and now maybe with someone else who isn't afraid of the medium. I can write, shoot and edit and will go anywhere to do it. Films and resume available. J. BLYTH, 2483 N. Lake Mitchell Dr., Cadillac. Mich. 49601. (616) 775-6746.

WANTED

ECLAIR CM3 16/35 Tech. 12 or 24 volt motors, horizontal and vertical magazines, etc. CHRIST BALOMATIS, McFarland Studio, 128 East 28th St., NY 10016 (212) MU3-2323.

RAW stock urgently needed. Highest cash paid for good, unopened 16mm ECO, EF and color neg. Also need 35mm color ends (over 100') FILMEX Ltd., 55 Maitland St., Toronto, Canada (416) 964-7415.

MAJOR FILM PRODUCTION HOUSE beginning definitive film on genetics and reproduction. Seeking to buy and/or commission 16 and 35mm film footage on all aspects of the reproductive process dealing with animals and plants. Contact: PROJECT Y, P.O. Box 48917, Los Angeles, CA 90048.

CASH waiting for your used film editing or projection equipment. What have you got to sell? Write, phone or stop in. LAUMIC CO., INC. 35 West 45th St., New York, NY 10036, Ask for Ted Powers (212) 586-7666.

MISCELLANEOUS

16mm Color lab and studio in Colorado Springs, Colorado (where that funny smell is fresh air!). Production, recording and printing facilities $80,000, long term building lease available. Will consider offers and may finance a part. Call or write CARL PEHLMAN, P.O. Box 7288. (303) 636-1408.

Free from GORDON YODER, INC. 1 set zoom see rings, 1 sunshade and 1 series 9 glass filter with every 12 to 120 zoom we sell.

RENTAL

MOVIOLA console film editing machine. Day, week, and monthly rentals. Lease-purchase plans available to fit your budget. LAUMIC CO., INC. 35 West 45th Street, New York, NY 10036. Ask for Ted Powers. (212) 586-7666.

dence in Tim because he also realized it was a disaster and, as a result, had some ideas as to how to prevent those types of problems in the future. At any rate, in Paris we were met promptly, taken to the Levi office where we recorded two interviews, and then driven to the Eiffel Tower with three models to do a climbing sequence. The weather was less than clear so we had to be content with climbing shots—the "pay-off" shots failed to show much of a view from the top.

Wednesday, October 25:

Up early for Paris identification shots, retail stores, and then to the Crazy Horse theater-restaurant by noon where the 1973 line of Levi's for Gals was being presented to buyers and merchandising managers from stores all over Europe. At 3 p.m. the show was repeated for the press and photographers, and I shot about 350 feet in case it might be useful. At one point when I needed to change film, Tim wasn't around and neither was the film case. He soon returned with the film but I had missed a large part of the 50-minute show. He disappeared again. I was left with only my French-speaking assistant, with whom I couldn't communicate. I was alternating between the front and back stage, changing from tripod to hand grip, as well as sometimes changing lenses and, in between times, taking a few still shots. With cameras and batteries strapped to my body and juggling a tripod and equipment case, I felt like Dick Van Dyke as the one-man band in Mary Poppins—except that I wasn't smiling. My mood was black. Tim finally showed up apologizing for his absence, but his wallet and passport had been stolen. I hadn't thought it possible to have a good enough excuse, but losing a wallet is a tragedy, especially when you're traveling.

Since there was still some light left, we drove around Paris picking up more identification shots—street artists in Montmartre, views of Sacre Coeur, etc. On such a tight schedule, my motto had become: if there's light, shoot! Then to the airport for our flight to Brussels.

Thursday, October 26:

A meeting at the European headquarters offices of Levi Strauss and then off to a tiny town almost to the coast, where a large factory is located. Got a good exterior shot and spent a couple of hours inside. Some 400 local girls there, and in walk two guys with a movie camera! In just about every shot there were eyes peeking around something, looking at the camera. It became a game to distract the girls' attention to some

other activity so I could get a shot that didn't look gawk-eyed. Back to Brussels where we recorded interviews with Levi personnel. Some excellent statements came out, such as, ". . . Levi is a company for all the people."

Friday, October 27:

Up early for retail store shots—two excellent locations with large windows that gave plenty of light, for a change. (Some helpful feedback arrived today from my editor in San Francisco, who was assembling a rough edit as the film came in, including requests for more inside-out shots of retail stores and natural looking models in old, instead of brand new, pants.) In the afternoon we shot some general identification scenes, stopped by the office again to get a substituted passport for Tim, and were off to the airport.

We arrived in Munich very late and barely got to the hotel bar in time to celebrate the fact that today had been my fortieth birthday—and this was my third visit to Munich in a year. One of my favorite cities, but it was raining. And I felt very old.

Saturday, October 28:

Rained all day but it didn't slow us down. Shot retail stores in Karlsplatz, the Rathaus Glockenspiel, and then met our models at the Olympic Stadium for the "active-kid scenes." Our local coordinators apologized for the small number of models but felt they could have done better had they had more than one day's notice. Tim and I smiled and agreed. Which proved again, with all the letters, telegrams, and phone calls, you still should expect only a fraction of your message to get through. Back to the hotel for more interviews and a pleasant dinner with old Munich friends.

Sunday, October 29:

Early morning flight to Amsterdam. The Munich airport security was intense—we were checked three times. When we landed in Amsterdam there were two tanks to meet us. We later learned terrorists had phoned Lufthansa three days earlier and told them they would hijack a plane on the 29th. They did that morning but, fortunately for us, not ours.

We drove to Vondelpark and got many good shots in the golden afternoon light; on to the Dom, another favorite milling-around spot for kids. And it seemed that about 90% of them were wearing Levi's. Recorded student interviews back at the hotel.

Monday, October 30:

Rob Sotemann, a photographer

friend, came along with us to take stills. We did retail shots in the morning. Rob suggested a number of interesting locations, including a MOS in the red light district. We found a girl wearing Levi's and she agreed to a brief statement but I was concerned with potential trouble from "owners and protectors" who don't encourage this kind of publicity. I didn't want me or my equipment swimming in a canal so we did the shot in record time. Driving away, we spotted a beautiful girl in a Levi jacket and jeans riding a bike whom we "commandeered" for a setting-sun, bike-riding sequence, across bridges and alongside canals.

