

American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

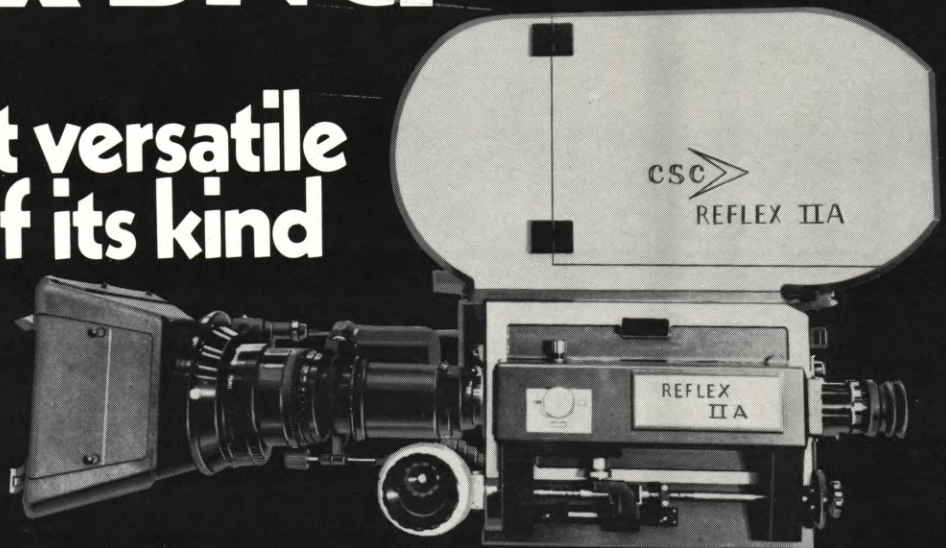
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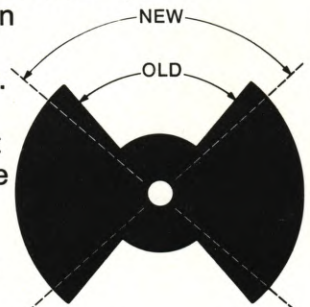
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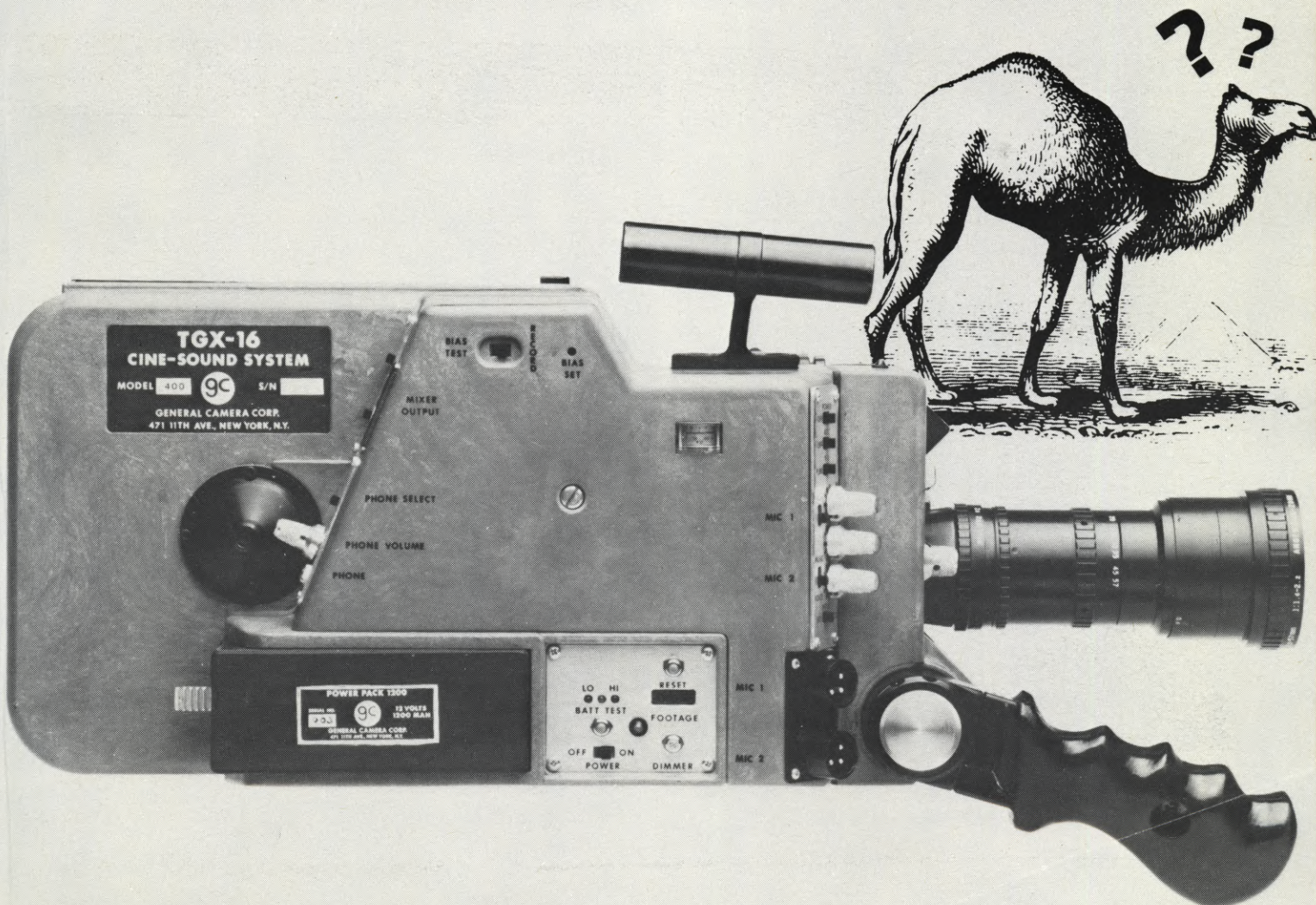
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Sy Cane is cheap. In fact, his prices on every conceivable piece of motion picture equipment are as cheap as anybody's.

Sy Cane is boring. He knows more about cameras and equipment than Euell Gibbons knows about wild hickory nuts. And he's surrounded by a staff of camera fanatics with a single-minded expertise that borders on tedium. The only other thing Sy knows is the time of day. But he won't give it to anyone.

Sy Cane is argumentative. He won't sell you equipment just because you *think* you need it. He thinks it's wrong to sell someone more camera than

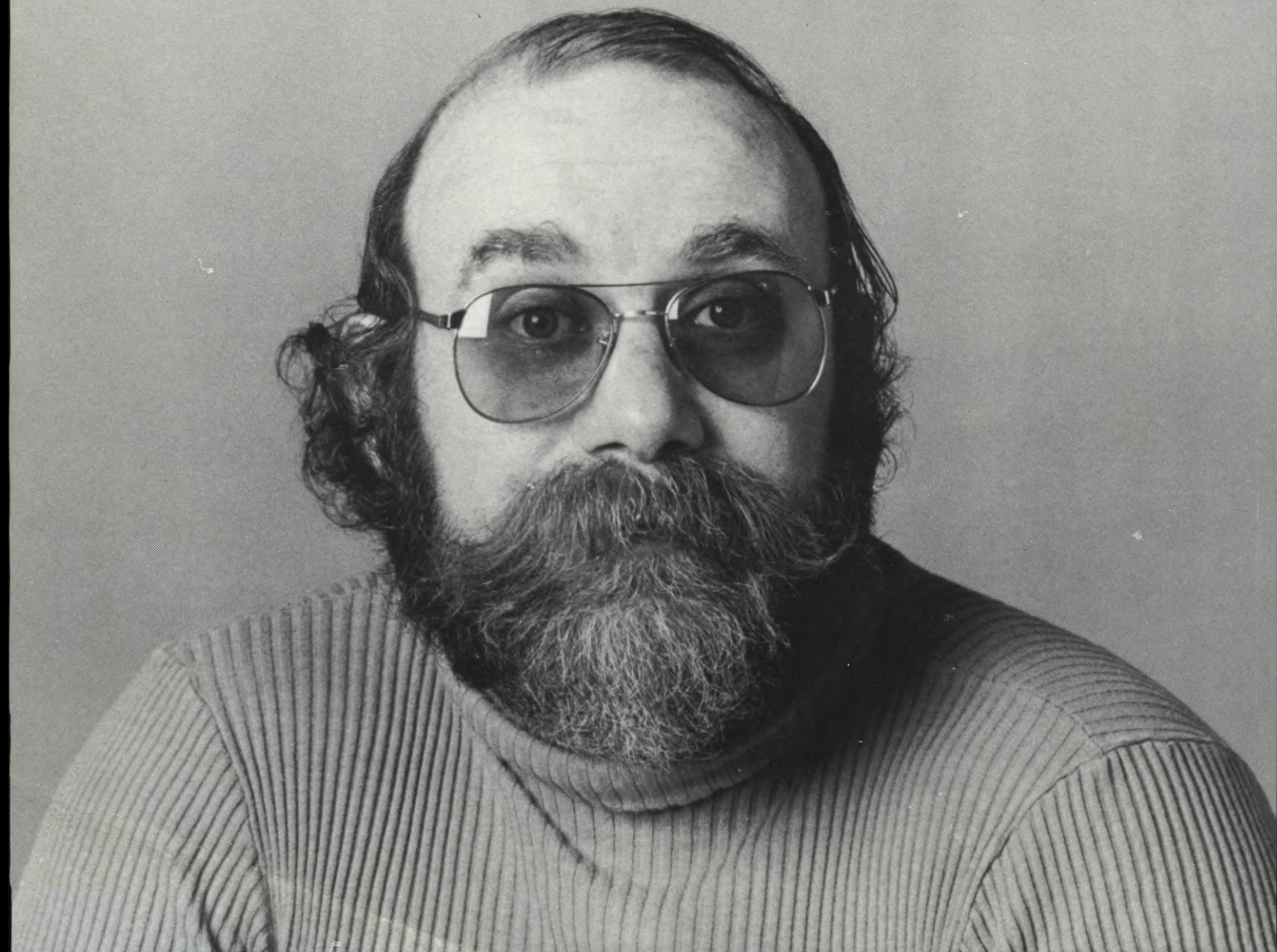
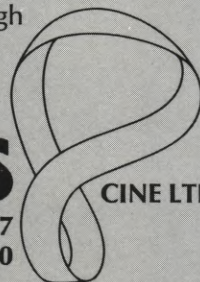
the job calls for (a character flaw, we suppose).

Sy Cane is fussy. Fussy enough to hire Eclair's Bernie O'Doherty to head up the Mobius service department. And heartless enough to guarantee 24 hour service in many cases, by threatening Bernie's life.

Sy Cane is impossible. Yet, through nobody's fault, a reality. He is, quite frankly, a man that only a customer could love.

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American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

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

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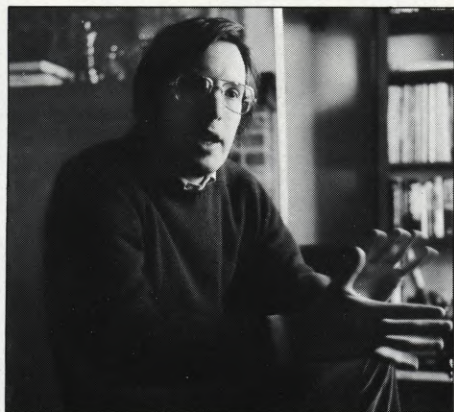
ON THE COVER: A representation of the holocaust which characterizes the climactic sequence of the Paramount/John Schlesinger filmization of Nathanael West's "THE DAY OF THE LOCUST", in which Los Angeles goes up in flames. Poster graphics courtesy of Paramount Pictures. Cover design by DAN PERRI.

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Edward N.

FRIEDKIN



"Whenever I feel I know something about composition, color, and storytelling on film, I go to an exhibition by one of the master painters, say Turner, Velasquez, or Rembrandt and I realize not only how little I know, but how lucky I am to be working in a visual medium today.

"And I think that right now is the most exciting time to be making films in this country. I wouldn't say that movies are better than ever, just that more is possible than ever before. For one thing, there has never been greater freedom of the screen as far as subject matter, and recent technical innovations have made everyone's wildest imaginings filmable. The portability and flexibility of today's equipment have to a large extent determined the style of a great many films.

"*The French Connection*, for example, couldn't have been made as it was without the Nagra tape recorder, the Arriflex camera with its fast lenses, and the new Eastman fast film stock.

"Filmmaking is both an adventure and an education for me. Jacob Bronowski put it best when he said that one's greatest pleasure is in one's own skill. I'm both scared and exhilarated every time I start a new picture. I'm scared of the possibility that I won't get everything on screen that's in my mind's eye—I never do—and exhilarated at the challenge.

"At its best, filmmaking is like being a free-fall artist without a net. And in the rare moments when improvisation becomes invention, a director can know the joy of the Wallendas.

"They tell me that when a foreign film plays in Thailand, since they can't afford a dubbed or subtitled version in Thai, a man stands alongside the screen, and every ten or fifteen minutes they stop the picture and he explains to the audience what they've just seen.

"Ever since I heard this, I've thought about that audience and the challenge of reaching them. I mean, what if it was possible to make a film that needed *no* translation, wherein the action alone was able to move audiences everywhere. There are a few directors working today—and many who are gone—who have accomplished this. But 'director' is the wrong name for them. These are filmmakers,

people who can take ideas, visions or memories and in their own personal way not only illuminate them for an audience, but transport that audience into a dream world to enhance the real one.

"A director can take a picture of, let's say, a chair—and we all know what a chair looks like.

"A filmmaker can make us think about what a chair *could* be."

For a revealing look at people and ideas in the moving visuals industry, Kodak has combined this and other interviews into a fascinating and informative booklet. For a free copy write: Eastman Kodak Company, Dept. 640-D, Rochester, New York 14650.



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WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE



NEW "CRYSTASLATE" OPTION AVAILABLE FOR CP-16R CAMERAS

Cinema Products Corporation announces the availability of the new "CRYSTASLATE" modification package for CP-16R reflex cameras. The "CRYSTASLATE" modification provides the CP-16R with *auto-slate edge marking*, a *bloop tone signal*, and a *sync pulse output signal* (60 or 50 Hz sine wave).

The "CRYSTASLATE" modification (which must be ordered at the same time when ordering the CP-16R reflex camera) is ideal for use with Nagra 3 & 4 recorders and similar professional tape recorders.

The "CRYSTASLATE" modification package is priced at \$650.00. For further information, please write to Cinema Products Corporation, 2037 Granville Avenue, Los Angeles, California 90025.



SIGNIFICANT IMPROVEMENTS TO SUPER8 RECORDER

Super8 Sound, Inc. has announced several improvements in the Super8 Sound Recorder, including an industry-standard pilotone sync output, a unique speed memory circuit that holds speed during sync dropouts, new

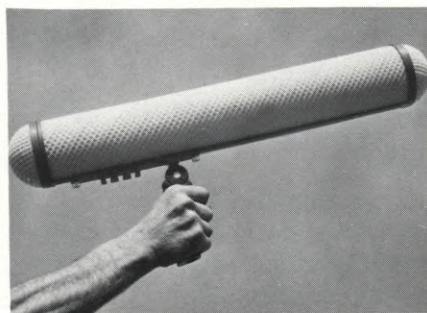
CMOS integrated circuitry for increased noise immunity, and two basic sync speeds (24fps professional and 18fps amateur) on all machines.

Despite the improvements, there has been no price increase — the Super8 Sound Recorder still sells for \$645. There are now over forty Super8 Sound Sync Cameras, plus the new single-system sound cameras, that are compatible with the Super8 Sound Recorder.

The Super8 Sound Recorder records on Super 8 fullcoat magnetic film and combines the functions of location recorder, laboratory resolver, sound-studio dubber, and transfer recorder. It is fully compatible with all other sync-sound systems — professional or amateur, pilotone or new digital 1/F sync pulse, reel-to-reel or cassette — and has built-in quartz crystal sync.

A 28-page illustrated Super8 Sound Recorder User's Manual is available for \$1. It tells how to transfer sync sound from a magnetic tape recorder to Super 8 fullcoat, how to transfer sync sound from the magnetic edge stripe of a single-system film to fullcoat for professional double-system editing, how to transfer edited fullcoat sound tracks back to the edge stripe of multiple release prints, and many other applications for the Super8 Sound Recorder.

For further information, contact: Super8 Sound, 95 Harvey Street, Cambridge, Mass. 02140. (617) 876-5876.



NEW "ZEPPELIN" WIND SCREEN NOW AVAILABLE EXCLUSIVELY FROM ALAN GORDON ENTERPRISES INC.

The new "Zeppelin" Wind Screen for Sennheiser 815, 415 and 435 and other similar microphones, is now available exclusively from Alan Gordon Enterprises Inc.

The "Zeppelin" has an aerodynamic

design that forces wind to flow around it while creating a dead-air space around the microphone. Although air will not penetrate the screen, sound will, thanks to its unique construction.

Materials used in the construction of the "Zeppelin" are said to give it a decided advantage over foam screens. The "Zeppelin" has an outer lattice of polyethylene, high-density plastic that doesn't crack or become brittle. The inner material consists of foam which is sandwiched between layers of laminated nylon. Outer framework of the "Zeppelin" is made of PVC (poly vinyl chloride), semi-rigid, high-impact plastic.

Field tests have proved the "Zeppelin" to be virtually indestructible. The 815 model weighs only eight ounces and the "Zeppelin" is easily cleaned by washing with a detergent or with air.

For prices, contact Ted Lane at AGE Inc., 1430 Cahuenga Blvd., Hollywood, Calif. 90028, (213) 466-3561.