Back to the Dom, the light was fading, and I still needed a "dancing" shot as a transition into the last section of the film. We had asked the local Levi's PR girl to line up a go-go dancer. She was there, looking awful, so we paid her off and let her go. We walked around the Dom somewhat dejected when a fantastic girl came by: old, patched, skin-tight Levi's over a perfect body—young, good looking, a teacher from Antwerp in town on holiday. She agreed to our proposition and was outstanding. (As luck would have it, she had trained as a dancer.) Some of the best things in a film are unplanned.

Tuesday, October 31:

An early morning flight to London. A limousine met us and took us to the Levi's London show rooms where eight models, already fitted, were waiting for us. One had the feeling the London office was going to make sure this return trip would work out. We shot kids playing around in the London Zoo and then a short motorcycle sequence in Regents Park. Back at the show room again we did some recorded interviews with students and a series of dressing-room changing shots. We collapsed with a tall scotch and soda and went out to dinner to celebrate the conclusion of shooting. This kind of merriment had not previously been included in the schedule—not only was there no time for prolonged wining and dining but also the morning-after "condition" would have made it all totally impossible.

Wednesday, November 1:

Four weeks after leaving, I'm on my way back to San Francisco. The plane was delayed four hours due to heavy London fog and, as I sat in the airport, I thought how lucky we had been regarding weather, hijacking, riots and war. To say nothing of health and well-being. It was a pleasant flight and the reunion was an emotional one. Those four

happy faces that greeted me were just about too much. Wow!

Thursday, November 2:

Reviewed the first 4,000 feet with Ron Chase. Admitting to no objectivity, it all looked amazingly good to me. Even my very critical editor, who is an outstanding filmmaker, praised the footage. The last 2,000 feet that I had brought back with me was reviewed the next day and we discussed some general directions on the edit. I then spent the next two days sleeping and overcoming a month's worth of jet lag.

Monday, November 6:

Reviewed all the assembled footage with the client. There were favorable comments and no changes in any of the plans we had previously discussed.

While Ron started to cut down our 2½ hours of film to 15 minutes, I studied the transcripts of all the interviews and sync sound sequences. I had these transferred, along with some music we had obtained while in each country. By Friday, we had an 18-minute rough cut ready for review with Mike.

Monday, November 13:

Based on comments from last Friday's meeting, we revised the film over the weekend and showed it to Mike today, along with his boss, Bud Robinson, and Bud Johns, director of corporate public relations. They liked it, except for deciding to eliminate some nudity from the Paris Crazy Horse sequence. Ron and I dove into the sound problem and had a four-channel interlock to show Mike on Friday, the 17th.

Monday, November 20:

Ronald Chase is the best film editor, as well as one of the hardest-working people, I know. Because he worked nearly around the clock, we were able to show a final workprint with a four-channel interlock to Mike and his boss today. They were very pleased. We proceeded to the final mix on Tuesday and I reviewed it with Mike the next day. He was unsure of it–some sound too loud, some statements not clear enough, etc. Since we were ahead of schedule, we decided to hold until after Thanksgiving.

Monday, November 27:

Reviewed the sound again and agreed to make a volume adjustment during the electro-printing of the sound. I feverishly went to work conforming the workprint to the original footage and had it to the lab by Thursday morning,

the 30th.

Friday, December 1:

It's hard to say enough good things about W. A. Palmer Films, who delivered an excellent answer print in two days. The color was outstanding and required only three or four minimal changes for the second answer print. When you have a lab that performs like that, what else can you ask for? The quality and speed were fantastic. And, putting me well ahead of schedule gave us a chance to make additional corrections if necessary.

Monday, December 4:

Reviewed the answer print with Mike and his people and we decided there were enough reasons to remix the sound. They agreed this print could have been used for the management meeting. But, since we were two weeks ahead of the meeting- planned that way just in case of some emergency–we agreed to do another sound mix to sharpen up some small problems of levels and fidelity. This was done Tuesday and Wednesday, into the lab on Thursday, and an answer print was out the following Monday.

Monday, December 11:

The second answer print was delivered to Levi Strauss and Mike was ecstatic. Which didn't make me sad. We had lunch at the Garden Court in the Palace Hotel and planned other educational and PR films based on our footage. And congratulated ourselves. It had been an impossible schedule, yet we were in a week ahead of time with a film that gave a warm feeling of respect for people around the world and a sense of pride in the multi-nation breadth of the Levi organization.

Monday, December 18:

The film, titled "THE WORLD'S STILL YOUNG", was shown to a senior management meeting at the Fairmont Hotel. It was the highlight of the three-day meeting. ■

WHAT'S NEW

Continued from Page 446

spaced a maximum of 17 seconds apart can be selcted from the data in the memory disc and stored for viewing. Fifteen magnetic heads are used for this purpose. The first of the 15, based on the time-lapse of 17 seconds between each of the 15, is thus 255 seconds in the past. The time-span between recording images can also be automatically set for 0.1, 0.2, 0.3, 1.0, and 4.3 seconds, in addition to the 17 seconds. The same procedure for "on line" or currently incoming signals can also be programmed automatically.

Any TV Set Can Be Used for Playback Viewing

For viewing of the selected and stored images, the Hitachi unit also provides both automatic and random selection. When set at automatic playback, the time span between each image viewed can be programmed for 0.2, 0.3, 0.6, 1.0, 2.2, or 4.3 seconds.

For random selection, pressing any one of the 15 buttons puts the image on the screen instantaneously. All or some of the stored images can thus be played back in any sequence desired.

Full Complement of Inputs and Outputs

The back of Hitachi's new unit has a connector panel with provision for a wide range of hook-ups. These include "remote", "video-in", "camera-in", "video-out", "audio-in", and "RF out". In addition, there are two outlets as sources for AC power.

Broad Range of Uses

The unique characteristics and flexibility of the new Hitachi image pick-up, storage and retrieval control indicate a wide variety of practical applications.

In a preliminary outline of the potential markets, Morton M. Schwartz, marketing vice president of Hitachi Sales Corporation of America and Dr. Gentaro Miyazaki, senior manager of Hitachi, Ltd. advanced television systems department, listed publication news services, financial institutions, schools, businesses, hotels, airlines, industrial, and retailing.

Delivery Schedule Set

Although price has not as yet been set, samples of the new Hitachi unit are expected in the United States late this Spring and full scale delivery is scheduled for the Fall of this year.