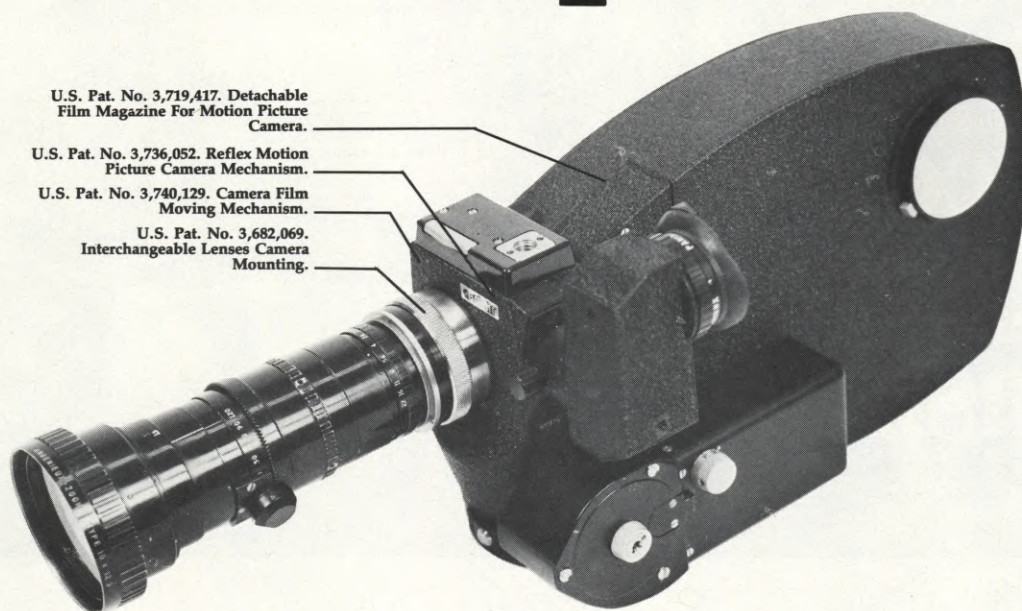


LED RECEPTOR EXPANDS TESTING CAPABILITY

Photo Research Division of Kollmorgen Corporation announced the introduction of its new Light Emitting Diode (LED) Receptor accessory for use with its line of Spectra® Photometers and Radiometers. This device will enable users to expand the light measuring capabilities of the company's 1980 Pritchard®, Spot-Meter and SpectraSpot™ models to include the measurement of axial luminous (or radiant) intensity of LED's. The 12-inch-long tube mounts on the front of the photometer's objective lens. After an LED is inserted in the entrance port on the end of the tube, the photometer will measure LED output in intensity units (candelas, millicandelas or watts/steradian, depending on calibration).

A stock item, the new LED receptor sells for \$250 and includes a single-wavelength calibration. When ordering, **Continued on Page 707**

The people who develop the ideas hold the patents.



U.S. Pat. No. 3,719,417. Detachable Film Magazine For Motion Picture Camera.

U.S. Pat. No. 3,736,052. Reflex Motion Picture Camera Mechanism.

U.S. Pat. No. 3,740,129. Camera Film Moving Mechanism.

U.S. Pat. No. 3,682,069. Interchangeable Lenses Camera Mounting.

Anyone can claim to have exclusive features and new ideas. But we have the patents to prove it.

In fact, the French Eclair ACL is protected by four separate U.S. and International patents held by Eclair International of France.

There is one patent on the reflex mechanism and another on the film pull-down claw. These two features make the ACL quieter and simpler. And the simplicity makes the ACL reliable, quick to service and lightweight.

There is also a patent on the interchangeable lens mount. This feature allows you to use lenses with any of the well-known professional mounts. Including, of course, the heavy-duty Eclair bayonet mount. Since the bayonet mount is both precise and rugged, you can use zooms and other long or heavy lenses without any other lens support. There is also the added versatility of a "C" mount. So, instead of mere adaptors, the ACL has a true universal lens mount.

Finally, there is a patent on

the instant snap-on, co-axial magazine. This design makes it simpler, quieter and more reliable. And it can be changed in less than five seconds, without touching the film.

We believe all these features support our claim that the French Eclair ACL is the finest 16mm professional camera of its kind in the world.

And in case there's any question about who developed these features, or who has the exclusive rights to them, just remember who holds the patents.

The French Eclair ACL

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The first successful heart transplant!



In 1969.

The operation was a complete success!

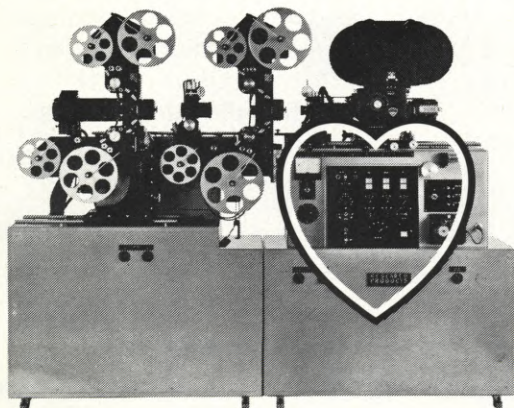
The old-fashioned mechanical film drive, heart of our world-famous Optical/Special Effects Printers, had its day . . . Mechanical gear trains, levers, motors, shafts, stop-motion clutches, solenoids, knuckle joints and the like, suddenly became obsolete in deference to new, sophisticated technology.

Our new space-age *PhotoTron** all-electronic drive system was the *new heart* substituted in this major and radical surgery. It embodied computer-accurate stepping motors and solid-state electronic circuitry on snap-out cards for virtual elimination of equipment down-time. The operation was so successful that the Academy of Motion Picture Arts and Sciences presented it the 1973 Technical Award!

In addition, we provided our printers with unique automatic capabilities for zooms from 4X enlargement to 5X reduction, dissolves, logarithmic or linear for perfect fades/dissolves without overlap, flip-of-a-switch shutter programming over a predetermined fade count, and skip-frame programming that gives unlimited combinations at all speeds and with three heads simultaneously!

And there's more: the *PhotoTron* can be adapted easily to computer control or tape programming, and its power requirements are appropriate for international use.

For complete technical data, prices and delivery—write, telephone or cable Research Products, Inc., 6860 Lexington Ave., Hollywood, CA 90038, USA; Telephone 213-461-3733; Cable: RESEARCH.



The Model 2101, illustrated, is one of our two Award-winning patients; we also have several others. They're all in great demand . . . world-wide . . . in North America, South America, Europe, Asia and the Middle East. References available on request.



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The Beaulieu R16B(PZ)...

(just one of many
Beaulieu 16mm
camera systems)



That's right. The Beaulieu R16B(PZ) is only one of an entire family of light weight 16mm camera systems designed and manufactured by Beaulieu.

Unique with the Beaulieu R16B(PZ) model is the built-in power zoom feature which provides an infinitely variable zoom speed range with the most accurate fully automatic diaphragm control system insuring perfectly exposed shots every time.

Although the extremely moderate price range of Beaulieu 16mm cameras might just be the first thing to "catch your eye" (since prices start at under \$1300 for a 16mm body), we feel that the basic feature points alone will impress you the most.

Like all Beaulieu 16mm camera systems, the R16B(PZ) offers:

MIRROR REFLEX VIEWING
BEHIND-THE-LENS GOSSEN
EXPOSURE METER

VARIABLE SPEED RANGE (2 to 64 fps)
SYNC SPEEDS (24/25 fps)

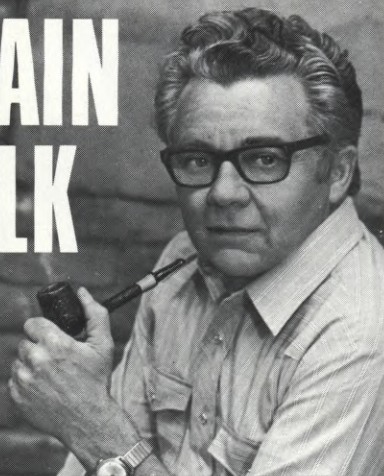


The remarkably light weight, and easy to handle Beaulieu R16B(PZ) is ready to go wherever your next filming assignment takes you. The camera comes equipped with either an Angenieux 12-120mm or 17-68mm zoom lens...and, available separately, is a full line of professional 16mm accessories for use with the R16B(PZ) camera.

To find out more about the Beaulieu R16B(PZ) model (as well as the entire family of Beaulieu 16mm motion picture cameras), please write us. We will be more than happy to send you a full color descriptive brochure on the Beaulieu 16mm camera systems.

CINEMA  **Beaulieu**
A DIVISION OF HERVIC CORPORATION
General Office: 14225 Ventura Blvd.,
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PLAIN TALK



by *J. Carl Treise*

When your film processor is sick, will the manufacturer make a "house call"?

I get a little tired of hearing film equipment manufacturers talk about how much they care . . . and then not coming to your help, when you really need them.

When you have a problem, can you reach a top man in the organization, or are you shunted aside to some lackey? If your problem is serious, will they hustle someone out to see what's wrong and help you on the spot?

I'm disturbed by the fact that some manufacturers don't seem to give a damn any more, once they make a sale. If the delivery is weeks (or months) late, if the gear arrives without all the parts, if the unit doesn't work as promised, that's just too bad.

If anyone shows up on your doorstep, it's likely to be a salesman full of explanations . . . and that's about it.

A quotation should be more than just a piece of paper. It's a commitment between people. It's a promise by the manufacturer that he will build for you exactly what you need and if the equipment doesn't do everything it's supposed to do, he'll come back and make sure it does.

Anything less is a sham.

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QUESTIONS & ANSWERS

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

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



Q What is the method used by animation studios to effect a gradual, overall change of the color of the lighting in the same scene — as for example predominantly blue to red? An example of this is in the old Walt Disney movie, "Sleeping Beauty", where one of the fairies puts the two kings, Hubert and Stephan to sleep in the castle. As they drift into slumber, the scene, which is multi-colored, gradually takes on an overall greenish hue, resulting in a near-monochromatic color scheme.

A The effect is very simply done by sliding colored gelatin filters before the lamps lighting the animation table carrying the artwork being photographed, or by having two sets of lamps set up to light the table, with both sets working from dimmers. In the latter scheme, one set of lights (of one color) is gradually dimmed out and the other color lights are brought up in density as shooting of the scene progresses.

Q Would it be possible to tell me how one creates artificial cobwebs and how one goes about creating "ice flowers" often found on windows on very cold winter days?

A The usual way to make artificial cobwebs is to use a small fan, removing the guard from in front of the vanes. To the end of the shaft in front of the blades attach a special metal container. Rubber cement is poured into the container and the fan is turned on. As the fan turns, the centrifical force expels the cement into the wind stream. The air partly dries the rubber cement as it is blown out. Direct the fan toward the area in which you want the cobwebs and in a cross-movement of the fan you will create the pattern of cobwebs you desire.

The container is shaped like two saucers placed face to face with about a six-inch diameter; two-inches thick at the center and tapering off to about one quarter inch at the rim. In the center of the outer side a screw-cap is placed so that the liquid can be poured into the container. A nut is attached at the back to screw onto a bolt attached to the end of the fan shaft. Drill small holes in the container at the outer rim to release the

liquid, gradually enlarge them to desired effect.

Use the fan at a slow speed for close work and a high speed for distance.

"Ice flowers" are made from a thick solution of stale beer and epsom salts. A thick paste is made of these two items and is brushed onto the edges of window panes in liquid form. As the solution dries it crystalizes into the "ice flowers". The solution must be well dissolved but not too liquid, or it will run and drip, causing streaks. A hot air fan such as a hair dryer will speed the drying process.

Q Every book I read has a different definition for each camera shot. What is your definition for a long shot, medium-long shot, medium shot, medium-close shot, close shot, close-up and extreme close-up?

A These definitions often mean different things to different people but the accepted rule of thumb is: A long shot is one of scenic scope where the figures' faces are not necessarily recognizable, used to establish locale. A medium-long shot is a full figure or more of the players, used for physical movements, such as getting into a car, mounting a horse, etc. A medium shot is one of knee-size, used for group scenes. A medium-close shot usually cuts the figure at the hips. A close shot cuts the figure at the waist. A close-up is generally of head and shoulder size and an extreme close-up is of the face only.

While the above definitions are related to the human figure size, the same reasoning can be applied to inanimate objects. ■

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Copy deadline for classified advertising is the 1st of month, preceding publication date. Mail copy and remittance to cover cost to

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Bellow into it, sweat over it, man-handle it. Practically jam it into the bell of a trumpet. Without overloading. Without distorting.

This AKG D-140E is a super-tough single element, cardioid dynamic microphone that's sensitive enough for top studios or concert halls.

Frequency range: 30 to 15,000 Hz. SPL for 0.5% THD: at 1000 Hz is 129dB. Its front to back discrimination exceeds 18dB at 1000 Hz at a sound incidence angle of 180°.

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While it delivers all the high quality audio a program produces, it's so small it can't hide anybody's video.

The D-140E lets music sound life-like, without any coloration of its own. There's a 12dB bass roll-off filter switch recessed into the handle to let you reduce the proximity effect. Or retain it, as the needs of a session dictate.

The D-140E's transducer is internally suspended and encapsulated by a wire mesh/urethane foam windscreen/shield. So handling noise, dust, wind and popping won't interfere with your work.

See your professional equipment dealer for the D-140E or write to us. Before the pressure builds up.

AKG MICROPHONES • HEADPHONES

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AUDIO DIVISION

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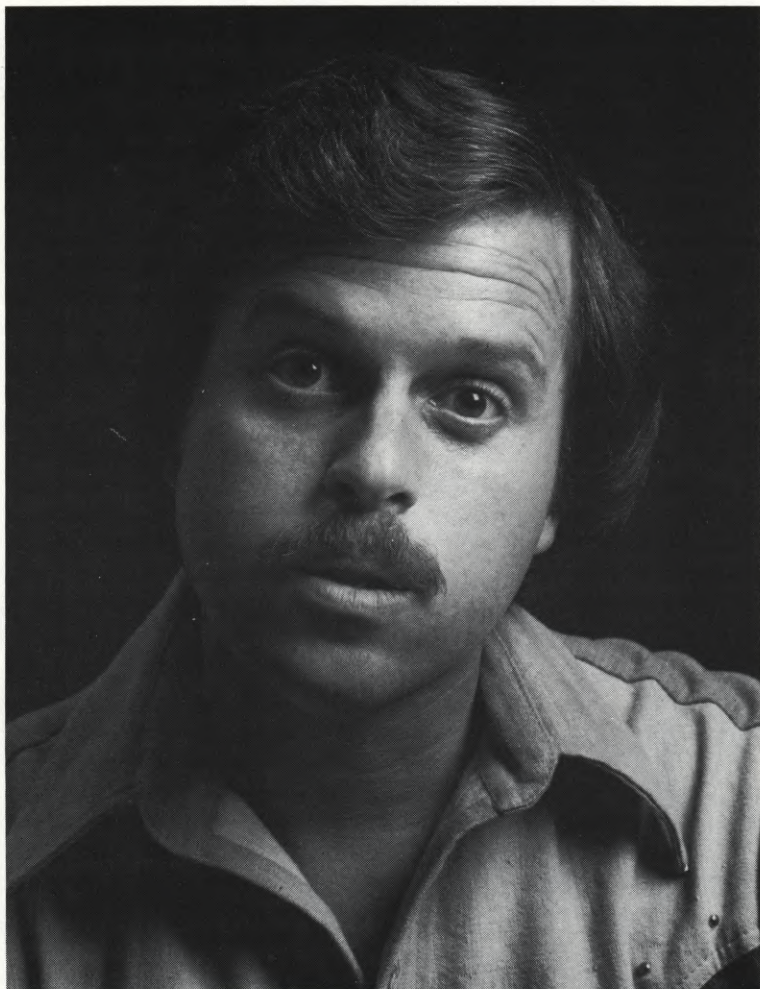


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And to operate this advanced system we employ the best technicians in the business.

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animals can't talk...

Mark and Marty Stouffer tell their story . . . with Arriflex.

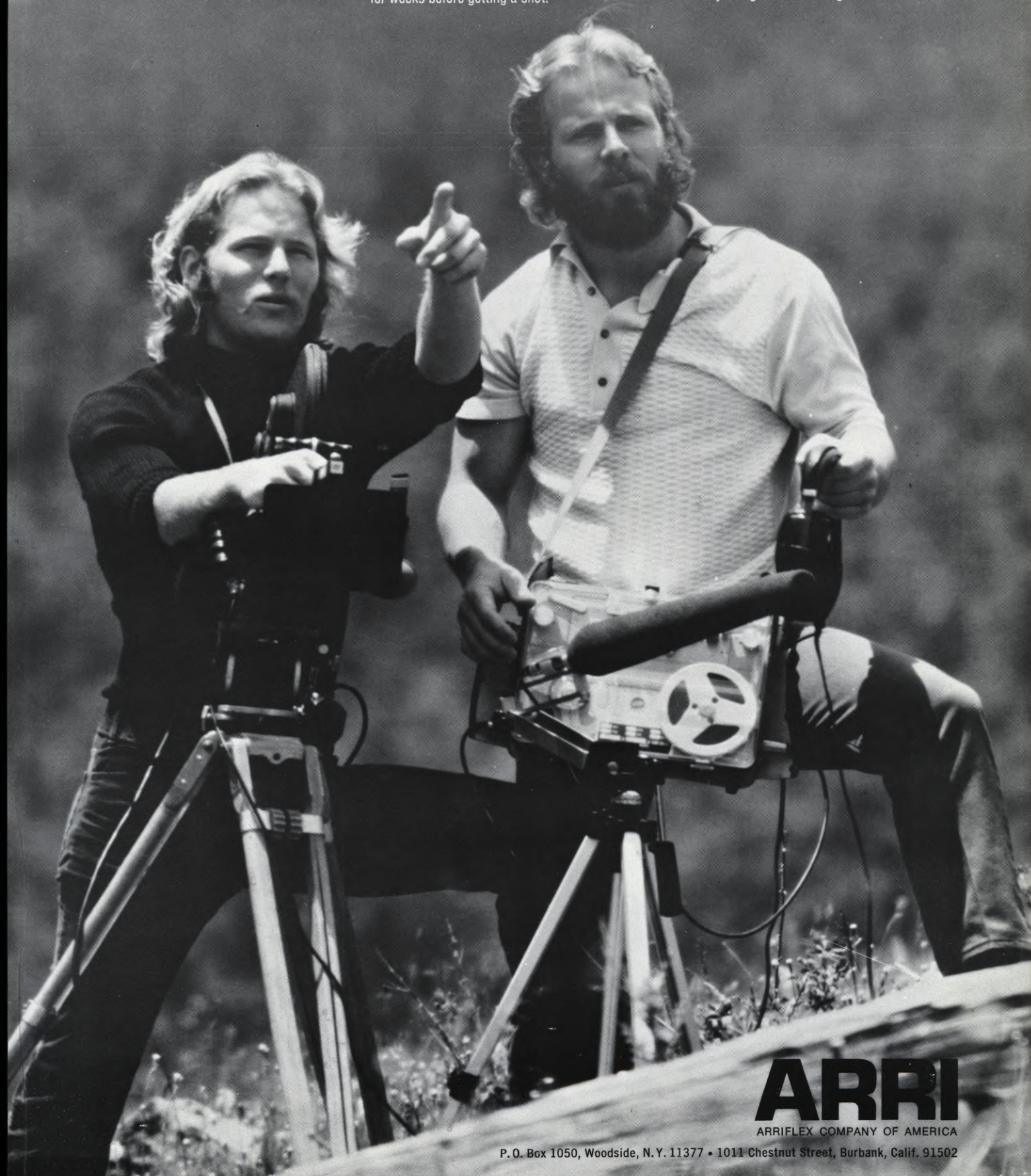
"Most animals and birds have very acute hearing. The slightest sound can send them running..."

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CINEMA WORKSHOP



By ANTON WILSON

UNDERWATER II

Filming underwater can be a cameraman's dream. Where else can you float "weightless" with your camera and maneuver yourself over, under and around your subject at will? These moving camera shots are actually quite easy. The cameraman's movement through the water gives him an element of stability. It is the static shot that poses problems. A cameraman with neutral buoyancy will tend to bob around with the slightest movement.

A simple solution is an inflatable life vest. The cameraman carries extra weight to give him a definite negative buoyancy. He then partially inflates the vest which counteracts the extra weight to achieve neutral buoyancy. When a static shot is desired, the vest is totally deflated, which plants the cameraman firmly on the bottom. The vest can also be fully inflated in an emergency which will shoot the cameraman rapidly to the surface.

Another trick when filming on the bottom is the use of a wet suit that incorporates little booties. When on the bottom, the cameraman removes his flippers (heavier than water) which could kick up sediment into the camera view, and can walk around in the booties.

The biggest problem in filming underwater is suspended sediment and particles in the water. These particles cut down the light and severely limit the distance through which you can film. It is very similar to filming in a perpetual and dense smog.

This brings up two obvious points. Try to film in the clearest body of water you can find. The areas around the Bahamas are a favorite. Secondly, film at the shallowest depth you can get away with. If the scene is supposed to be at 300', you don't want surface ripples in the scene. A depth of ten feet is ideal, but usually impractical, due to surface effects. The range from 25' to 15' is probably the most workable. Things begin to go downhill past 30'.

First there is the time factor. Below 30' divers must go through a decompression procedure upon ascending and must not exceed certain time limits, depending on depth. These considerations do not exist above the 30'

level. In addition, light levels and color saturation fall off rapidly below 30'.

Light being at a premium, it is best to film between 10 a.m. and 2 p.m. for optimum results. Actually, high noon is not quite as good as the late morning and early afternoon.

Artificial light should be employed only when absolutely necessary, as in a cave. Artificial light always looks like exactly that. The suspended particles will kick the light back into the lens, much like headlights into a dense fog. If lights must be used, they should be placed to the side or above.

The color of the bottom is also a factor. Bright sandy bottoms will reflect a good deal of light. Some divers are surprised to find the water actually gets brighter as they near the bottom of a deep dive.

Color balance is a big problem, as the reds begin to disappear quickly as depth increases. Almost all reds are gone at only 10' and oranges vanish at about 30'. Some cameramen employ color-compensating filters, such as CC20-50 reds or magentas. But this can be overdone. Not only will it reduce light levels, but the result may be too well-balanced and not look "under-

water." Jordan Klein uses no correction filters at all. He is always able to achieve the desired results at the printing stage.

In almost all cases, the timer can correct the color balance. This brings up an important point. You should choose your laboratory carefully. Its technicians should be very familiar with underwater footage. A proficient timer who turns out excellent studio footage may not know what good underwater quality should look like. As previously stated, the color balance problem can be minimized by staying close to the surface.

Because action seems to move so much more slowly underwater, most cinematographers use a 22 fps camera speed. Actually, a slower speed of 18-20 would be even better, but the air bubbles will appear to rise too fast, revealing the in-camera trickery. Thus, the 22 fps rate is a conservative compromise. The governor motors should have the points or electronic circuits recalibrated for this speed.

Probably the greatest difference between surface and underwater cinematography is the choice of lenses, which is our next topic. ■

Jordan Klein maneuvering with one of his underwater rigs. Because action seems to move so much more slowly underwater, most cinematographers shoot at 22 frames per second. Camera governor motors should have the points or electronic circuits recalibrated for this speed. The best natural lighting conditions occur underwater between 10 a.m. and 2 p.m.



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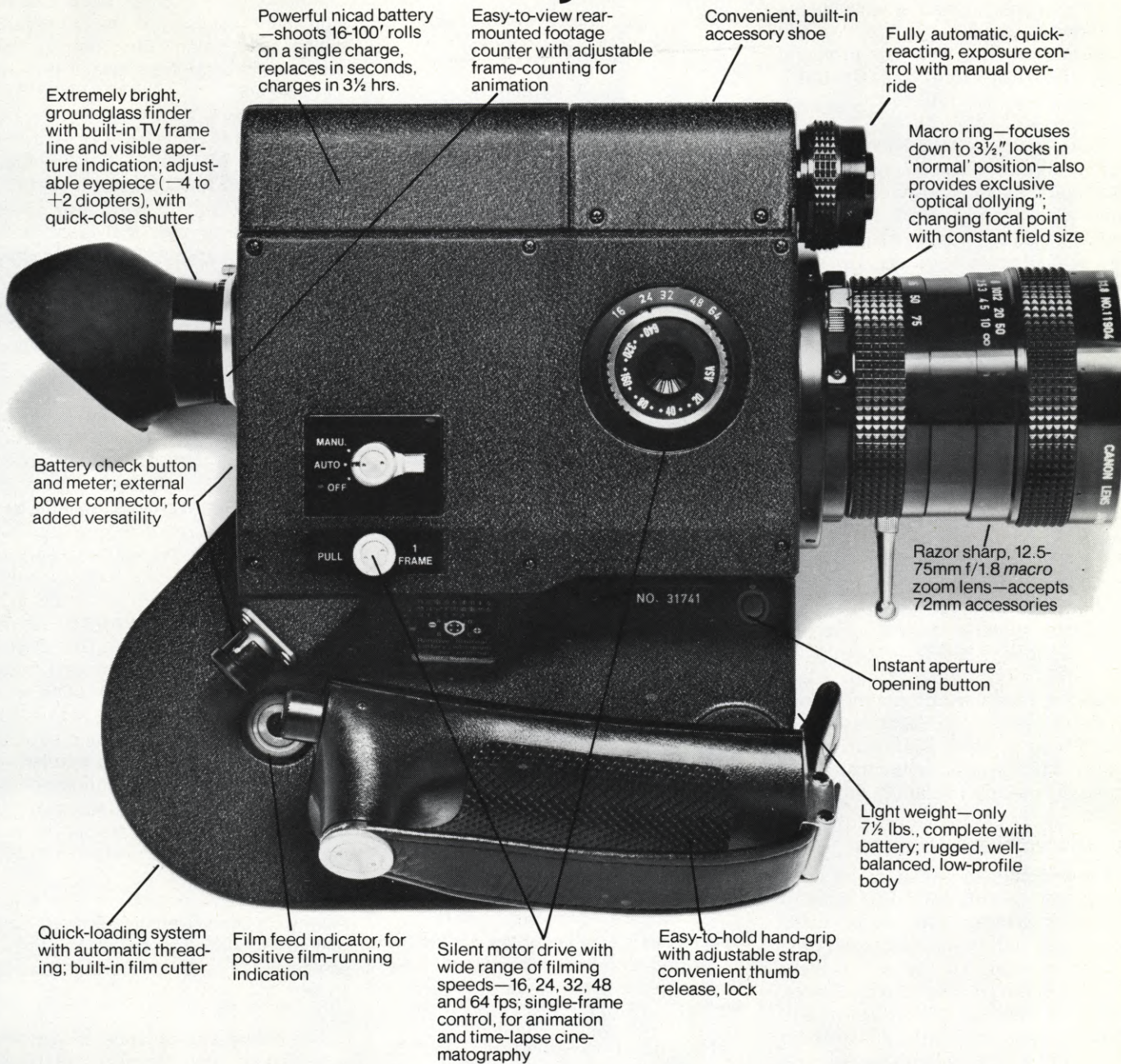
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CINEMA PAST AND FUTURE

A panoramic study by Jerzy Toeplitz, Polish film historian now head of the Australian National Film School, **HOLLYWOOD AND AFTER** offers a comprehensive survey of the "changing face of American cinema." It analyzes with insight and originality the U.S. movie industry, its creative and corporate leaders, and the profound changes that time has brought. (Regnery \$12.95/9.95)

* * *

Axel Madsen's **THE NEW HOLLYWOOD** views the current scene in the film capital as an aggressively streamlined operation geared to today's exploding culture, as it rises from the chaotic demise of antiquated production methods, no longer relevant attitudes and passé personalities. (Crowell \$7.95)

* * *

Boldly blaming our disastrous Asian policy on movie-created public attitudes toward war, Julian Smith's **LOOKING AWAY: HOLLYWOOD AND VIETNAM** is a challenging and fascinating book. It documents the U.S. film industry's inability to deal with that conflict except figuratively (e.g. *M.A.S.H.*) or psychopathically (e.g., *The Green Berets*), and provides controversial fare for political scientists, film students and plain movie buffs. (Scribner's \$8.95)

* * *

A highly readable account by Oxford Prof. D. J. Wenden, **THE BIRTH OF THE MOVIES** is a fresh approach to the history of film as seen in its societal and economic context. (Dutton \$5.95)

* * *

FILMS AND THEIR MAKERS

Top directors speak out in **THE MEN WHO MADE THE MOVIES**, Richard Schickel's spin-off from his brilliantly conducted interviews as seen last season on public TV. Under Schickel's expert prodding, Capra, Cukor, Hawks, Hitchcock, Minnelli, Vidor, Walsh and Wellman respond with enlightening comment, wistful reminiscences and piquant anecdotes. (Atheneum \$12.95)

* * *

For **FILM MAKING: THE COLLABORATIVE ART**, Donald Chase (with an assist from the American Film Institute) has interviewed scores of creative individuals involved in the making of movies, from producers to special effects men, and singling out the cameramen's contribution. This informative report draws a clear and lively picture of a complex medium. (Little, Brown \$9.95)

* * *

Viewing cinema as the "fabulous fantasy machine," David Annan's

THE BOOKSHELF

By GEORGE L. GEORGE

MOVIE FANTASTIC evokes in some 300 bewitching stills the most memorable moments in the camera work of hallucinatory, weird or esoteric motion pictures. (Crown \$2.95)

* * *

Humorist's S. J. Perelman's involvement as a scriptwriter with Mike Todd's epic, *Around The World In 80 Days*, is recounted in one of the pieces assembled in **VINEGAR PUSS**. Perelman's traumatic experience is told with mordant wit and lethal personality-deflating jabs. (Simon & Schuster \$7.95)

* * *

Edited by F. Maurice Speed, **FILM REVIEW 1974-75** is an attractive text-and-photo roundup of world production, and covering such related topics as the communication media, awards and festivals, film books and a forecast of films to come. (Transatlantic Arts \$12.50)

* * *

Sharon Smith's **WOMEN WHO MAKE MOVIES** contributes solid and timely information to our knowledge of cinema. Her broad study combines an historic survey of women as film directors, cinematographers, editors, writers and producers; a report on "new filmmakers;" and a directory of 725 U.S. women cinéastes. It is uniquely interesting and valuable as a first book to document fittingly a significant aspect of the medium. (Hopkinson & Blake \$9.95/5.95)

* * *

In **KUNG FU: CINEMA OF VENGEANCE**, Verina Glaessner examines in detail the Hong Kong film industry, its producers, directors, actors and specialized cameramen, as well as the "unarmed combat" techniques these films so spectacularly display. (Crown \$2.95)

* * *

The most celebrated kung fu performer is eulogized in **BRUCE LEE: THE MAN ONLY I KNEW**, a biography by his Seattle-born widow, Linda Lee. It is a moving and informative tribute to the actor, describing his career and the philosophy of the martial arts. (Warner \$1.50)

* * *

MOVIE DATA BANKS

A broad field of research is opened in **THE NEW FILM INDEX**, a bibliography of magazine articles in English covering the 1930-70 period. Dealing with cinema's historic development (including a section on camera work and lighting), this scholarly compilation

by Richard Dyer MacCann and Edward S. Perry contains some 12,000 entries divided into 278 categories. (Dutton \$35.)

* * *

In **THE MEDIA READER**, editors Joan Valdez and Jeanne Crow offer a comprehensive selection of 56 texts on significant aspects of the communications field, notably photography, "the most basic form of creativity." (Pflaum \$11.95/7.95)

* * *

From 14 English-language magazines, **RETROSPECTIVE INDEX OF FILM PERIODICALS 1930-1971**, editor Linda Batty has expertly culled articles dealing with individual films, film subjects (notably camera work) and film book reviews. These pieces appeared in such publications as *Film quarterly*, Britain's *Sight and Sound*, and the Canadian *Take One* (Bowker \$24.50)

* * *

A valuable listing of current books on film is part of Ralph Newman Schoolcraft's **ANNOTATED BIBLIOGRAPHY OF NEW PUBLICATIONS IN THE PERFORMING ARTS**. Reliable and informative, this ongoing publication is issued quarterly. (Drama Book Service \$2.50 yr.)

* * *

Pare Lorentz, whose early documentaries (*The Plow That Broke the Plains*, *The River*) are milestones of the genre, has collected in **LORENTZ ON FILM: MOVIES 1927 TO 1941** some 90 of his own film reviews and essays. These farsighted, lively and perceptive texts, where filmmaking expertise combines with critical insight, afford an invaluable look at film history in the making. (Hopkinson & Blake \$10./6.50)

* * *

A paperback edition of film critic Manny Farber's "Negative Space," now retitled **MOVIES**, focuses on the visual essentials of cinematic art. (Stonehill \$3.95)

* * *

The nature and potential of film are assessed in Alan Casty's **THE DRAMATIC ART OF THE FILM**, a perceptive appraisal of the esthetics of the medium, where cinematic devices — mainly the photographed image — fulfill its dramatic content. (Harper & Row \$3.95)

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Compiling in **PHOTOPLAY EDITION** some 800 titles of books turned into screenfare, Emil Petaja opens a new area of "movie collectibles" dating back to 1912, when Mary Pickford's *Poor Little Rich Girl* inaugurated what we now call "movie tie-ins." (Sisu Publ., Box 14126, San Francisco, CA 94114 \$5.95)

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INDUSTRY ACTIVITIES

ACADEMY AWARD WINNING CINEMATOGRAPHER TO CONDUCT FILM-MAKERS SEMINAR

Conrad Hall, ASC, four time Academy Award nominated cinematographer, will conduct a six-day seminar in film-making and photography for advanced cinema students and professional film-makers, July 20 to 26 at the Maine Photographic Workshops in Rockport, Maine. Mr. Hall has been the cinematographer on the following films, some of which will be screened during the seminar: BUTCH CASSIDY AND THE SUNDANCE KID, IN COLD BLOOD, FAT CITY, COOL HAND LUKE, HELL IN THE PACIFIC, MORITURI, ELECTRA GLIDE IN BLUE, THE DAY OF THE LOCUST, and others.

The film-makers seminar is an intensive six days of film screenings, group discussions, individual critiques of student's films, rap sessions and personal consultations. Each applicant must have completed a recent film, in 8mm or 16mm. A number of Conrad's award winning films will be shown, followed by a question and answer session with students.

Conrad will meet individually with each student during the week to discuss personal direction, approach to film, and to critique recent films. Cinema students in college may submit class-project films for critique. Non-film-makers may audit the course for a reduced rate which covers admission to all showings and group discussions. Each applicant is requested to submit a short resume, and paragraph stating his or her present directions in the field. These will be passed along to Conrad prior to the beginning of the course.

Tuition: \$180 for film-makers; \$100 for non-film-makers; includes admission to all screenings; \$10 application fee (non-refundable).

College credit and student housing is available. Additional information on the film-maker's seminar, and the other photographic courses offered at the Workshops may be obtained by writing the Director, Maine Photographic Workshops, Rockport, Maine 04956.

NEXT CP-16 MAINTENANCE TRAINING SEMINAR SCHEDULED FOR SEPTEMBER 26-27, 1975

Cinema Products Corporation announces that the next CP-16 Main-

tenance Training Seminar will be held on September 26-27, 1975, just prior to the SMPTE Fall 1975 Conference and Exhibition (which is scheduled to start on September 28, 1975, in Los Angeles).

Designed for TV-newsfilm/documentary cameramen, TV station and dealer service technicians, the CP-16 maintenance workshop/seminars emphasize effective trouble-shooting, preventive care and simple repairs under field conditions. The seminars are held at the Cinema Products modern facilities in West Los Angeles.

For application forms and further information on the CP-16 Maintenance Training Seminar, write to Ed Clare, Seminar Coordinator, Cinema Products Corporation, 2037 Granville Avenue, Los Angeles, California 90025. Tel: (213) 478-0711.

APPOINTMENTS ANNOUNCED FOR 117th SMPTE TECHNICAL CONFERENCE

Society of Motion Picture and Television Engineers' Conference Vice President Harry Teitelbaum, Hollywood Film Co., has appointed Robert Gustafson, Consolidated Film Industries, as Local Arrangements Chairman, and Warren Strang, Hollywood Film Co., as Exhibit Chairman for the 117th Technical Conference which will be held at the Century Plaza Hotel on Sept. 28-Oct. 3, 1975.

Assisting Mr. Gustafson will be Ed Burns, Eastman Kodak Co., Hotel and Arrangements Chairman; Eugene M. Murphy, Eastman Kodak Co., Registration Chairman, assisted by John Lakotas, Eastman Kodak Co.; Carroll Adams, Public Address and Recording Chairman; Phil Singer, Opening Films Chairman; Jack Lehy, RCA, Banquet Chairman; Walter Eggers, M.G.M., Luncheon Chairman; Don Kloepfel, De Luxe General, Projection Chairman; Edward Whiting, Jr., 3M Co., Membership Chairman; assisted by Grover Boyd, Eastman Kodak Co.; Scott Robertson, Eastman Kodak Co., Transportation Chairman; Russell F. Dubes, Auditor Chairman; Mrs. Brenda Smith, Hospitality Chairperson; Harry Lehman, Cine Tele, Publicity Chairman; Mrs. Julian Hopkinson, Ladies Program Chairperson, assisted by Mrs. Fred Scobey.