For further information contact Hitachi Sales Corporation of America, 48-50 34th Street, Long Island City, New York 11101. ■

INDUSTRY ACTIVITIES

Continued from Page 378

stars like Ryan O'Neal, Jane Wyatt, Barbara Loden, Jean Arthur, Dennis Hopper, Rock Hudson, Rip Torn, Joan Fontaine, and John Voight. Together with the directors of award-winning films (like Robert Altman and Peter Bogdanovich), they participated in discussions of their work after the screenings. These exchanges have proved to be the most exciting element of the festival programming, for the festival audiences are passionate lovers of film. One of the most touching scenes of last year's festivities was that of Frank Capra tearfully accepting the tribute of his stars and the enthusiastic Dallas audience.

This year's festival boasts a distinguished panel of critics headed by Judith Crist *(NEW YORK MAGAZINE* and the NBC TODAY SHOW), Arthur Knight *(SATURDAY REVIEW* and *PLAYBOY),* Hollis Alpert *(WORLD MAGAZINE),* and Esme Dick (Director, *AMERICAN FILM FESTIVAL).* Together with the Festival Board of Directors, the critics have restructured the competition normally associated with festivals. In the past, critics like Jay Cocks and Rex Reed have been sequestered at the ranch of Dallas radio executive Gordon McClendon for a "Critics' Week." During this period, they might view as many as ninety official entrants. Aside from the fortitude required for such a grueling schedule, Dallas audiences were never exposed to the critics themselves and the critical process. Therefore, in order to interact to a greater degree with the festival patrons, the critics are now involved in extending the invitations on behalf of the festival to films that they consider to be of award-winning calibre. Their choices are, and have been, made from films which they have pre-screened for critical review. And in addition, Crist, Knight, Alpert, and Dick will discuss their personal selections with the filmmakers after each screening.

Another new feature of the 1973 Festival will be satellite screening rooms, located in various locations on the SMU campus. These auxiliary screening rooms will exhibit the great films of the Thirties, Forties and Fifties. They will be on view each day and night of the festival and are included in the price of admission.

This year's festival promises to showcase the entire range of artists who both create and criticize the best new American films- an unprecedented opportunity in the annals of international film festivals. ■

FILMING "LOST HORIZON"

Continued from Page 466

SURTEES: It took aperture changes—sometimes five or six stops in one shot, but I happen to have an assistant who can make those changes so that you never see them. There's no one like him. Another picture we did, "THE OTHER" is full of aperture changes. We were always taking people inside of dark barns and then right out into the daylight, but you can't tell when you see the picture.

QUESTION: Do you actually manipulate the aperture, or do you do it by varying the shutter?

SURTEES: We never do it with the shutter. You'd think it would be easier, but by working the aperture you can cue it better and vary it from fast to slow.

QUESTION: Did you use any unusual lighting equipment on "LOST HORIZON"?

SURTEES: There isn't any unusual lighting equipment in Hollywood.

QUESTION: I'm glad you said it instead of me.

SURTEES: Sometimes on the lamps I used a new type of diffusion. We called it "scratch". I don't recall its actual name, but it has etched lines all over it which disburse the light, even when you're using a projection-type lamp. With conventional soft-lights the light is scattered all over the place and you can't control it. I want to be able to control every light that I possibly can. This diffusion lets you get soft light, while retaining full control of the lamp.

QUESTION: Did it seem a bit odd to you to be working on a musical after all of the dramatic films you've done recently?

SURTEES: Well, the last musical I did was "SWEET CHARITY" at Universal and that's been a while ago. On that picture I used a very modern photographic treatment with unusual camera angles because it was a very modern type of film. But "LOST HORIZON" is basically a very straight film and so I had to use straight camera angles. To have gone modern would have been out of key with the overall style of the picture.

QUESTION: Even after all the years I've known you, it still amazes me how

you can switch from one photographic style to the other with the greatest of ease.

SURTEES: That keeps it interesting. For example, the picture I'm working on now, "THE STING", is a complete departure from "LOST HORIZON" and the photographic style is totally different. The story takes place in Chicago during the 1930's and all of the guys in it are con men. I've gone back to almost a home movie type of lighting. I've even brought in my home movie lights for some of the close stuff. It's pretty hard and harsh by today's standards, and it might be considered bad photography. For once, instead of always having perfect density, I let people go hot even if they burn up once in a while, or I let them go very dark. The extreme contrast is in key with the feeling of this particular picture. It's like the year I did "THE LAST PICTURE SHOW" and also "THE SUMMER OF '42"—two completely different styles of photography. One was pictorial and the other one was harsh. On "LOST HORIZON" I had a chance to use all of the old gags again—everything. It was fun, though.

QUESTION: Do you think that young cameramen coming up in the industry today will have a chance to develop such versatility?

SURTEES: You can't imagine what we owe to the cameramen who went ahead of us—and I'm sure these new people can't imagine it. They'll never have the chance to learn from such cameramen, and that's a shame. It took me 19 years before I became a first cameraman—eight years as an assistant and ten years operating the camera. Now a guy goes out and, if he's lucky enough to be working with a nice group and they change people, he may get advanced to first cameraman in perhaps four or five years—but he never gets the chance to learn everything he has to know. First of all, in TV film production they never photograph that way because it takes too long, so he'll never even see that kind of photography, much less get a chance to learn it. I think that when I retire—if I ever do—I'd like to open a school for cameramen. It would be in a place that has real lights, real cameras and real sets—and to hell with the theory. Let them go in there and do the actual work.

QUESTION: Do you think there's a tendency these days for people to underestimate how much they need to know in order to become first cam-

eramen?

SURTEES: The thing about camera-work is that you have to have so much technical knowledge—aside from going berserk once in a while and thinking you're an artist.

QUESTION: We can't have you thinking you're an artist. That would blow the whole scene.

SURTEES: Especially if the studio finds out you're thinking it. The minute they hear the word "art" they become very defensive right now. I've seen good directors get labeled as "artists" and have a hell of a time finding a job. Yet, in the industry, they all admire artists such as Bergman, Truffaut and people like that, but they don't want anything to do with them on this end of picture-making.

QUESTION: Do you have any final comments about "LOST HORIZON"?