Gerry Graham, Editorial Vice

President, appointed Julian Hopkinson of Agfa-Gevaert as Program Chairman for the 117th.

Having changed from two major conferences a year to a one-a-year program, Mr. Teitelbaum stressed the need for a strong papers program with increased exhibitors participation to induce greater attendance.

LONDON'S FILM '75 TO FEATURE MOTION PICTURE EQUIPMENT FLEA MARKET

Call it what you like: a film camera flea market . . . a Portobello Road for audio-visual aids . . . a movie equipment bazaar . . . or a cine/sound bring-and-buy sale . . .

The British Kinematograph Sound and Television Society (BKSTS) will stage Britain's first-ever movie equipment "bring, buy or browse" sale at the Royal Lancaster Hotel on Saturday, June 28.

The event will take place on the day following FILM '75, and anyone who has used professional cine camera, sound, lighting, CCTV, broadcast TV or associated equipment is welcome to set up shop for a day.

Anyone wanting to buy, or even browse, be he amateur or professional, company or individual, who is interested in 16mm, 35mm or Super-8 film, quarter-inch tape sound or TV cameras, monitors, recorders, etc., is welcome.

If you are a seller, you will need to arrive between 8 and 9 a.m. If a potential customer, the market will be open between 10 a.m. and 4 p.m.

STUDENT FILMMAKERS VIE FOR PRIZES IN BROADWAY'S CINEMEDIA VI COMPETITION

The sixth annual Cinemedia Film Festival competition, sponsored by the Broadway Department Stores in the Los Angeles area, is offering more than \$3000 in prizes to college and high school student filmmakers whose entries are received by June 20 of this year.

There's no restriction on subject matter, but films must be photographed in 8mm, Super-8 or 16mm, with a maximum running time of 30 minutes. Black and white, color, live

Continued on Page 708

TACK THIS AD TO YOUR WALL. IT COULD KEEP YOU FROM CLIMBING IT.

OR, HOW TO CUT YOUR PRODUCTION BUDGET WITHOUT CUTTING CORNERS ON PRODUCTION.

Over the years, experience has taught us a lot of "obvious" things can get overlooked from time to time, even by the most experienced of us:

1. Start at the beginning. No matter how many other things are on your mind, take the time to preplan equipment needs with your cameraman, electrician, gaffer, etc. It'll save your money and your ulcer.

2. Scout, save wampum. Location or studio, study it thoroughly with eyes and ears... and clock. Extra lighting for that late-afternoon shot, or extra sound blankets for rush-hour are a lot easier to get *before* you need 'em.

3. Rent? Lease? Or buy? The most obvious solutions aren't always best, especially where big numbers are involved. Sometimes the best deal is a combination of things, for reasons ranging from cash flow to taxes. Talk to experienced people... like your accountant. Or us.

4. Does it have to be new? With used equipment, the people and the company can make it a beaut of a deal, or a hell of a migraine. Certain types of equipment

hardly deteriorate at all with age. Ask our rental department.

5. Is there a less expensive way?

Check your ego, now: large-ratio zooms, crystal control and super cameras are great... but you'll save if primes, cable sync and an ol' reliable camera can do the job.

6. Cutting costs in the wrong places?

Post-production magic can undo boo-boos before the lens, but a dollar spent on flexibility and "insurance" for the shoot can be worth \$5, \$10 or more in post-production. Consider things like video-reflex systems, to cut down on retakes; multi-track recorders, for better sound; more lighting, for shooting options, etc.

7. Don't spare the spares! Even if the peace of mind isn't worth it, the one time you need to use that spare body, motor, battery, etc. is worth the low cost of taking spares each time you shoot.


8. "Package" yourself. Renting or buying a complete package can offer substantial economies. If you own, consider renting a complete second camera package... it's often cheaper than separate spares. (And while you're at it, "package" your purchasing power by centralizing your "buy" to get a better deal.)

9. Go "insured". Insurance is cheap, considering the alternative. Be sure you have enough... and the right kind.

10. Transportation. It can cost a mint... so weigh the idea of lighter, more compact gear, and the 10 minutes more you might need to rig, against the hundreds of dollars it could save in shipping.

11. Location? Or not. Worth a hard second look: studio cost against freight, transit time, unforeseen delays and possible lack of control. Which *really* saves you more?

12. Many of the best ideas... will, of course, depend upon the particular production, people, location, techniques and budget range you have in mind. Give us the opportunity and we'll give you all the know-how and experience we possess... as well as a good deal. There are a lot more ideas where these came from.

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Arri S body, fully reconditioned.....	3,495.
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Auricon Pro 200, Super 16 format.....	2,495.
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Bolex Rex 5, 18-86 Switar.....	995.
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B&H 70 DR, 3-lenses w/objectives.....	495.
B&H 70 DA, 25mm f/1.9 lens, As New	195.
Canon Sound Scoopic, complete outfit	2,795.
Canon Scoopic M, complete outfit.....	1,295.
Eclair ACL, 12-120mm, 2-400' mags.....	9,495.
Eclair ACL, 12-120mm, 2-200' mags.....	6,795.
Eclair CM-3, 16/35mm outfit.....	1,995.
Eclair NPR, 12-120, 2-mags, Xtl.....	8,350.
Eclair NPR, 12-120, 2-mags, Ciblo.....	5,495.
Eclair NPR, 1-mag, Xtl motor.....	6,695.
Fastax Hispeed, 150-4000 fps.....	395.
GSAP gun camera w/lens, 24v motor.....	35.
Gunsight camera w/20' cartridge.....	29.
Kodak Cine Special I w/accessories.....	795.
Kodak Cine Special II w/anim. stand.....	2,995.
Kodak K-100 w/underwater housing.....	695.
Kodak K-100 without lenses.....	275.
Maurer 05, sync, anim. motors etc.	1,895.
Maurer 05, anim. motor, 400' mag.....	1,495.
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17-68mm Angen. C mt. 7" finder.....	495.
18-90mm Schneider C mt. finderless.....	595.
17-85mm Cinor C mt. 7" finder.....	395.
17-85mm Cinor C mt. compact f/3.5.....	219.
17-85mm Berthiot C mt. 7" finder.....	495.
17-85mm Monital C mt. finderless.....	395.
8-26mm Monital f/1.6 C mt. fndrless.....	549.
25-100mm Cinor f/2.4 S mt. 7" fndr.....	295.
18-86mm Switar C mt. auto iris.....	495.
20-60mm Cinor C mt. 3" mechl fndr.....	129.
12.5-75mm Angen. C mt. 10" finder.....	1,195.
12-120mm Angen. C mt. 3" finder.....	1,495.

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11.5mm f/1.9 Schneider.....	299.
12.5mm T/2.0 Cooke Kinetal..... New	339.
16mm f/1.9 Schneider.....	149.
25mm f/1.5 Schneider.....	159.
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C MOUNT FIXED LENSES

10mm f/1.6 Switar Rx..... New	259.
15mm f/2.8 Yvar.....	39.
16mm f/2.8 Yvar.....	49.
16mm f/1.8 Switar.....	79.
25mm f/1.4 Berthiot Rx.....	89.
26mm f/1.9 Switar.....	89.
50mm f/1.5 Wollensak.....	49.
75mm f/2.5 Angenieux.....	169.
75mm f/2.8 Yvar.....	59.
100mm f/2.7 Elgeet.....	69.
150mm f/4.0 Yvar with case.....	169.

OTHER 16MM ACCESSORIES

Arri BL magnetic module w/amplif.....	\$2,295.
Arri BL universal lens housing.....	995.
Arri S film magazine, 400'.....	195.
Arri S magazine torque motor.....	195.
Beala crystal motor for Eclair NPR.....	1,795.
Arri S offset finder with case.....	349.
Bell & Howell 400' magazine.....	125.
Bolex 400' magazine..... Like New	175.
Bolex Unimotor w/battery case.....	159.
Bolex DC regulator for Unimotor.....	79.
Eclair Ciblo DC motor for NPR.....	459.
Eclair crystal motor for ACL.....	1,295.
Eclair 400' magazine for CM-3.....	275.
Eclair 400' magazine for NPR.....	595.
NPR to Mitchell 1200' mag adapter.....	1,295.
Two 1200' Mitchell mags with case.....	495.
Bolex deluxe title stand w/lights.....	239.
Arri BL variable speed control.....	175.
Arri BL offset finder #339-105.....	595.

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Arri IIC blimped crystal zoom pkg.....	8,995.
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Arri IIC/B/GS, constant motor... New	3,995.
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B&H 2709 animation outfit, loaded.....	3,495.
DeBrie Super Parvo Reflex, loaded.....	6,995.
Eclair CM-3 35/16mm 3-lens outfit.....	1,995.
Eclair CM-3, variable motor, 1-mag.....	1,495.
Eyemo Spider, lenses, mag, motor.....	595.
Eyemo Spider, 3-lenses, grip, finder.....	349.
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Angenieux 23-250mm, Arri mount.....	3,495.
Angenieux 35-140mm, Arri mt. motor	1,295.
Zolomatics 28-280mm, BNCR mount.....	1,195.
Tegea 9.8mm f/1.8 in Arri mount.....	695.
Kinoptic 50mm f/2.0 in Eclair mount.....	149.
Kinoptic 75mm f/2.0 in Eclair mount.....	149.
Zeiss 35mm f/2.0 in Arri mount.....	269.
Super Baltars in R35 mounts..... Each	349.
Acme 35 to Mitchell 16 mag adapter.....	149.
B&H 1000' Bipack Printer magazine.....	375.
Eclair CM-3 1000' coaxial magazine.....	975.
Eclair CM-3 400' horizontal mag.....	495.
Eclair CM-3 100' std. magazine.....	149.
Eclair CM-3 1000' blimp w/access.....	2,995.
Eclair CM-3 115v sync motor.....	275.
Eclair CM-3 115v variable motor.....	175.
Eclair CM-3 115v slow speed motor.....	375.

TRIPODS & MOUNTING EQUIPMENT

Arri BL tripod #341-130 w/case.....	695.
Arri S tripod #341-100 w/case.....	329.
Bolex #770 ball leveling tripod.. New	189.
Ceco hvy. duty geared head w/base.....	395.
Ceco Pro Jr. friction tripod w/case.....	149.
Ceco Pro Jr. friction head only.....	89.
O'Connor 100 fluid head only.....	495.
Sachtler Wolf fluid head only.....	349.
Kalimar 3-wheel tripod dolly..... New	89.
RCA all steel microwave tripod.....	195.
Salzman view camera studio tripod.....	595.

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Frezzi 1000DX 115v sync Inverter.....	469.
Frezzi 100D 115v Inverter, rebuilt.....	349.
Frezzi 30v 25-min. light pack, rblt.....	249.
Frezzi 30v 25-min. portable light.....	329.
Gasoline Gen. 12/115/230v 3500w.....	495.
Gasoline Gen. 115/230v 3000w.....	475.
Sylvania SG-77 Sun Gun kit.....	159.
Sylvania SG-70 cordless Sun Gun.....	59.
Sylvania 115v 1000w Sun Gun.....	49.
Molefax 5591 6-light quartz 3900w.....	195.
Colortran 5-light pans (2) w/Cnvt.....	269.
Colortran 115v SV9 light dimmer.....	49.

PRODUCTION ACCESSORIES

Directors finder 35, 20-150mm.....	69.
Directors finder 16, 10-75mm.....	69.
Directors finder 16/35, 8-175mm.....	79.
Weston foot candle meter w/case.....	149.
Collimator, handheld, self powered.....	495.
Honeywell Pentax spot meter w/case.....	119.
Photospot attachment for Spectra.....	75.

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Amega 16mm full interlock system.....	\$6,495.
Amega A-1 16mm recorder, rack mtg.....	1,595.
Amega 16mm dubber, hd. output only.....	1,195.
Amega M-3 portable 16mm recorder.....	1,150.
Ampex 351 rack mt. 1/4" recorder.....	995.
Ampex 400 2-case 1/4" recorder.....	495.
Magnasync 35mm rack mt. recorder.....	1,595.
Magnasync X400-11 16mm Dubber.....	595.
Magnasync 16mm 2-case recorder.....	1,495.
Nagra III sync recorder, case..... Mint	1,395.
Nagra IVL sync redorder w/access.....	2,495.
Nagra IV-SL stereo sync recorder.....	3,295.
Arrivox Tandberg Xtl sync recorder.....	1,195.
Tandberg 11-P sync recorder.....	749.
Stellavox SP7 stereo sync recorder.....	1,995.
Stancil Hofman cen/trk recorder.....	1,495.
Stancil Hofman Intlk/distr. system.....	2,295.
Uher 4000 non sync recorder, access.....	395.

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Auricon Modulite S area galvo.....	249.
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Nagra BS preamp for Nagra III.....	79.
Nagra DH playback amplifier/speaker.....	169.
Nagra BM-II mixer w/amplif. cables.....	169.
Xistor 3-input amplif. for Auricon.....	175.
E-V 642 shotgun mic w/suspension.....	269.
E-V 654 Low Z dynamic hand mic.....	39.
E-V 660 Dual Z dyn. hand mic... New	75.
RCA BK12 Low X lavallier mic.....	59.
Sennheiser 804 shotgun cond. mic.....	349.
Sennheiser 805 shotgun cond. mic.....	395.
Sennheiser 404 hand condenser mic.....	195.
Sennheiser wireless Xmtr & Rcvr.....	249.

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Moviola 16/16 upright editor.....	2,495.
Moviola 35/35 upright editor.....	1,995.
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Moviola M84 16mm 2-plate table. Demo	3,695.
Minette 16mm tabletop viewer... New	195.
Ceco Pro 16mm tabletop viewer.....	95.
Camart 16mm optical reader, no amp.....	89.
Synchro, 4-gang 35mm, 2-head heads.....	189.
Synchro, 4-gang 35mm: \$129.3-gang.....	110.
Guillotine 35mm str/diag. splicer.....	159.
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Bolex 16mm bevel type splicer.....	29.
Hollywood 35mm tape splicer.....	95.
Griswold 35mm cement splicer.....	39.
Moviola 1000' Diff'l rewinds..... 2:	95.

LABORATORY EQUIPMENT

Cramer 16mm color processor... New	2,175.
Cramer 16mm reversal processor B&W	795.
Jamieson 16mm color processor. Mint	6,495.
Custom Printer, 16mm to Super-8.....	2,495.
Federal 16mm inspection machine.....	395.
Perforator, 35mm standard pitch.....	1,395.
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PROJECTORS

B&H 302 16mm magnetic/optical.....	595.
B&H 385 16mm optical sound, 1-case	275.
B&H 179 16mm optical sound, 2-case	179.
Singer Graflex 16mm Insta Load.....	395.
Bauer 16/16 interlock projector.....	2,995.
DeVry 35mm projector with sound.....	1,495.
Fairchild 400 Super-8 cartridge.....	249.
Jayark Super-8 cartridge projector.....	295.
M.P.O. Super-8 cartridge projector.....	375.
Marc 300 power pack kit for B&H 552	295.
Scope projector lens for 16mm... New	125.
Bolex S321 16mm mag/opt. projector	795.

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Craig Victor 1/4" B&W recorder.....	495.
JVC color recorder & 17" monitor.....	1,995.
Sony VP1000 color cassette player.....	695.
RCA TK26 color TV camera chain.....	6,595.
RCA TK26 color film chain complete	9,995.
Techtronics 515 dual trace scope.....	995.
Techtronics waveform monitor.....	895.
Hitachi B&W camera w/9" monitor.....	295.
Packard Bell B&W camera with lens...	249.
Taylor Hobson 40-400mm TV zoom.....	3,450.
Simplex E7 35mm TV film projector.....	2,495.
RCA TP6 16mm TV film projector.....	1,595.

MISCELLANEOUS

Cinema memorabilia, our sample pkg.....	25.
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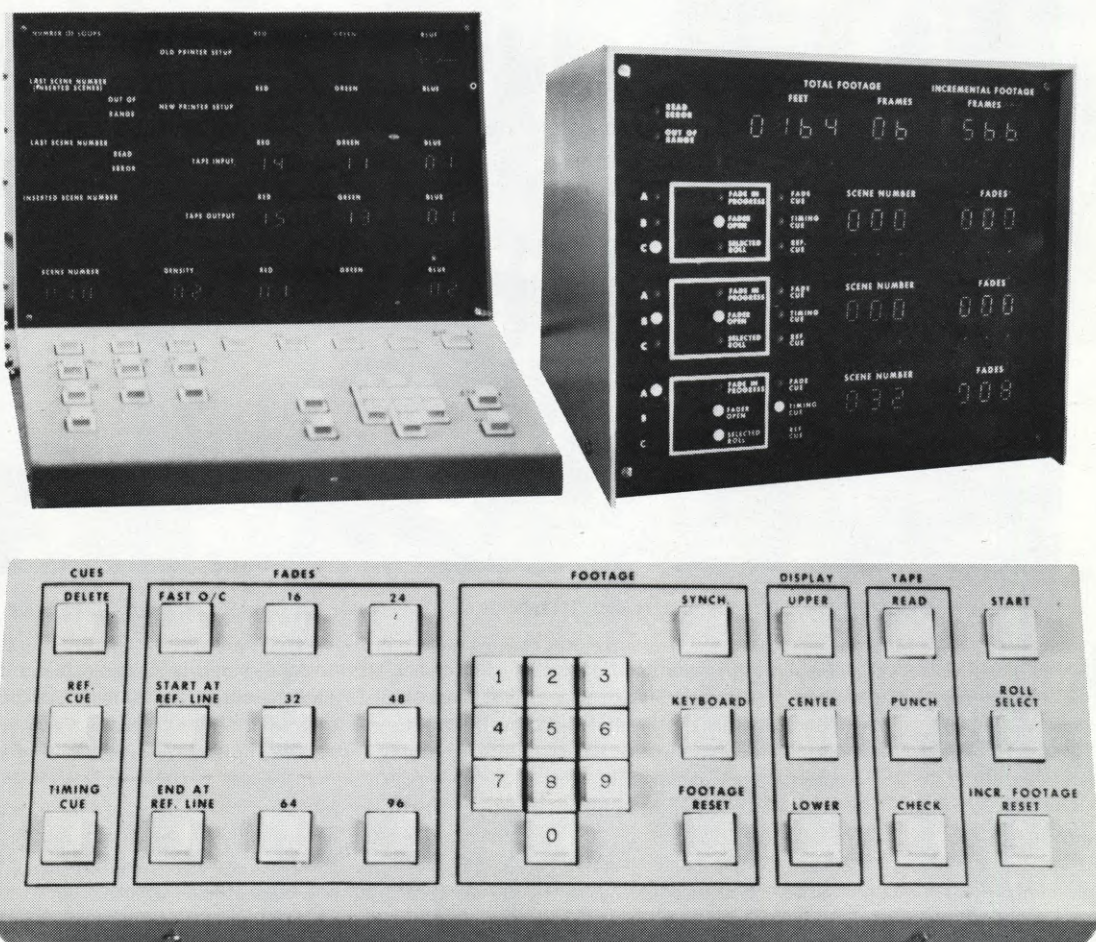
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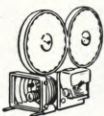
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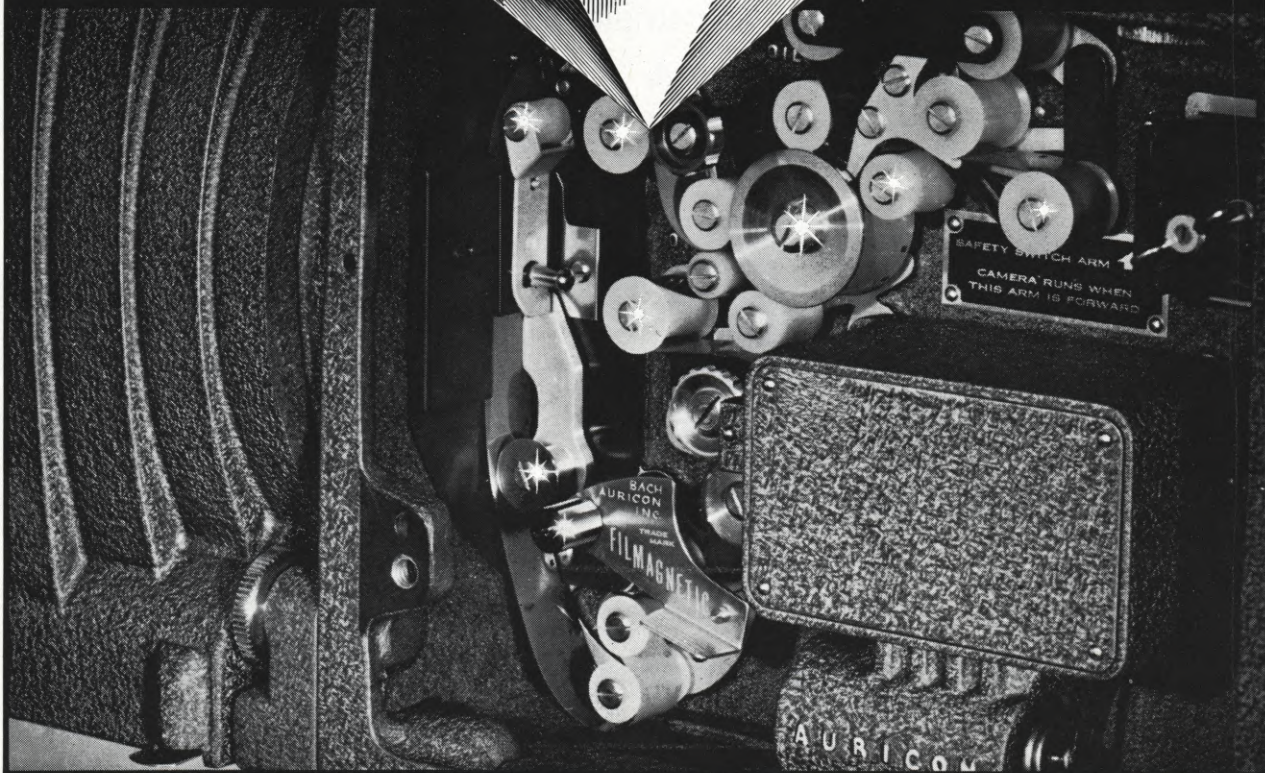


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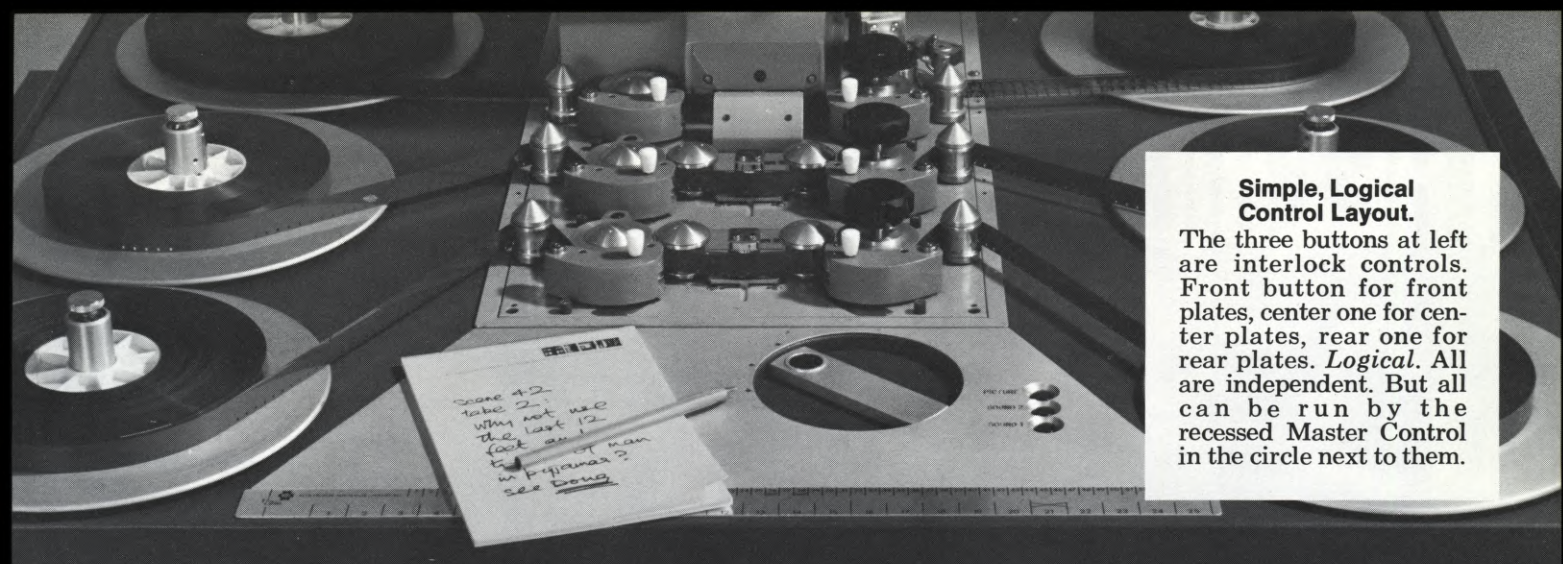


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The KEM stays out of your way. Its *simple* controls free you to think creatively.



Your editing machine *must* give you sound speed. But for frame-by-frame viewing and to hear sound modulations, you *also* need variable speeds from 3 to 24 fps. For fast scanning of dialog and action, maybe 24 to 60 fps. And high speed, for rewinding in sync.

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The KEM gives you all that with *one* Control Lever. Plus an Instant Stop button *on that lever*. Instant stops, at any speed.

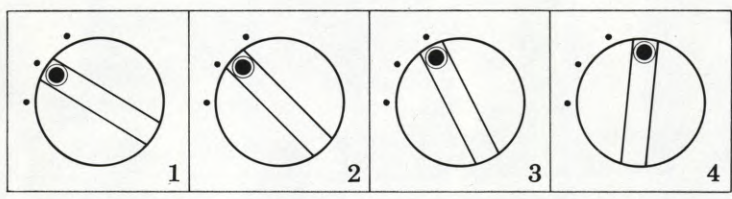


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The Rapid-S is only 42 inches wide. The picture transport is the one furthest from you. Its core spindle is only 26 inches from the table's front. *No stretching.*

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Big, handy inching knobs are mounted on each transport path. You can inch manually with all three transports in interlock, or any one independently — or any two.



ONE CONTROL LEVER DOES IT ALL.

Infinitely variable speeds, forward and reverse. Move lever to right, film goes to right. To left, film goes to left.

In picture 1 above, the Control Lever is at Stop. In picture 2, it's moving the film and/or tracks to the right, somewhere between 3 and 24 frames per second. In 3, the film is going right (forward) at 24 frames per second.

In 4, it's going right at *more* than 24 frames per second. The more you move the Lever, the faster things go. Moving the lever to the *left*, the same thing happens in reverse. Logical and easy. You don't have to *think* about it.

3 Frame Counters

Each transport has its own frame counter, independent of the others — or interlockable, of course. The Rapid-S is like a super synchronizer.

Big, Bright Picture

With KEM's optics, you can clearly distinguish one frame from another. The image stays as bright on freeze-frame. Heat filter. Image area on screen measures 8½ x 11½ inches.

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The sound is fantastic — full and brilliant. You can play it really loud, for the feel of what it will be like in the theater. And whatever's on your track, you'll *hear* it.

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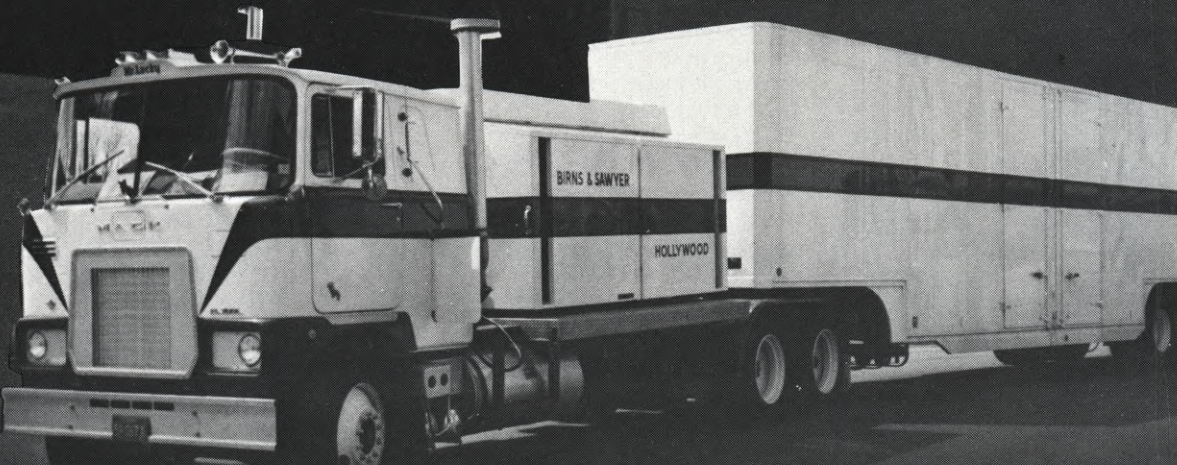


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B & S chose MACK'S top truck for dependability. Brute 325 diesel horsepower "Maxidyne" engine, hi-torque 1,000,000 mile transmission driving twin screw 37,000 lb. axles.



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Hi-cube, steel 12'6" high trailer, 40 feet long, dwarfs the massive tractor. Contains 3,300 cubic feet of practical, workable space in three adjustable rooms for camera, electrical and grip equipment.

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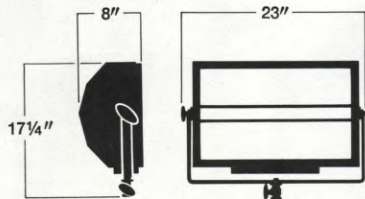
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Mini Soft-Lite

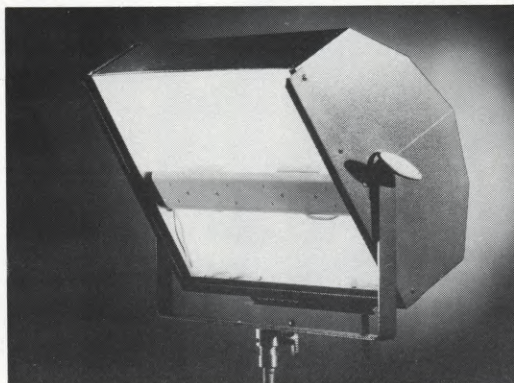
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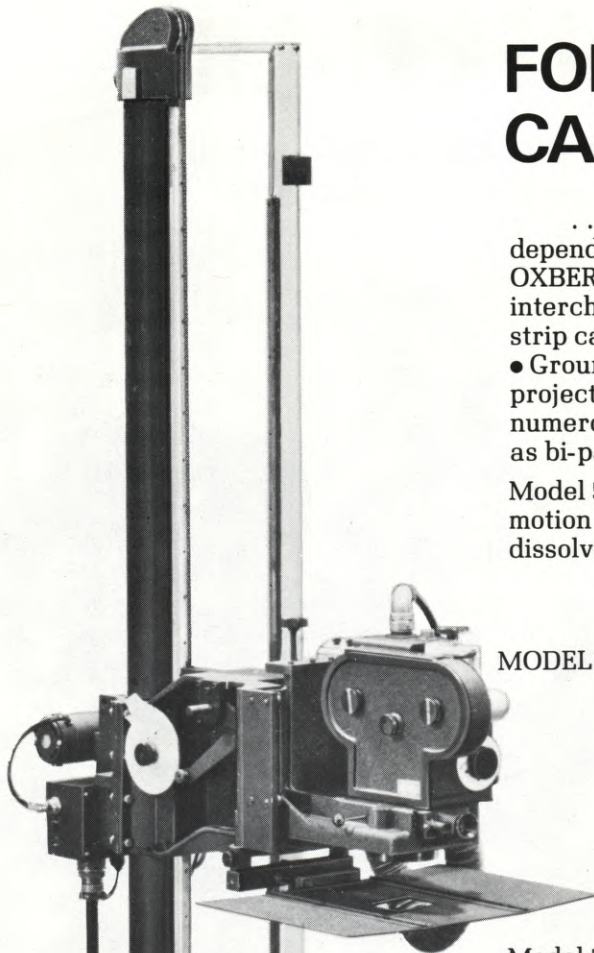
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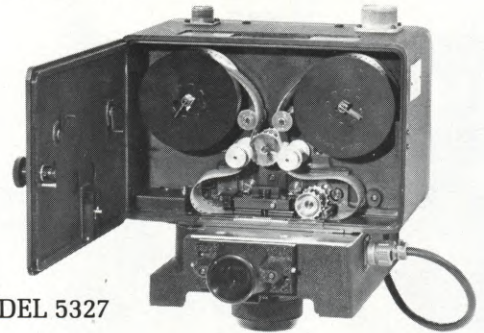
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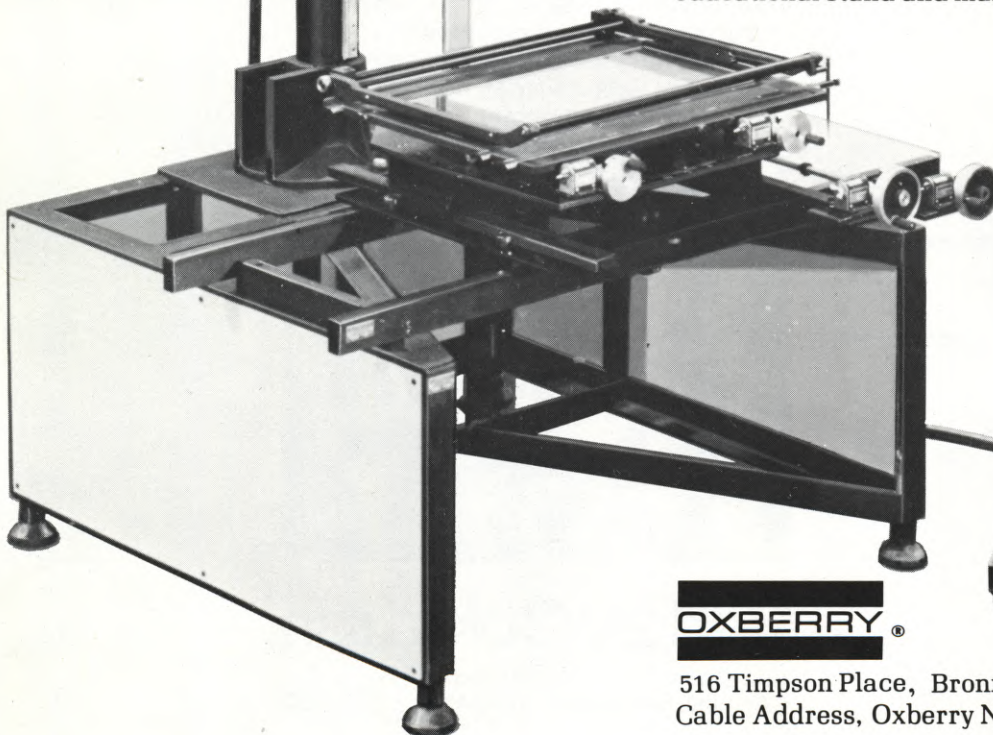
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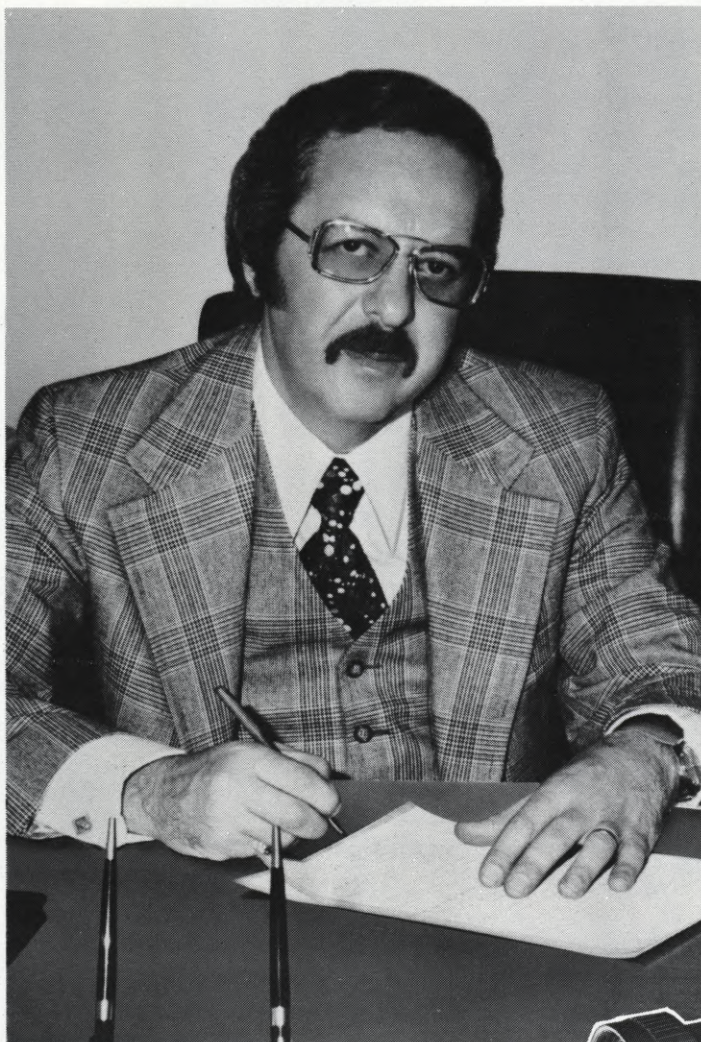
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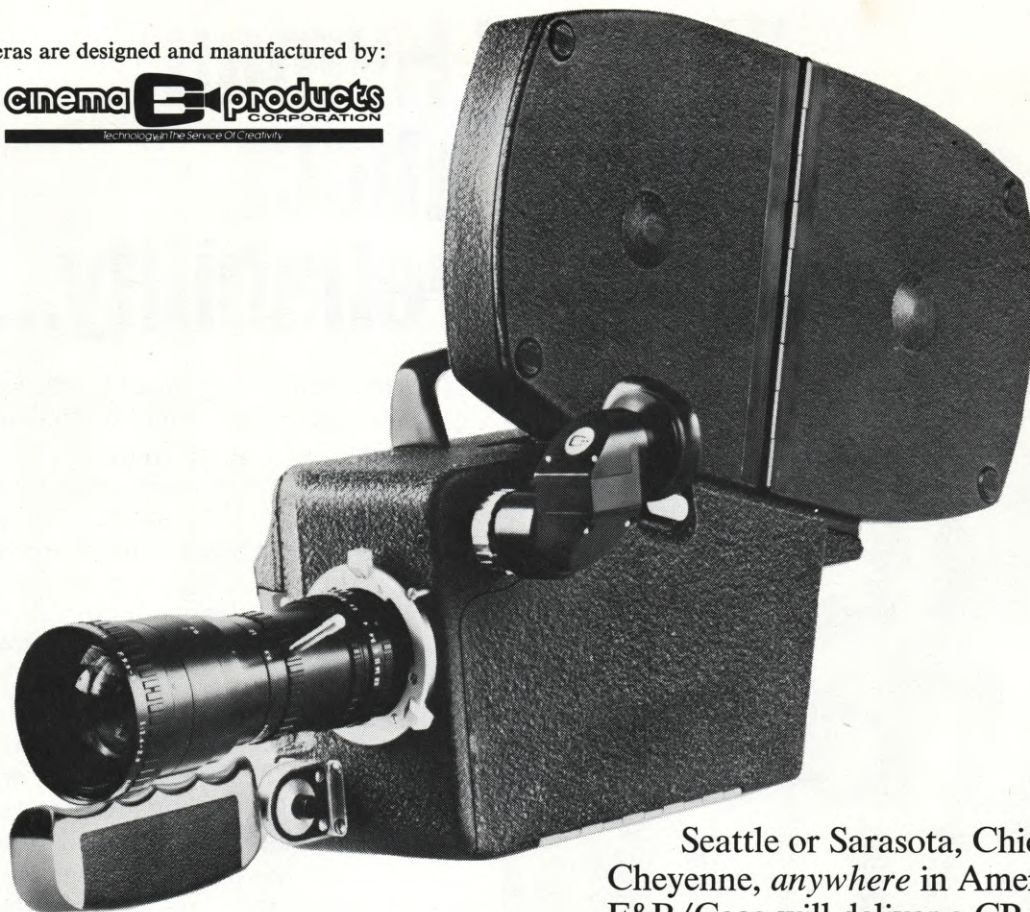