SURTEES: Only that I hope that it will be successful, because that will mean a lot to Hollywood. It will encourage the industry to make big pictures in Hollywood again, including musicals. If it is a success, the man most responsible will be the producer, Ross Hunter. It's sad that not many producers in Hollywood mean very much to a picture, actually—but when Ross Hunter's name is on the screen, it's a Ross Hunter picture. He's totally involved in production. He's a nice, polite man to work with and he has a facility for getting the best work out of you. You don't lie down on the job. You don't take it easy. It becomes the rule to ask yourself on each shot: "How can I do this better?" Not simply: "How can I do it faster." It's a wonderful feeling to know that you're working for somebody who will back you up, no matter what it costs. That's the way Mike Nichols was, too, on "THE GRADUATE". He'd just keep spurring you on to do something different—and if it didn't work, he'd take the rap. ■

"LOST HORIZON" LOCATIONS

Continued from Page 413

ent with this," he said, "It's almost like a painting, but the camera is still there. Just good crisp work. The scenery gets more striking as we approach the valley.

"In 'THE LAST PICTURE SHOW', for instance, I could do some real tight stuff, parts of faces, etc., but this has to have a pictorial quality. It's a fantasy. We had a great, almost eerie effect yesterday with a band of haze and fog late in the day. I just let the exposure go. It should be good.

"The big problem here is equipment, getting it around—logistics. And this is a good word for the Arriflex. We're using two of them. I always carry one; but on 'LOST HORIZON' here we're using Arriflexes for both cameras.

"No, we haven't used any lights. We just can't haul our big lights up there and all we could get with small lights would be faces. You can't light up the whole mountain with them. We'll probably have to cut in a lot of closeups from the studio. Those parka hoods have hidden the faces some.

"But the real unusual thing about this picture is the second unit. I can't think of another major picture where the crew camped out, was snowed in, living in tents and snow caves."

It was the North Cascades location that brought out the stories. Bruce Surtees worked this second unit, along with director Russ Saunders, camera operator Ken Peach, Jr., color technicians Ozzie Smith and Lance Williams, second assistant and loader Dave Plinn, and unit manager Mac Harding.

This was in the Colonial Peaks area, 25 miles south of the Canadian border in some of America's wildest and roughest country. The helicopters (there were two of them on the job) provided quick 20-minute access from the hamlet of Newhalem when the weather was favorable. Usually it wasn't.

Jerstad's husky mountaineers, ramrodded by his partner Stan Armington, moved into the camp one day, setting up 13 two- and four-man tents at the 6,400-foot-level. More than 11 feet of snow fell during the three weeks on location in early April. Only eight days could be used for shooting.

The climbers started to dig snow-caves in the side of the hill. "By the time things went to hell, we really needed them," said Armington. Three tents collapsed under the heavy snow and 60-mile-per-hour winds. During one heavy weather siege, the crew spent three days and two nights in the tents. Bruce Surtees once was confined to his tent for 36 hours.

The cameras were stored in the tents at night, at outside temperatures, to prevent condensation problems.

One cave had three 7x7-foot-square bedrooms with six-foot ceilings, and a living room—with carpet on the floors! The camera crew moved in here when they couldn't get out by helicopter.

The climbers dug out the entrances to the tents and caves in the morning, sometimes requiring a half-hour to get out. They also cooked the meals, providing a "catering service" with freeze-dried mountaineering foods. The camp was fully supplied to subsist the entire group of 28 during the stormy periods.

Of the technical work, Armington said, "We put in one route along a ledge that was really a little hairy. For safety's sake, we put in an evacuation route, should the weather change, preventing the helicopter from coming in to get us. This entailed placing directional wands, 50 feet apart, and breaking trail for a couple of miles across the glacier.

"The day we filmed that ledge, the weather did go bad. The Tyler mount was in one helicopter. They probably set a pit-stop record, pulling that mount out to provide room to get the people off the ledge. The weather hit ten minutes later. The helicopter couldn't have gotten in again for two days."

Moving equipment around in the deep snow was heavy work, with a toboggan sometimes helping. Virgin untracked snow was needed for the filming and careful planning was required to move equipment without tracking the snow.

The helicopter was used, too, to produce man-made blizzards, whirling away only five feet from the ground to churn up the snow. This is a difficult procedure because the pilot's visibility is limited in the swirling snow. It is difficult to judge depth and distances.

The unaccustomed high altitudes were a problem for some of the crew. In fact, on the day of my visit to Mt. Hood, first assistant director Shel Schrager had to hop the chopper back to the lodge after a few hours at the top got him down.

Interestingly, Peter Finch, who plays Richard Conway, the British diplomat who is hijacked to Shangri-La, leaves, and then returns of his own desire, has a mountaineering background. His father, Australian George Ingle-Finch was a member of the 1922 British expedition which tried to climb Mt. Everest. Mallory, the expedition's leader, coined the classic "Because it is there" statement when asked why he wanted to climb a mountain. Mallory disappeared near the top of Everest in a 1924 attempt.

As a 10-year-old, Peter Finch was

apprenticed to a Buddhist monk in India for a short time. Armington discussed with Finch the possibility of his visiting the Mt. Everest base camp in Nepal. Armington's organization also guides Himalayan treks.

"This story is very current, very contemporary. The younger generation will appreciate it," unit publicity manager Bob Werden said. "All of the searches for the High Lama are more current today than they were in the 1930's when the film was first released. Everything has been compounded."

Although the story is updated to the present, a venerable DC3 will still be used as the hijacked airliner in the story. The old faithful twin-engine Douglas is still used by smaller airlines in the southeast Asia area where the story begins. After Mt. Hood filming, both units moved to Tucson, Arizona to film refueling sequences in the deserted Asian desert.

The name, "Shangri-La" has come to mean an ideal, peaceful valley retreat; but true to the James Hilton novel, Shangri-La is the lamasery, while the valley is the "Valley of the Blue Moon".

The million-dollar Shangri-La set was built on the back lot of the Burbank studios, with the Valley of the Blue Moon constructed at 20th Century-Fox's Malibu ranch. ■

BUY — SELL — SWAP HERE

STUDIO PRODUCTION EQUIP.

SIEMENS 2000 Double 16mm projector with extra amplifier. Westrex Professional 16mm editor. Bell & Howell 302 Projector 16mm. Bolex H 16 Rex 5-400' magazine, motors & lens. Professional 8-16mm film striper. Misc. lens & accessories. A. B. CALLOW, (213) 592-1857.

ARRI S, 25 & 300mm. lenses, 400' mag., torque motor, 8/16 V battery, matte box, variable speed motor, case, $2200. Traid high speed camera, Wollensak 3.7mm. F1.5, $450. Bolex (never used) 17-85 zoom, $500. (203) 227-2220.

ANIMATION STAND, (National Cine) with Portman 360 rotating double ring compound, under light, Bell & Howell 35mm & 16mm cameras, motor, rotoscope, projection focus reticle and many extras. $5000. BRAY STUDIOS, INC., 630 Ninth Ave., NYC NY 10036. (212) 245-4582.

FILMLINE R15, black & white processor, 18 ft/minute, good condition, DC drive, spare parts, dolly. LITTELL, West Main Street, Chester, Conn. 06412. (203) 526-2249.

FOR SALE—RCA 1600—16mm sound projector, demonstrator, like new, with EJL-Lo voltage-High light output lamp, 2" F1.6 lens, 15 watt transistor amp. built-in speaker, sacrifice $450. ALAN TORGERSON, P.O. Box 2130, Des Moines, Iowa 50310.

SYNC BEEP-¼ 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 prepaid packet containing 20 strips totaling 100 35mm frames. D. P. UPTON CO., P. O. Box 5052, Tucson, Arizona 85703.

BELL & HOWELL 16mm printer, Model "J". Like new, super hi-intensity lamphouse, roller gate, 3-speed fader, 2000' torque motor takeups, Dual RFQ's, built-in DC power supply, keylight modification. $3995. SPORTSREEL PRODUCTIONS, 1201 Washington, Albany, Calif. 94706. (415) 526-9292.

CAMERA, 35mm Mitchell standard, 3 lens, magazines, motors, hi hat, with cases $1600. BEN (213) 463-5770.

MOVIOLA 3-headed upright console with 16mm pix head, 35mm pix head and magnetic/optical head. Excellent condition $3300. FOTOSONIC, INC., 15 W. 46th St., NY. NY 10036. (212) 586-0355.

NAGRA III Recorder, $695. Sony wireless mike, $95. Houston 16mm processing magazines like new, $95. each, 5 for $400. SPORTSREEL PRODUCTIONS, 1201 Washington, Albany, CA., 94706 (415) 526-9292.

ARRI BL complete outfit with new single system (large Arri amplifier). Both rarely ever used. Will sell or long lease. FILMEX LTD., 55 Maitland St., 19, 20th floors, Toronto, Ont. (416) 964-7415.

CRYSTAL sync generator for Nagra or any sync recorder $100. Install it yourself and save. AUDIOFONICS, INC. 1101 Downtown Blvd., Raleigh, N.C. 27603.

SACRIFICE 5 matched Cooke Speed Panchro lenses on Mitchell mounts, 24mm-F.2, 35-F.2, 50-F.2, 75-F.2, 100-F2.5. Never been used. For optical work. 1-35mm Bell & Howell Shuttle movement camera model B.2709-701 Serial #1090. Never been used. TILL GABBANI, 4300 Keystone Ave., Culver City, Ca. 90230. V.E. 9-3357.

STUDIO PRODUCTION EQUIP.

USED MOTION PICTURE CAMERAS
Arriflex 16S, Wild Motor, Cine 60 Battery Belt, 12-120mm Angenieux Zoom Lens, Very Good, $2590. Arri S Pkg.—Cons. speed, wild motors, 2-400' mags, torque. 17-85 zoom, 12.5—25-50mm Cooke Kinetals, matte box, carrying case, Very Good, $2965. Arri 35 IIB, Wild Motor, Hi Hat, 28-50-75mm Schneider Cine Xenon Lenses, Matte Box, 16 Volt DC Battery, 2—400' Mags., 2—200' Mags., Just Fine Tuned, $2275. Auricon Pro 600, Mag., 12-120mm Angenieux Zoom with Finder, Optical Sound complete, Deluxe Cases, Very Good, $2285. Auricon Cine Voice II with Optical System, 17-70 Zoom, Case, $750. Beaulieu R16B PZ with 12-120 Auto, 2-1000MA Batteries, Charger, Sync Gen, 200' Mag, Case, Like New—Demo, $2475. Bell & Howell 70D with 17-68mm F2.2 Angeniux with Side Finder, $590. Bell & Howell 70DR with 3 assorted lenses: 25mm B&H super Comat F1.9, 10mm F1.8 Angenieux, 75mm F2.5 Angenieux, with Turret Optical Objectives, $545. Bell & Howell 70H with 3 assorted lenses: B&H 25mm F1.9, B&H 17mm F2.7, B&H 75mm F:4 (Filmo), $199.50 Bell & Howell 70DA with 3 assorted lenses: B&H 25mm F1.9, 2" Cooke F3.5, 3" Elitar F2.5 (Filmo), $199.50 Bell & Howell 70DL with 3 assorted lenses: 25mm Lytar F1.9, ½" Cine Raptar, 75mm Yvar F2.8 (Filmo), $275. Bell & Howell 70TMR with 10mm F1.8 and 25mm F0.95 Angenieux Lenses (Filmo), $445. Bell & Howell 16mm 200EE Auto-Load, Mag Camera, Perfect, $125. Bolex H-8 Reflex with 2 lenses: 12.5mm F1.3 Macro Switar and 36mm F1.4 Macro Switar, $250. Bolex Super 8, 155 Super Zoom, $124.95. Bolex Pro16, 12-120mm Angenieux, 2—400' Mags, Power Supply and Electronics, Crystal Control Module, Monopod & Case, Excellent—Hardly Used, $5500. H-16 EBM Body positively display model, $755. H-16 Rex V Body positively display model, $579.35. With POE 16/100 F1.9 Vario Switar, $726.50 Bolex H16 RX5—18-86-10mm Switar, MST, BX55, 400' Mag, Torque, Fader, Matte Box, Blimp, Deluxe Case, More Extras—Excellent $1525. Bolex H16 Reflex, 10-25 & 75mm Kern Lenses, Good. $545. Bolex H16 with 1" Cine Velost F1.5, 16mm Yvar F2.8, 75mm Wollensak F:4, Case, Good. $175. Maurer 65, 16mm Camera Pkg—Needs Work. $750. Cine Special 1 with 25mm Kodak Anast F1.9, 50mm F1.6, Case, Tubular Finders, Masks, Perfect $375. Eumig C-16 Turret with 2 lenses, Case, Accessories $245. 80-160X Questar Cervit Mirror, broad band and low reflection coatings, Star diagonal Prism in Leather Carrying Case, with Basic Camera Coupling Set, plus one adapter ring for Nikon F Camera and one type C Ground glass for Nikon F, plus Rowe Shoulder Mount $1295. We Buy, Sell and Trade. Call or Write Selwyn Schwartz, HELIX LIMITED, 679-E N. Orleans, Chicago, Ill. 60610. (312) 944-4400. Bank Cards.