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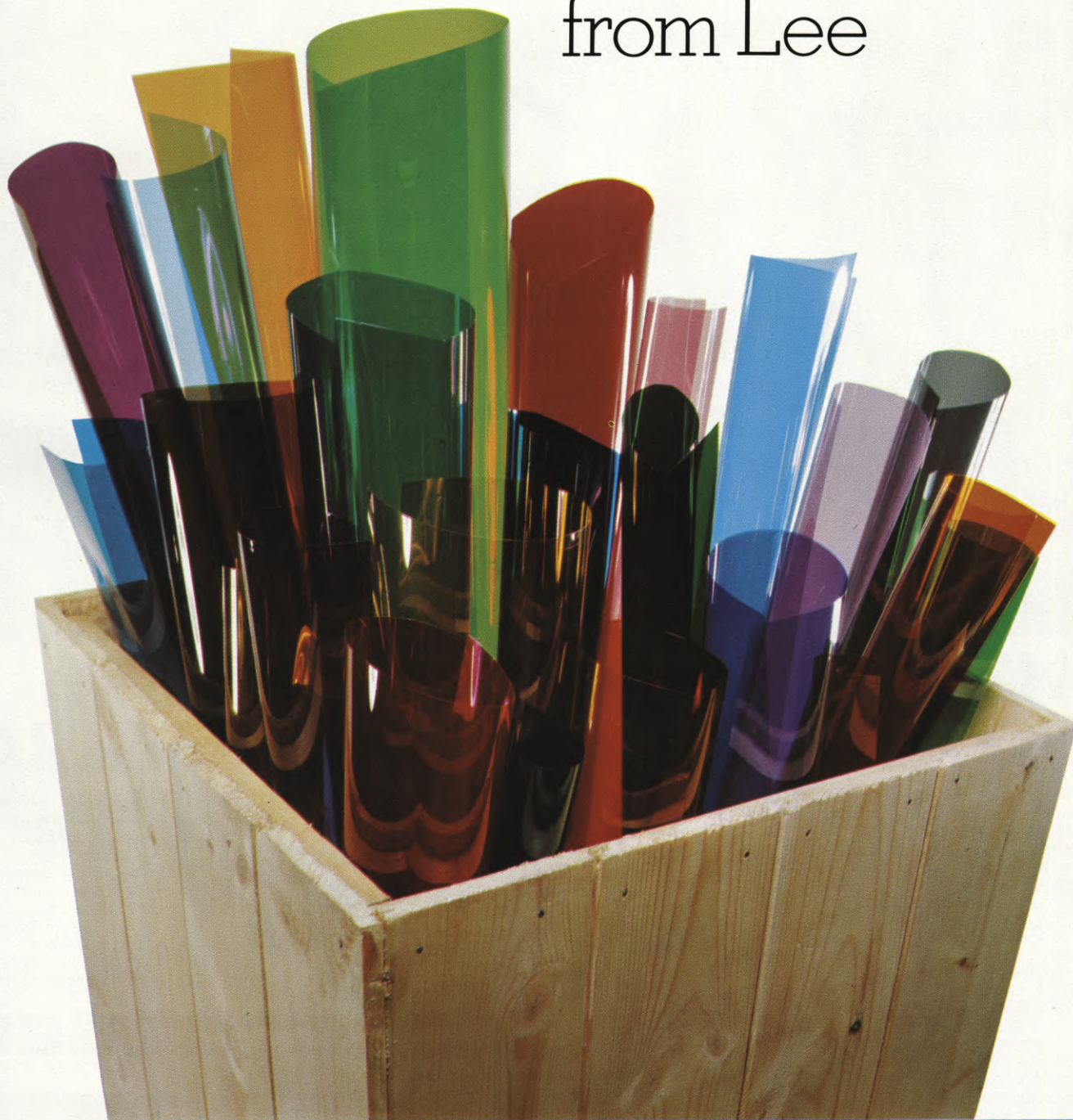
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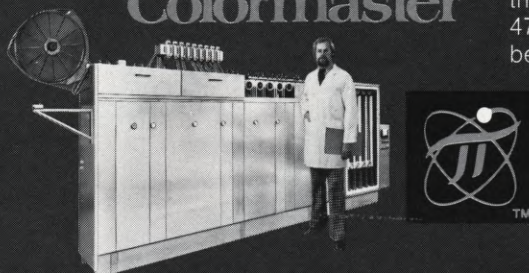
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behind the scenes of
**THE DAY
OF THE
LOCUST**

Nathanael West's apocalyptic vision of Hollywood is brought to the screen with stunning artistry

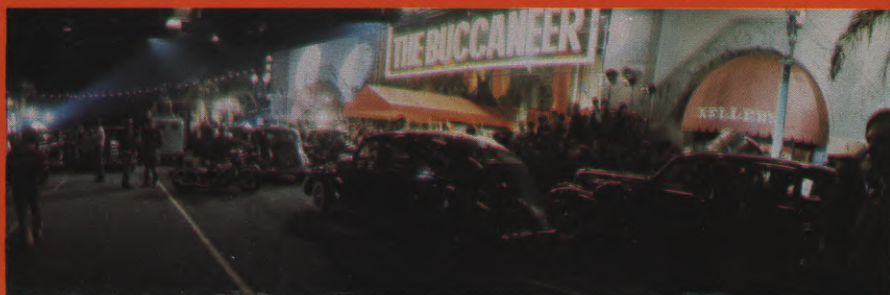


By **KENN RAND**

Jerome Hellman's production of John Schlesinger's film "THE DAY OF THE LOCUST" was filmed entirely in Hollywood, partly on location, but mostly on the sound stages at Paramount Studios.

The production reunites Schlesinger, producer Hellman and their scenarist, Waldo Salt, in their first collaborative effort since "MID-NIGHT COWBOY" which won Academy Awards for all three gentlemen in 1969.

A film of "LOCUST" has been in various stages of germination since the early 1950's. A number of directors, producers and writers had fixed on the novel over the years and had attempted to find financing for a film





version. But it remained for Schlesinger and Hellman to bring it to fruition — not, however, without considerable frustration and any number of false starts. At one point a little more than two years ago, Schlesinger was set to direct the film for another studio. Weeks before pre-production was to have begun in earnest, the studio inexplicably

Continued Overleaf



Layout Design by DAN PERRI



backed down. Hellman then brought the project to Paramount who were receptive, offered development money, but remained, at the outset at least, steadfastly noncommittal about actual production. By this time, Salt, who had already reworked some three separate drafts of the script (he remained with the production throughout shooting, changing and revising as the film evolved), had come up with yet another, more definitive version. Armed with this script, Schlesinger and Hellman flew to New York where Schlesinger proceeded to act out the final sequence of the film in the Paramount offices. Impressed by Schlesinger's dramatic skill (Schlesinger had, of course, once been on the stage) and by the commercial possibilities of a subject they'd been warned was "a downer," Paramount at last gave them the green light.

Jerry Hellman says now that he was always confident that the film would be made. Even without a firm studio deal, he prevailed upon Schlesinger and Salt to proceed as if the film were about to go into production. First from their rooms in the Bel-Air Hotel and later from temporary quarters at Paramount's offices on Canon Drive in Beverly Hills, they began to line up a production team and complete the casting they had begun almost a year before in London and New York.

The characters in "THE DAY OF THE LOCUST" are among the most fascinating in all American literature. "They are," Dashiell Hammett said upon finishing the book, "the goddamdest set of people I've ever read about." Of the three principal roles, one, Faye Greener, proved the most difficult to cast.

Critic Leslie Fiedler has called West's Faye "the most memorable and terrible woman in the American novel of the 1930's" and she is indeed an

unforgettable creation. A shimmering, ice-cold blonde, Faye's personality is a human pastiche of all the attitudes and gestures she's copied from her favorite movie stars. Though in reality no more than a chronically unemployed dress extra, and a part-time prostitute to boot, Faye is pursued by practically everyone in the novel, though never really possessed by anyone. She is a tease and a tormentor, a seducer, yet oddly virginal — a touching victim of her own incorrigible longings for glamour and romance. At first Schlesinger and Hellman auditioned any number of conventionally-beautiful blonde actresses and models, many of them unknown. But it was following an hilarious audition by a well-known TV comedienne that they discovered another dimension to Faye, a clue to how she could be played on screen.

"We say that Faye could be funky and funny as well as sexy. She *had* to be, as a matter of fact," Schlesinger recalls.

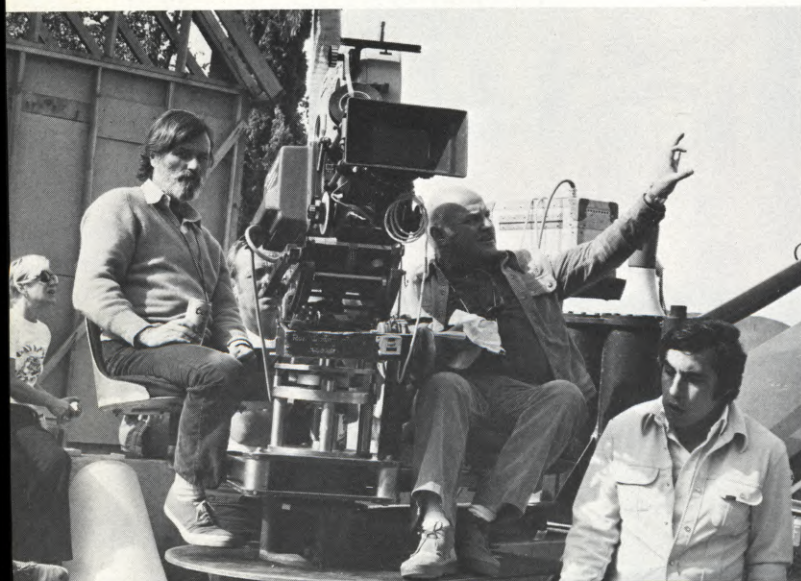
Though they didn't ultimately sign the comedienne, they began to look further afield. Better-known actresses came by to audition including Raquel Welch, who, according to Schlesinger, arrived in full '30s costume and proceeded to give a "persuasive and most intelligent reading." "Alas," Schlesinger now says, "who in the world would ever believe Raquel as a failed dress extra?"

Karen Black had originally been rejected out of hand as "not right" some months before. Now, again, she was called in. "She arrived in a blonde wig and dazzled both John and myself," Hellman recalls. "She read straight from the script and did a series of improvisations with one of the actors who had already been cast and she was extraordinary. There was no one we knew who had her edge or could come close to what we knew she could bring to our film."

For the role of Homer Simpson, the bookkeeper from the Midwest to whom nothing has ever happened, whose dreams are suppressed even in his sleep and who has been reduced to an almost vegetable-like condition until he meets Faye, Schlesinger chose Donald Sutherland who had first contacted the director in England when he read that the novel was to be filmed. Sutherland gained nearly 40 pounds for the role and is, on screen, close to an exact physical model of the character Nathanael West describes — "one of Picasso's great sterile athletes" right down to his "fever eyes" and "unruly giant's hands."

Schlesinger and Hellman wanted a new face — "a new experience" — for Tod Hackett, the young studio artist from the East who finds himself attracted to the losers and grotesques who populate West's Hollywood and who becomes fatally attracted to Faye. As he did when he chose Alan Bates for "A KIND OF LOVING", Tom Courtenay and Julie Christie for "BILLY LIAR" and Jon Voight for "MIDNIGHT COWBOY", Schlesinger found his Tod from among the ranks of talented but not yet established stage actors. Jerome Hellman had brought William Atherton to his attention, a young actor who had been working professionally for only four years but who had managed to impress any number of people in the profession in such plays as John Guare's "THE HOUSE OF BLUE LEAVES" and in the title role of David Rabe's "THE BASIC TRAINING OF PAVLO HUMMEL". Following his first audition, Hellman and Schlesinger sent for a print of "THE SUGARLAND EXPRESS," a film Atherton had just completed in which he played Goldie Hawn's convict husband. "I saw a rawness, a tightness, a challenge in Bill's performance," Schlesinger says. "Tod was among the most difficult roles we had to cast. He's an observer, a 25-

(LEFT) Conrad Hall and John Schlesinger flank the camera, as they prepare to ride the boom arm for a rehearsal. (RIGHT) Camera is positioned to shoot an "on the set" sequence, during which dress extras parade their temporary finery in a spectacular set. The film presents a fascinating behind-the-scenes view of Hollywood during its "dream factory" phase of the 1930's. "LOCUST" is the story of the hangers-on to the fringe of tawdry glamour that surrounded the film industry of that period.



year-old boy with a 40-year-old head. An actor had to make him live."

West's gallery of supporting characters are an extraordinary, rich lot, ranging from a broken-down old vaudeville clown whose "every gesture seems to come out of a stale and unfunny vaudeville routine" to a drug-store cowboy from Arizona who goes through his life offering an unconvincing impersonation of Gary Cooper, to a feisty and mean-spirited dwarf who talks tough and thinks big. In all there are some 40 speaking parts in the film, not to mention thousands of extras who appear in various sequences. Casting continued on the Paramount lot right through the end of production. Among the principals are Burgess Meredith who plays Harry Greener, Faye's father, the ex-vaudevillian turned door-to-door salesman; Geraldine Page as Big Sister, a new character invented by Salt, a role with more than a passing resemblance to evangelist Aimee Semple MacPherson; Natalie Schafer of TV's "Gilligan's Island" as Audrey Jennings, a character West based on a well-known Hollywood madam of the '30s; Broadway's Richard A. Dysart as the cynical Claude Estee; Lelia Goldoni as Mary Dove; Bo Hopkins, who plays Earle Shoop, the quintessential drug-store cowboy; Pepe Serna as Miguel, a violent and passionate Mexican love of Faye's; Gloria Le Roy as Mrs. Loomis, a grotesquely ambitious stage mother; Jackie Haley as her monstrous platinum-curl son, Adore; and Billy Barty, of the Busby Berkeley spectacles of the early '30s as Abe, the dwarf, racing enthusiast always on the lookout for a fight.