PRODUCTION aids for the creative filmmaker. Save time and money. Write for literature. CINEPHONICS, Box 534, Dept. AC, Del Mar, CA. 92014.

300 W lamphouse and Peterson fader for B&H/J printer. Sync Stellavox (small). 35mm Eyemo with 400' mags. Concord video recorder and camera (½" BW). Emby-Homrich 35mm slide duplicator. Complete 35mm arc booth. Make offer on all or part. CARL PEHLMAN, Box 7288, Colorado Springs, Colorado. (303) 636-1408.

B&W 16mm raw stock film for sale. Plus-X and double-X negative. Purchased during fall of '72. Have 300 (100') and 500 (400') fresh, unopened rolls. 2¢ per foot. FILMEX LTD., 55 Maitland St., Toronto, Ont. (416) 964-7415.

STUDIO PRODUCTION EQUIP.

BEAULIEU R16 Automatic, loaded, like new. Used for one film. Still under warranty. $1700 or best offer DANELI INTL. FILMS, PO Box 3417, Santa Barbara, Ca 93105. (213) 347-3227.

IN STOCK, NEW Super-16 Eclair NPR, factory modified, 2 magazines, 2 cases, $10,950. BAUER P6 Synchron projector, (Sync motor) $1495. MICRON Optical Sound Projector, with variable speed feature, $995. WESTERN CINE SERVICE, INC., 2130 So. Bellaire St., Denver, Colo. 80222 (303) 756-9189.

1—Auricon Cinevoice Conversion Camera with front handle for shoulder operation complete with 12/120 Angenieux Zoom finder with 1" eyepiece, Zoom Motor drive with front handle controls, sync signal output cables, one 400' Mitchell magazine and Frezzi 1000 DXC crystal controlled power pack. Excellent Used $3450. 1—Same as above but with bloop light and Angenieux 9.5 to 95mm lens with short finder. Exceptional Condition $3995. 1—Pro 600 Special with Optical Galvo, 2-400' Magazines, 12/120 Angenieux lens and Frezzi 30D Power Pack. Good Used $1995. 1—Magnatech Tuning fork inverter with case but less 16V battery. $625. 3—MA-11 Filmagnetic Kits for Auricon complete. Excellent, @ $995. 10—400' Mitchell 16mm Magazines, @ $135. 1—Eclair 1200' Attachment for NPR complete with Mitchell 1200' Magazine. Like New. $1300. 1—Eclair NPR Motor Cradle. Excellent. $75. 1—Eclair NPR Camera Case. Like New. $100. 1—RCA—77DY Microphone Like New. $185. 1—Auricon Pro 600 w/Galvonometer RA31 Amplifier, 2—600' Magazines, Pan Cinor 17.5/70mm lens. $1295. 1—Bell & Howell Model D 16mm camera with 3 lenses $195. 1—Bell & Howell Model 70DR with 3 lenses $350. 1—Bolex H16 Reflex with 3 lenses $395. 1—Bell & Howell Model D 35mm Printer w/Super High Lamphouse Reconditioned $2995. 1—Houston All/16/35 Reversal B&W Processor, complete $1995. 1—Oscar Fisher 16/35 Neg/Pos B&W Processor. Excellent. $2995. 1—Bell & Howell Model D 35mm Double Head Continuous Printer w/Light Charge board. Good Used. $3995.

CINECRAFT INTERNATIONAL INC.
11 Caesar Place
Moonachie, New Jersey 07074

Ampex 602 recorder full track, $250. Ampex 2012 amplifier speaker, $95. Ampex 6000 video-recorder monitor, $750. Arri 2B Std lenses, magazine, $2950. Arri 16BL 110v sync or c/s motor, $325. Arri BL pkg, 12-120, belt, mag, $6500. Arri S or M wild motor, $175. Arri S or M 110v sync motor, $250. Auricon Cinevoice mag wired 400', $995. Auricon Cinevoice 100' mag wired, $550. Auricon Pro 600, MALL mag 12-120, $3295. Beaulieu 16, auto 12-120, mags, $1795. B&H Eyemo single lens, $325. B&H Eyemo spyder turret, 3 lenses, $475. B&H 302 mag-optical projector, $495. Bolex Rex 16 Reflex, $250. Cannon Scoopic complete outfit, $895. Eclair ACL, 2-200', mags, battery, $4750. Eclair CM3 outfit, 16mm & 35mm mags, lenses, case, $2900. Eclair NPR, mag, BEALA, 12-120, case, $5975. EV 642 mike w/hanger, screens, $195. EV Eliminator II speakers new (385), $295. Kodak XL55 outfit, new, $165. Moviscop viewer, $125. Nagra BMT mixer, $125. NCE Senior Fluid Tripod, $395. Nagra FM meter, $95. Pan Cinor 17-70mm Zoom w/finder, $275. SSIII Body, $1895. Sennheiser 805 mike & windscreen, $325. Sennheiser 1007-08 wireless mike, $195. Stellavox SM5 Rangertone, 3" reel, $275. Transist-O-Sound Auricon Amplifier, $350. WANTED: Eclair Ciblo motors, Siemens Sync, Arri M, mags, Zoom or fixed lenses. IMAGE DEVICES INCORPORATED; 811 N.W. 111 Street, Miami, Fl. 33168; PHONE 305/754-4141 TELEX 51-9348

RATES: Ads set in lightface type 40¢ per word. Minimum ad, $4.00. Text set in lightface capital letters (except 1st word and advertiser's name) 50¢ per word. Modified display format (text set in **boldface** type, capitals or upper-and-lower-case) $4.00 per line. Send copy with remittance to cover payment to Editorial Office, American Cinematographer, P.O. Box 2230, Hollywood 28, Calif. Forms close 1st of month preceding date of issue.

STUDIO PRODUCTION EQUIP.

USED 16mm PROJECTORS 16mm Bell & Howell 173 Time-Motion 2" F1.6 and Case, $275. 16mm Bell & Howell 202 Magnetic/Optical Projector w/ext speaker, $475. 16mm Bell & Howell 302 Magnetic-Optical Projector, $475. 16mm Bell & Howell 335 Optical Sound Projector, $425. 16mm Bell & Howell Filmsound Utility 2-Case Model, $225. 16mm Bell & Howell 3" Movie Projector Lens, $49.50 16mm Bell & Howell Filmovora Projector Lens, $35. 16mm Eiki ST-OH Auto threading, the Best auto threader on the market, $425. 16mm Kodak Pageant Sound Projector, Magnetic-Optical, $425. Bolex S221, optical magnetic projector, $875. HELIX LIMITED, 679-E N. Orleans, Chicago, Ill. 60610.

USED CINE ACCESSORIES

Arri 35 Wild Motor, Excellent, $165. Arriflex Universal Fiberglass Studio Blimp with Adjustable Matte Box for Zoom or Fixed Lens, Complete, New, Never Used, $1375. Arriflex 16S/M Constant Speed Motor, $210. Arriflex 16S/M Standard Viewfinder, New, $175. 16mm Bell & Howell Splice Block, $750. Bell & Howell Eve Objectives any size up to 6", $11. Bolex Nomad AC Synchronous Motor, 115V 60 Cycle, $65. HFC Straight Cut film Splicer, $120. Riva Straight Cut film Splicer, $110. Stanco Cine 8/16 Automatic Hot Splicer, $195. AT Cinetech Mag. Tape Splicer, $60. HELIX LIMITED, 679-E N. Orleans, Chicago, Ill. 60610.

USED SOUND EQUIPMENT

Arri 16 BL Single System Components, complete Module, Mark II, R cord Amp, Mike and Cables, Headset, Excellent, $1,825. Magna Sync Nomad Recorder complete w/tapes. $250. Nagra IV L3, 2 Preamps, Limiter, ALC, QSLI, QFM, Beyer DT48SN Phones, Leather Case, Excellent with Six-Month Guarantee, $1680. Nagra SNN Recorder, Like New, Hardly Used. $785. QGX 60 Time Sync Generator for Nagra IV, $165. Sennheiser 404 with MZA6 & TM515 or KAT11, $240. Sennheiser 405 with MZA6 and Cable, $270. Sennheiser 415 with MZA6-2 and Cable, $290. Sennheiser 804 with MZA6 & TM515 or KAT11, Shock Mount, Windscreen, $360. Sennheiser 805 with MZA6-2, Cable, Shock Mount, Windscreen, $385. Sennheiser 815 with MZA6-2, Cable, Shock Mount, Windscreen, $410. Sennheiser MD421 with Cable, Good Mike, Rough Looking, $65. Sennheiser MD214 Lavalier, $75. Uher 4000L w/mike—Excellent, $275. Vega Wireless Outfit, #55 Xmitter, #56B Receiver with Rechargeable Batteries, Antenna, Sony ECM 50 Lavalier, Excellent & Complete, $975. Arri 16BL Single System Components, complete Module, Mark II R cord Amp, Mike and Cables, Headset, Excellent, $1825. HELIX LIMITED, 679-E N. Orleans, Chicago, Ill. 60610.

TUNGSTEN-HALOGEN photographic and television lamps at substantial discounts.

$ .00 to $ 19.99—list
20.00 to 29.99—10% off
30.00 to 149.99—25% off
150.00 to over—30% off

Catalog upon request. OLESON COMPANY, P.O. Box 348, Hollywood, Ca 90028.

CANON SCOOPIC demonstrator $795. Folding shoulder pods, new $55. GORDON YODER, INC. 2840 Reward Lane, Dallas, Tex 75220.

NAGRA 4.2 with accessories. Practically new used for one film. Still under warranty. $1750. or best offer. DANELI INTL. FILMS. P.O. Box 3417, Santa Barbara, Ca 93105 (213) 347-3227.

FILM Laboratory 16mm equipment, processors, printers, 16/8mm slitter, many extras (415) 834-4222.

VIDEO TAPE ½" to 2" for helical video recorders, Memorex or Scotch 33% to 45% off. ELECTROGRAPHIC SUPPLY CO., Box 277, Southport, Conn 06490.

ARRIFLEX M, mint, Angenieux 12.5-75, two 400' mags., wild motor, battery belt, case $3,950. ARRIFLEX BL, Angenieux 12-120, one 400' mag., battery, cables, etc. Over 40% of list $5,950. Accessories for the Arri M and S. Box 1757. AMERICAN CINEMATOGRAPHER, (213) 662-4507.

MOVIOLA UL20 #75803 only four years old. Large screen, 16mm with two separate soundheads, manual searchead, lightwell. Lists $4000., excellent condition $2800. Mineola-16mm listed $2800. price excellent. $600. Arri-S governor controlled motor excellent $160. JULIAN COLE, 3604 Woodmont Blvd., Nashville, Tenn. 37215.

70mm CAMERAS. 2 MCS German units; lenses 24mm-600mm; related equipment. Highest quality flat image for 70mm or 35mm prints; ideal for stereo modification. $18,000. or lease. Box 1759.

BAUER P-6 Studio 16mm interlock projector with frame counter and remote control, used only one hour, fully guaranteed; list $4423; sell for $3750. MOVIOLA L-20 16mm picture head with counter, $800. 2211 Michigan Ave., Santa Monica, Ca 90404. (213) 829-2901. Attn: DICK SCHOENER.

ECLAIR ACL excellent condition. Two 400 ft. mags. 10, 25, 50mm Schneider lenses, handle, battery. $5,250. RICHARD KIDD (512) 472-8396.

ACL, never used, body, finder, motor, filter handle, battery, charger and cord. $4000. NPR, like new, Beala motor, universal finder, 2 magazines, Angenieux 9.5-95mm. lens, 2 hoods and filter, 2 belt batteries, 2 cords and barney, $9500. (201) 652-7543.

AURICON conversion optical/magnetic 12-120 zoom lens, 2-400 ft. magazines, power supply, brace, tripod, extras. AURICON Pro 600 optical and magnetic zoom lens tripod extras. Bolex Rex magazine motor 12-120 zoom lens, power supply, 10mm Switar, film recording rack, 1-35mm recorder, 1-16mm recorder, 1-35mm dubber, 4-16mm dubbers, 1 Nagra 4, 1 Nagra resolver, 1 Jan and 1 Holmes projectors. 1 dip filter, interlock system mixing board. The above equipment priced to sell. Write for specs and prices. FILM ASSISTANCE, 1646 N.E. 151 St. Miami, Fla 33163, (305) 944-7494.