In smaller roles one sees the venerable Madge Kennedy as Mrs. Johnson; Paul Stewart as the well-pomaded studio head; Jane Hoffman as Mrs. Odlesh; Paul Jabara as the nightclub entertainer and, in a small bit at the end, young Dick Powell, Jr.

impersonating his famous dad at the premiere at Grauman's.

By early June of 1974 Paramount had given the go-ahead sign and Schlesinger and Hellman began contracting their key production people, many of whom had shuffled assignments for the past year in hopes that the film would ultimately go before the cameras. Principal among them were Director of Photography Conrad Hall, ASC, four-time nominee for the Academy Award and winner for "BUTCH CASSIDY AND THE SUNDANCE KID", costumer Ann Roth, who had worked with Schlesinger and Hellman on "MIDNIGHT COWBOY" and for Hellman on his two previous productions, "THE WORLD OF HENRY ORIENT" and "A FINE MADNESS", and production designer Richard MacDonald.

MacDonald was the first to go on salary in mid-June. A tall, rangy, white-haired Scotsman in his early 50's, MacDonald, a painter, has been involved in film production only since the early 1960's when Joseph Losey persuaded him to design a film for him. Since that time MacDonald has worked on all of Losey's films save three and has designed a number of other productions including Schlesinger's "FAR FROM THE MADDING CROWD".

MacDonald arrived in Los Angeles with "a virgin eye" (he'd never been West of Pennsylvania) and was astounded by the tangle of the L.A. cityscape as West must have been when he first arrived there in the middle '30s. West's description of the California architecture is an integral part of his novel and MacDonald now says that his fresh perspective was his major resource in recreating West's vision. To some, he reminded them of Tod Hackett himself, a bemused, ironical spectator-observer in an alien world.

MacDonald's and art director John Lloyd's research of Hollywood circa

1938-39 was awesome. They began by digging up a Los Angeles street map of the period, then to combing the streets themselves. Schlesinger had hopes that much of the film might be made on actual locations. After nearly a month of research, MacDonald informed Hellman and Schlesinger that this would be close to impossible. Though much of what West describes still exists in Hollywood, including the real-life model of the San Bernardino Arms — the crumbling bungalow court where much of the action takes place, now a massage parlor — TV aerials, modern office blocks and neighboring mid-'30s architecture intruded on the sight lines, rendering period authenticity a hopeless task.

It was decided to build "The San Berdoo" from scratch on the Paramount lot over Tank B, where some 20 years ago, Cecil B. DeMille parted the Red Sea in "THE TEN COMMANDMENTS". The result was a full square Hollywood block of "magnificently crumbling" lower middle-class gentility, "far more evocative," Hellman says, "than anything we might have found moldering on some Hollywood back street."

Interiors of the rooms at the Berdoo were constructed on the lot, as was the "Hollywood Gothic" interior of Homer's fairy tale cottage, the exterior of which was found after a six-week search in Pasadena.

Other scenes filmed at the studio include the Cinderella Bar, MacDonald's art deco pastiche of Hollywood high life in the '30s, replete with silver palm trees, etched mirrors and plastic glass slipper candle holders on each table, and the reconstructed sound stage for the film-within-a-film sequence, wherein a massive set caves in during the filming of an historical spectacle about Waterloo. MacDonald and art director John Lloyd supervised

Continued on Page 692

(LEFT) Artificial fog is generated to add to the atmosphere of the Battle of Waterloo sequence. **(RIGHT)** The giant camera crane swings high, as soldiers of opposing armies prepare to "kill" each other for the sake of their art. At first, Schlesinger had hopes that much of the film might be made on actual locations. This proved impossible because, though most of what the novel describes still exists in Hollywood, TV aerials, modern office blocks and neighboring architecture made authenticity hopeless.



PHOTOGRAPHING "THE DAY OF THE LOCUST"

A golden-hazed "dream fantasy" style of cinematography works brilliantly, in counterpoint to harsh reality, for evoking the never-never-land aura of Hollywood as it existed in the 1930's

By CONRAD HALL, ASC

My eventual assignment as cinematographer on "THE DAY OF THE LOCUST" came about in a most suspenseful manner. I'd read the novel and when I heard that the film was going to be made I was most interested in working on it. So when the producer, Jerome Hellman, called me into a meeting one day, I thought, "Oh boy, I'm going to have a shot at this!"

We met, and he told me that he was interviewing cameramen prior to the

arrival of John Schlesinger from England to make the final choice with him. I realized from that statement that I was not sort of *the* cameraman, but that they were talking to a lot of people. We talked and I told him what thoughts I had about the story, assured him of my enthusiasm for the project, and left.

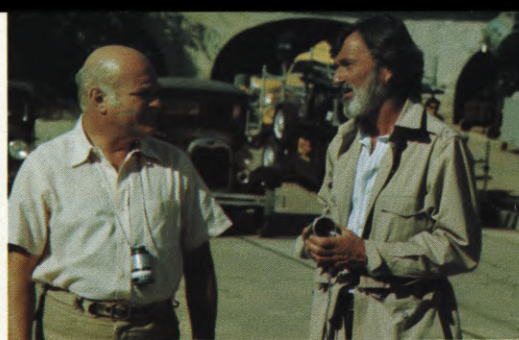
Later, John and I had a fifteen or twenty-minute meeting, during which we discussed the films we'd worked on and had a chance to get to know each

other and size one another up. That's the last I saw of these gentlemen until I was actually assigned to the picture.

In the meantime, my agent called and told me that they'd chosen another cameraman, Gordon Willis. Naturally, I was disappointed at not getting the film, but I decided to go to Tahiti, where I have a home and where I like to go from time to time. Before I left, I told my agent, "Keep on top of it, in case things don't work out between them, because

Two of the gigantic sets constructed inside Paramount sound stages for the filming of "THE DAY OF THE LOCUST". (BOTTOM) A vast battlefield set for the film-within-a-film shooting of Battle of Waterloo sequence. (TOP) An extraordinary set, built on three adjoining sound stages, with their 25-foot-high doors open, was used for shooting the climactic riot sequence, which takes place during a premiere. This photograph, taken from the rear wall of the farthest stage, shows a parking lot in the foreground, with a side street opening onto Hollywood Boulevard. In the far background, more than 150 yards away, can be seen a replica of the famed forecourt of Grauman's Chinese Theatre.





(LEFT) Two 70-foot-high letters of what used to be a HOLLYWOODLAND sign on a hillside were built for tourist sequence. The total sign was established by showing in closeup a postcard of it. (CENTER) Director John Schlesinger and Director of Photography Conrad Hall, ASC, on the set of "LOCUST". (RIGHT) Karen Black, playing a mostly-unemployed extra, has her moment of glory as head harem girl in a movie sequence. (BELOW) The stunning battlefield set designed by Richard MacDonald, was surrounded by a cyclorama of glowering clouds. Lights had to be kept low enough to show it was a movie set in long shot.



I'd really like to do that picture."

I got a call from him in Tahiti, telling me that things weren't working out between them. So I came on back and threw my hat into the ring again. This time it was picked up and I was most happy to be on the picture, because it was a film I'd always wanted to do and John Schlesinger was a film-maker I'd wanted to work with. It was an ideal situation.

We started work on the project and I

found that John is someone who is very much in control of his films. He may appear insecure in that he seems not to have any definite idea for quite a while, but he knows just exactly what he is doing. In talking together, we came up with a plan relating to the visual style.

I'd had some thoughts of my own about that, based on other pictures I'd done, and I felt the experience might be helpful in the handling of this film. Most applicable was what I'd learned in

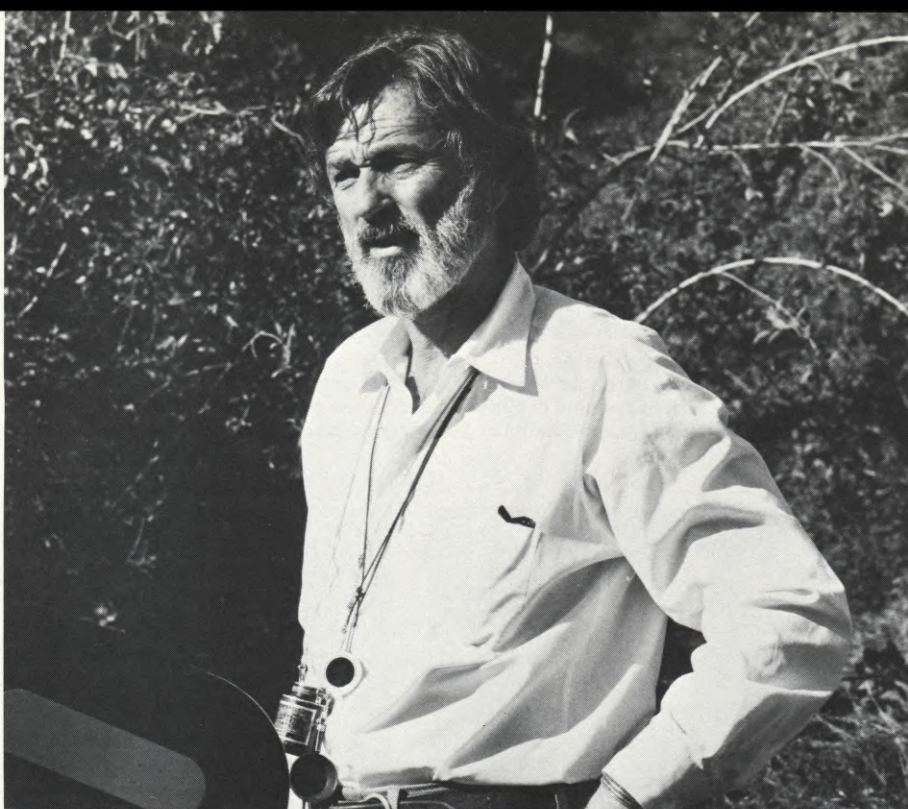
photographing "FAT CITY", which was a film about a kind of "downer" situation. It was about people's lives disappearing down the drain before they had a chance to put the plug in and send themselves off in a different direction.

"THE DAY OF THE LOCUST" is about the losers of Hollywood — the people who, like moths, are throwing themselves against the flame of fame and fortune and beauty and romance



(ABOVE LEFT) William Atherton, playing a naive young artist in Hollywood to seek his fortune, stands before sketches he has made of an imagined Hollywood holocaust. (CENTER) A very dapper John Schlesinger looks through the viewfinder. (RIGHT) Conrad Hall sits next to the camera, prior to the rehearsal of a boom shot. (BELOW LEFT) Three protagonists sit around a campfire at the beginning of the most sensual sequence in the film. (CENTER) Big Sister, an evangelist of the Aimee Semple MacPherson school of showmanship, does her thing. (RIGHT) Ceilings were built on all studio interior sets and the customary scaffolding for lighting was purposely not built.





Academy Award-winning cinematographer Conrad Hall, ASC, used nets, silks and ethereal lighting to create a "golden haze" of fantasy that expresses the wishful thinking of the losers who populate Paramount's "THE DAY OF THE LOCUST". The visual style plays in stunning counterpoint to the hard-edged grittiness of their lives and suggests how they thought of themselves, rather than how they actually were. It is a tour de force of visual style that accurately captures the never-never-land aura of Hollywood in the late 1930's.

— that sort of thing. Most of them get burned. And so, inevitably, it was a hard kind of story that I saw. But I told myself, "I sure don't want to happen what happened on 'FAT CITY'." John Huston made an excellent film, but I think that making it so hard-edged and so "real" contributed to the fact that it ended up as something that people wanted to avert their eyes from. They

couldn't stand its reality; they couldn't stand what it had to say about life. It was a case of: "Who wants to know about your life going down the drain, when most people's are anyway?"

That style defeated "FAT CITY". It discouraged people from going to see it and appreciating it. I'm not saying that the hard, ultra-realistic photography was the only defeating element;

A key sequence, in which Karen Black teases the three men who hunger for her, did not work as a literal interpretation of the novel's action. Instead, Schlesinger abstracted it and Hall used big closeups of faces and eyes and mouths eating and drinking. Shooting at 32 frames per second to slow everything to a languid pace, he turned the mundane characters into "glamor people", communicating through looks and becoming sensually involved. The sequence plays with powerful impact.



there were other defeating factors that kept people out of the theatres. Nevertheless, I thought to myself: "This should not happen in 'LOCUST', even though it's a story about losers."

Really, what the characters are after in that story, and what they're living, is a fantasy of the way they hoped things would be — the fantasy of success, the fantasy of "making it", the fantasy of romance, the fantasy of everything. I felt that this "fantasy" element should be the theme of the visual style — that it should not be hard-edged; it should not be real and gritty, so as to be defeating from an audience standpoint. I felt it would be better if we adopted *what they were after* as a style, rather than what they were actually about. In other words, when they went to work each morning, fleeing from their miserable lives in the courtyards of Hollywood to the sound stages, where there were magnificent chandeliers and sets and beautiful costumes and grandiose language, their fantasies were fulfilled. I felt that the film's visual style should reflect their starry-eyed view of the way things ought to be.

John was wholeheartedly in agreement with this idea, so I made tests for a number of weeks, formalizing how to approach such a style. John was involved during this entire time, making suggestions and working back and forth with me on it. What evolved was a style that suggests how they *thought* of themselves, rather than how they *actually were*. They move in a sort of golden haze of fantasy, but I don't feel that this detracts from the grittiness of reality. That's in the acting. That's Schlesinger and West. They put the reality and the grittiness and all of that into it. To couch the visual style against that is not out of line at all, in my opinion. Hopefully, it will help bring people into the theatres to see the film.

Arriving at the actual mechanics to achieve the visual style we'd agreed upon took considerable thought and, as I've said, testing. I thought it would be appropriate to choose one of the methods available for achieving a soft effect, as opposed to the hard-edged, gritty thing. We wanted to produce as much glamor as possible in a non-glamorous situation with non-glamorous people who were doing non-glamorous things — people who were walking around in bathrobes, while all over the place there were pictures of movie stars.

I had worked with a lot of the old-time cameramen who, in the old days, used to use a lot of nets and silks and things like that. I thought to myself that this would be an interesting way to deal with the desired softening effect, of making people look terrific by couch-



(LEFT) For the film-within-a-film, players in street clothes rehearse the Battle of Waterloo on a huge sound stage. During the filming, they will storm the artificial hill in the background and, not being properly braced, it will give way under them, injuring many. (RIGHT) Now in costume, the Waterloo Battle participants hold their positions, while the camera, on a boom arm, soars above them.

ing reality in glowing terms. So I decided to use nets and silks.

However, since the days when I worked with veteran cameramen like Ernest Haller and Hal Mohr and Ted McCord, who used nets and silks, something called the zoom lens had been invented — and this posed a whole different set of problems.

The zoom lens is a valuable tool in film-making, but when you have a wide angle lens at one end of the zoom and a telephoto lens at the other end, and the director wants you to go from one to the other, it takes a lot of experimentation to discover how best to achieve that travel from a wide shot to a telephoto shot in a manner that will be pleasing at all focal lengths — without one end becoming too mushy soft and the other end becoming too hard as you operate the zoom.

It took much experimentation and many visits to silk shops in search of gauzes and silks and any number of materials through which to point the lens. I found lots of these and shot many tests at all focal lengths, with the zoom as well as with hard lenses, and I learned how to deal with what was in front of the camera in relationship to what focal length I was at.

I found out also, in testing, that lighting has a lot to do with the effects you get when using this sort of diffusion. If you're using a rim light, for example, as soon as you get in close with a silk over the lens, that rim becomes a double image, rather than a single image. It's because the thickness of the material causes a separation with the light refraction and this is recorded as a double image. You then have to very quickly analyze whether that double image is acceptable or not. If not, you

Continued on Page 722

(ABOUT THE AUTHOR: CONRAD HALL, the son of James Norman Hall, co-author of "Mutiny on the Bounty", grew up in Tahiti and California. He entered the University of Southern California as a journalism major but after a year switched to cinema, because he felt it was "something new . . . something he should be in on the ground floor of." He studied there under Slavko Vorkapich, the Yugoslavian expressionist cinematographer-editor-director whose work in photo-montage is considered landmark in the development of the American cinema. Hall traces much of what he learned and how he has developed to Vorkapich's influence.

While in school, Hall and his two classmates made a film called "SEA THEME", which won First Prize in Cinematography at the USC International Amateur Filmmaker contest. Upon graduation, they re-cut the film, scored it and sold it to television under the auspices of their newly-formed company, Cannon Films. Other companies soon hired the group for such projects as commercials, documentaries and industrial films.

In 1954, the group decided to make a feature based on the short story "My Brother Down There". The three wrote the script, raised the money and when it came time to actual shooting, tossed their names in a hat to determine who would do what on the production. Hall drew "cameraman" and has, since that time, worked almost exclusively in that capacity.

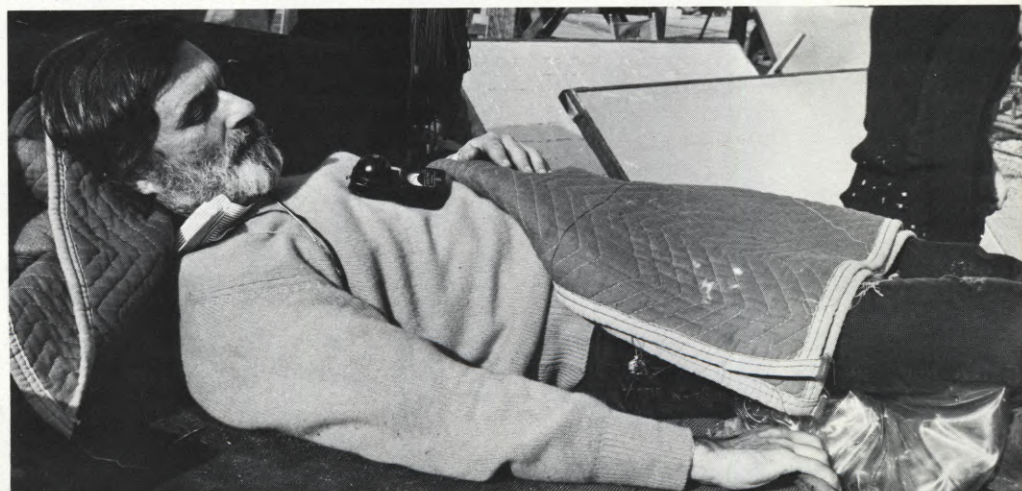
Among the projects which followed in the next few years were a number of documentaries for Disney on which Hall worked with Jack Horner and Jack Couffer, including "ISLAND OF THE SEA". He worked often on TV, as operator and cameraman on a number of series, and also began operating for other cameramen on feature films including Ted McCord, ASC, on Leslie Stevens' "Private Property". Hall was later in 1966 to shoot a film for Stevens on his own — one called "Incubus".