STUDIO PRODUCTION EQUIP.

OXBERRY Animation stand and camera—excellent condition height 11'3". Model #6 SN58. Oxberry camera 35mm Model # 25-AN-B, SN63. Details on request. W & F PRODUCTIONS, 1933 Vernier Rd., Grosse Pointe Woods, Michigan 48236.

STAGE/Studio LAMPS—Projection Lamps—GE, Sylvania—Full line—lowest prices. ELECTROGRAPHIC SUPPLY CO., Box 277, Southport, Conn. 06490.

MOVIOLA UL20CS, serial 72936, 16-16 composite sound head. Used less than hour of film by non-professional, stored since. Mint condition. OAKTREE, BELL ANS PARK, Orangeburg, N.Y. 10902. (914) 359-1346.

FEW ANGENIEUX 12-120's, new/used; All A-1. Box 2863, Culver City, CA 90230.

AURICON CineVoice conversions with 12-120 zoom. MA-11 magnetic 1-400' mag & cases. $2500. and up. Guarantee 60 days. Send for prices on new conversions and on new CP-16. Houston A-11 and Labmaster R-16 processors. Bell & Howell models J&JB printers. We buy, sell and trade. CK FILM EQUIPMENT CO., 9983 Coddington Way, St. Louis, Mo 63132. (314) 994-1723.

SERVICES AVAILABLE

FILMING in South Africa, for full motion picture, studio and location facilities write: HEYNS FILMS (PTY) LTD., P.O. Box 11101, Lynnwood, Pretoria, South Africa.

FILMING IN OREGON or the Northwest? Need production stills? Experienced, fully equipped still photographer available for assignments. Location scouting help available also. LESTER GUYSE, 7524 S.W. 27th Ave., Portland, Oregon 97219. (503) 246-2189.

PRODUCERS: Veteran scriptwriter will write, rewrite or turn your idea, outline or treatment into a salable screenplay. Also several complete scripts are available. Reasonable rates. WOLF ASSOCIATES (215) 242-1731.

CAMERA REPAIRS and filter slotting 35 years experience. Filmos, Eyemos, converted Cine-voices. Reasonable, quick service. RALPH GONZALEZ. 248-45 Thebes Ave., Little Neck, NY 11362. FA 1-1989.

GORDON YODER, INC. Gives 48 hour service on Filmo & Auricon filter slots. Also quick service on Auricon and Filmo repairs.

WE rebuild AURICON heads and repair MA-11 amplifiers. Fast service—reasonable prices—fully guaranteed. MAGNETONE, 13530 Wentworth St., Arleta, Ca. 91331. (213) 780-5112.

GORDON YODER, INC repairs all types of conversions.

ANTHROPOLOGIST, PhD. 1973. Publications, films. Photographs published every country of Western Europe, So. America, Mexico, USA. Extensive research experience. Seeking challenging position Sept/Oct: A.M. Schreiber, via F. D'Ovidio, 22, Termoli (CB), 86039 Italy.

GORDON YODER INC. builds a 15 oz. magnetic amplifier for Cine Voice.

PRODUCTION ASSISTANT—Asst. Cameraman with 12 years experience in Caribbean, Canada, U.S.A. 16/35mm. Will operate 2nd camera. TED BROWN, 934 East 228St., New York, 10466 (212) 231-0354.

EXPERIENCED documentary film director/cinematographer, fluent in French and Arabic, available for projects in North Africa and the Middle East. Resume sent upon request. RON CARDOOS, 48 Westmoor Rd., Boston, MA 02132, (617) 267-2975.

35mm EKTACHROME (5038) slide dupes. Doubleburns, Matte inserts. Imprinting, numbering available. JIM VORMELKER PRODUCTIONS, 1225 East Orangethorpe Ave., Fullerton, CA 92631.

Continued on Page 486

World's standard

FREZZOLINI®

Model LW-16 professional TV newsfilm camera

NEW!

Available with or without automatic iris shown.

Supplied with Angénieux 12-120mm zoom lens and V-30 one-inch finder with TV reticle. Optional: **Special TV Newsfilm Package** complete with choice of camera accessories, amplifiers, and portable "Frezzi-Lites"™ For consultation about TV newsfilm camera requirements and for camera demonstration call or write James J. Crawford, Vice-Pres. Engineering.

General Research Laboratories

DIVISION OF
Frezzolini Electronics Inc.
7 Valley St., Hawthorne, N. J. 07506
PHONE: (201) 427-1160

(Your present conversion can be made "Frezzi-Cordless"™

NO NEWS IS GOOD NEWS!

Read every word! Act now to save!

byron on prices

WE'RE FIGHTING INFLATION BY ABSORBING LABOR AND MATERIAL COST INCREASES TO BRING YOU LOWER LAB PRICES.

As we enter the President's economic Phase III, we were about to publish a new price list. However, we decided to take a firm stand against inflation.

It was a big decision.

During the government's price controlled Phase II, increased costs were passed along at the actual increase only, without any mark up. But with Phase III the picture changes. We had fantastic cost increases during last year. On February 1, 1972 our union labor contract was increased 7% plus fringe benefits. Another increase of 7% became effective February, 1973. Administrative salaries are up 5½% per year. Certain raw stocks have increased. Social Security taxes took a jump in January. Workmen's compensation will go up in excess of 60%. Chemicals have doubled in 1½ years. Light, heat, shipping, insurance and practically everything else has gone up.

Normal business practice would indicate that these increased costs should be marked up and passed on. Other labs have already substantially increased their prices.

We hope to be able to absorb these inflationary costs by increasing our volume. In order to achieve this objective, we must retain our old customers, and encourage new ones to use our facilities. Help us hold the line. Save yourself money at the same time. Phone or write telling us of your requirements. Compare our quality and prices with any other lab. We're highly competitive. And our prices are low—the same as last year's. If you have last year's price list . . . continue to use it. We're not raising prices at this time, so don't look for any price news from us.

COMPLETE FILM SERVICES
16mm - 35mm - Super 8mm

- ☐ Tape to Tape
- ☐ Film to Tape
- ☐ Tape to Film
- ☐ Film Strips
- ☐ Slides
- ☐ Production Services

ELECTRON BEAM RECORDING
FOR BLACK AND WHITE

byron COLOR-CORRECT®

65 K Street, Northeast, Washington, D.C. 20002 202/783-2700
World's Most Sophisticated Video Tape and Film Laboratories