Hall's first chance to photograph a major feature on his own was at Universal for "WILD SEED". His second, "MORITURI", earned Hall the first of his four Academy Award nominations. Other films which followed include three for Richard Brooks, "THE PROFESSIONALS", "IN COLD BLOOD" (for both of which he was Oscar-nominated), "THE HAPPY ENDING", Jack Smight's "HARPER", "COOL HAND LUKE", "HELL IN THE PACIFIC", "TELL THEM WILLIE BOY IS HERE" and "BUTCH CASSIDY AND THE SUNDANCE KID", for which Hall won his first Academy Award.

Since then he has photographed "FAT CITY" and "ELECTRA GLIDE IN BLUE", directed by James William Guercio.

Since completing "THE DAY OF THE LOCUST", Hall has photographed "SMILE".)

All tuckered out, Director of Photography Hall catches a few winks during down time on the set in the course of the grueling 24-week shooting schedule for "LOCUST". In 1951, while a Cinema student at USC, Hall, with two other students (M.R. Weinstein and Jack Couffer, ASC), filmed a short subject, "SEA THEME", which won an award in the Annual Amateur Competition for Trophy Awards, sponsored by the American Society of Cinematographers.





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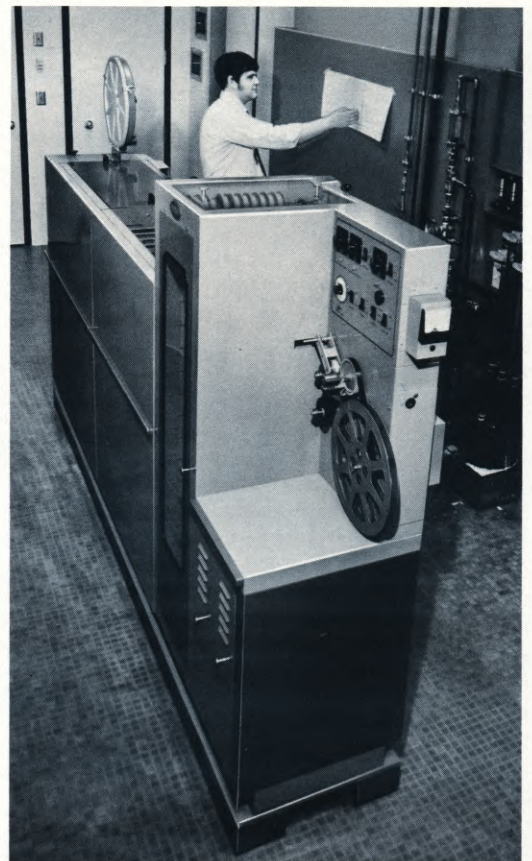
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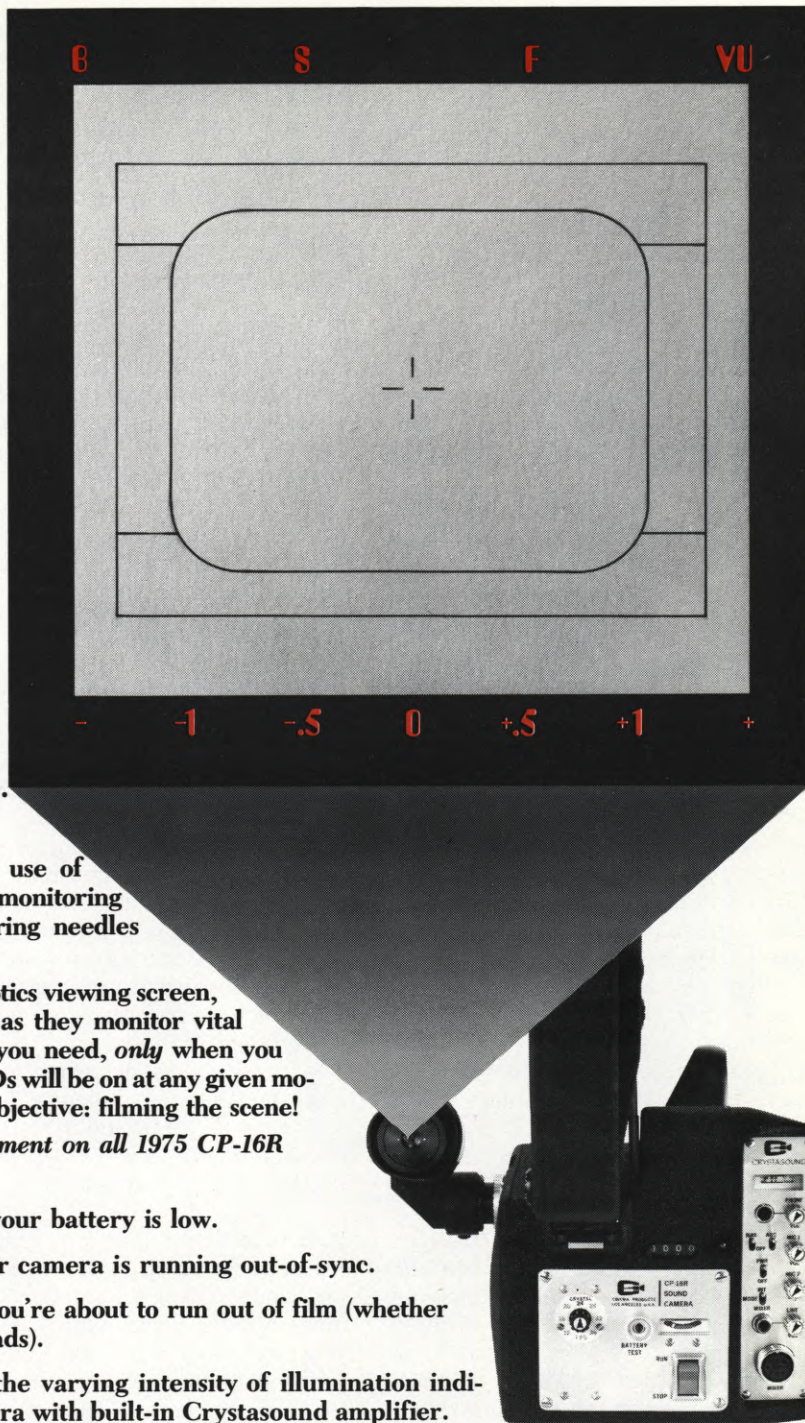
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JOHN SCHLESINGER TALKS ABOUT "LOCUST"

A highly talented, deeply sensitive and very charming director discusses what is perhaps the most controversial film of his career — as well as the curious love-hate attitudes he feels toward his new second home, Hollywood

By CHARLES LORING

As we go to press, Paramount's "THE DAY OF THE LOCUST" has just been impressively previewed for the West Coast Press at the Westwood Village Theatre, not too far from the town that the film is all about — fabulous, glamorous, amorous Hollywood.

Few critics have had their say on the film as yet, nor has the word-of-mouth begun to trickle back from the selected key situations where the picture has just opened. And yet, already it is obvious that "LOCUST" will be one of the most controversial films of the year. Within the last few days, its director, John Schlesinger, was quoted in the *Los Angeles Times* as saying: "It's already getting more reaction than anything I've ever done. No one is ambivalent — everyone is either strongly for or against it."

This isn't the first time Schlesinger's work has sparked controversy. Yet, when you meet him, he strikes you as anything but a controversial figure. He's a very pleasant, witty English gentleman — seemingly free of the quirks and tics to which controversial figures are usually heir. But let's take a closer look at the man.

"THE DAY OF THE LOCUST" is John Schlesinger's seventh feature film. His first, made in his native England in 1962, was "A KIND OF LOVING", followed by "BILLY LIAR" in 1963, the film which introduced Julie Christie in her first important film role. In 1965 Schlesinger guided Miss Christie to an Academy Award in "DARLING" and two years later he directed a multi-million-dollar adaptation of Thomas Hardy's "FAR FROM THE MADDING CROWD" starring Terence Stamp, Peter Finch, Alan Bates and again Miss Christie in the central female role.

Schlesinger's next production, his first to be made in the U.S., was "MID-NIGHT COWBOY" which became one of the most acclaimed and successful films in the history of motion pictures. It won Academy Awards for Best Screenplay by Waldo Salt, for Best Picture of 1969 awarded to producer Jerome Hellman and for Mr. Schlesinger himself as Best Director.

The following year, Mr. Schlesinger returned to England where he filmed "SUNDAY BLOODY SUNDAY" based on his own idea with an original screenplay by critic Penelope Gilliatt. Before

beginning work on "THE DAY OF THE LOCUST", he directed a segment for David Wolper's "VISIONS OF EIGHT", a study by eight international directors of events at the Munich Olympics.

Schlesinger grew up in comfortable circumstances in Hampstead, the eldest of five children born to a noted pediatrician and his wife. He was from an early age an enthusiastic and adept amateur magician. "The mixture of spoof, technical dexterity and audience control of the illusionist closely parallels the craft of the filmmaker," Schlesinger has explained. "My interest in magic may well have been the first glimmering of my ambition to translate images and illusions of life onto the screen."

He attended Uppingham, a public school, and was as he puts it "good at practically nothing, certainly not the things that mattered in public school life — like games." He was fascinated by the theatre and hungrily awaited the twice-yearly visits to the London West End which his parents allowed him and his brothers and sisters. "The theatre was a very special occasion for me and I relished each experience. For days afterward I'd think about the sets and the costumes — even the color of the curtain. Everything about it excited me."

In 1948 Schlesinger was drafted into the National Service and served in England and the Far East with the Royal Engineers. It was while in the Army that he first became seriously involved in presenting theatrical entertainments. He and Kenneth Williams, a fellow soldier later to become a popular stage and TV comic in England, produced and acted in magic and variety shows.

Upon completion of his military service, Mr. Schlesinger entered Oxford where he joined the University Dramatic Society. He began to dabble in photography and also bought a motion picture camera.

"I had been playing with film since I was 11 years old when I had my first 9.5mm camera. I made films about a day in the life of a schoolroom, that sort of thing. In the Army before I went out to the Far East we filmed a melodrama called 'HORROR' about two escaped convicts. I was one of them."

At Oxford, Schlesinger and some friends made two 16mm films. One was about a hanging in the 17th Century

and the other, a fantasy fairy tale, was blown up from 16mm to 35mm and shown at several local cinemas in the provinces of England. "It was a really very bad movie," Schlesinger recalls. "I remember when I first saw it on a big screen someone who was sitting near me who had no idea whom he was next to said, 'Well, I suppose *someone* must have had some fun doing *that!*'"

At the same time, Schlesinger began to act in university productions. He appeared in a production of Thornton Wilder's "The Happy Journey From Camden to Trenton" and shortly after decided to take a crack at becoming a professional actor.

He acted with a number of repertory companies, on TV and in several productions in the West End. At the same time he kept on with photography, often doing studies of his fellow actors. He also continued to make 16mm films. One, "SUNDAY IN THE PARK", filmed in Hyde Park, was made while he was playing in a West End revival of "Mourning Becomes Electra". "I'd get the rushes delivered to the stage door and sit in my dressing room and look at them on a portable Moviola. I only had a small bit in the play. I was on at nine and off at ten past nine so until curtain calls I could work on the film."

When it became apparent that Schlesinger the actor was not about to set the London theatre world on fire, he began sorting about for production work in films. Michael Balcon, head of Ealing Studios, turned down his application to work as an assistant there, but his short films sufficiently impressed the powers at the BBC to get him work on several of their documentary series, including the much-acclaimed *Monitor* program, for which he directed several segments, including featurettes on the circus, the Cannes Film Festival, the Brighton Amusement Park and the hi-fi record craze. According to Gene Phillips, whose recent monograph on British film directors devotes a chapter to Schlesinger's work in these film essays, Schlesinger "sought to probe beneath the surface of the event that he was examining in order to get human dimension implicit in the situation."

The most celebrated of Schlesinger's TV films was "TERMINUS", shot in 1961 and awarded a prize at the

Venice Film Festival.

"I have always been interested in people and their relationship to one another," Schlesinger has explained. In "TERMINUS" he filmed all sorts of human situations at Waterloo Station from wedding parties to a lost little boy. Critical studies of Schlesinger's work never fail to point out that this 45-minute film about human beings in a hurry served as a prologue for much of his later work. "We wanted to juxtapose the different kinds of people to be found in a railway station. Under one roof we found all of the misery, happiness, loneliness, bewilderment and lost people to be found anywhere in the world."

Schlesinger's documentary work had attracted the attention of Italian producer Joseph Janni, who had recently settled in England. On the basis of "TERMINUS" Janni was able to convince a group of financial backers to allow Schlesinger to make his first feature film, "A KIND OF LOVING", based on a novel by Stan Barstow about the problems of a young working class man, fed up with his dull office job and trapped into a loveless marriage. "A KIND OF LOVING" dealt with themes which Schlesinger was to explore later in other films. The office worker, Vic, played by Alan Bates in his first film role of consequence, settles at the end of the film for "another try" with his wife in hopes that "a kind of loving" will grow between them. Schlesinger has said that his films are about the problems that people have in finding

security and happiness in life and the need for accepting what is second best when that is all one can possibly hope for.

The film was an enormous critical and financial success in England and Schlesinger and Janni had no difficulty in financing their next project, "BILLY LIAR", based on the novel by Keith Waterhouse and the play by Waterhouse and Willis Hall. By this time the revived socially conscious British cinema was in full swing. But Schlesinger was less attracted to social realism per se than in getting to the heart of the psychological reality of his characters. Nevertheless, "BILLY LIAR" has a gritty, realistic look and its social dimension is inherent in the story about a shy fantasy-ridden clerk in a north of England industrial town who seeks to make his workaday life bearable by retreating into a world of fantasy. He rejects his one opportunity to leave his family to begin anew in London offered him by a free-spirited young girl passing through his home town (Julie Christie) and returns instead into his old way of life. "Billy settles for living in a world of fantasy," Schlesinger has said. "He accepts this as a safety valve which protects him from facing life's problems and so he simply gives up trying to communicate with others altogether."

Schlesinger had met Julie Christie some years before when he was making a TV documentary about the Central London Acting School. After his enormous success with "BILLY LIAR",

he joined with novelist Frederic Raphael in creating a film especially for Julie Christie, "DARLING", produced again by Joseph Janni. Schlesinger recalls that he and Raphael began with the idea of the "ghastliness of the present day attitude of people who want something for nothing." Diana Scott, played by Christie, emerged as a composite of various people they both had known. Although the film was a big success in London and an enormous critical and financial success in America, winning Oscars for Christie and Raphael and a nomination (his first) for Schlesinger, he now feels that the film "holds up less well" than any of his others. "It dates badly," he says.

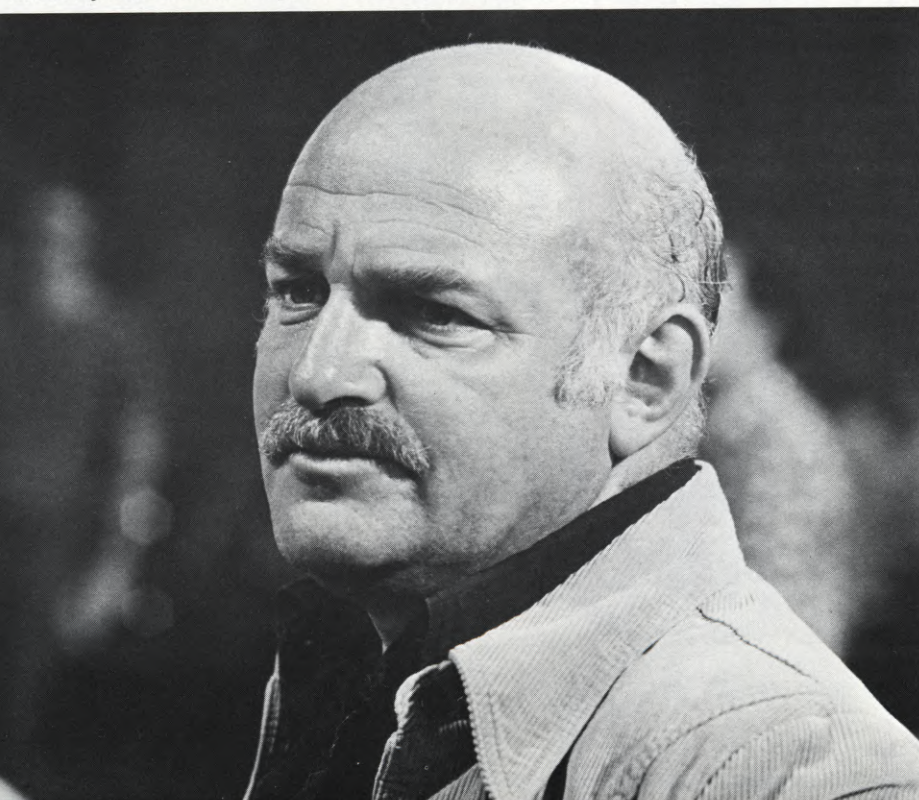
During the filming of "DARLING" Nicolas Roeg, the movie's cameraman and now a director in his own right, showed Schlesinger and Raphael a copy of Thomas Hardy's "Far From the Madding Crowd".

"I was attracted to Hardy," Schlesinger has explained, "because I was tired of presenting negative solutions to current problems. Hardy observed people's relationships very truly. He saw life as an endurance contest and felt that if Fate or Providence — call it what you will — knocks you down, you must pick yourself up and force yourself to go on. Here is a real affirmation of existence."

The film was shot in color (Schlesinger's first time) in Dorset, the county which Hardy called Wessex. From the beginning, with production designer Richard MacDonald (who worked on "THE DAY OF THE LOCUST") and with Nicolas Roeg, the cameraman, there was a very conscious effort to control the color, to film it in muted tones that would capture the "unique experience" of the English landscape Hardy so vividly describes. The film took nearly six months to shoot and was widely heralded by MGM as their "spectacle" for 1967. Though rapturously received in England, where it was a great popular success, the film opened to negative reviews in America and was, despite several Oscar nominations, a financial bust.

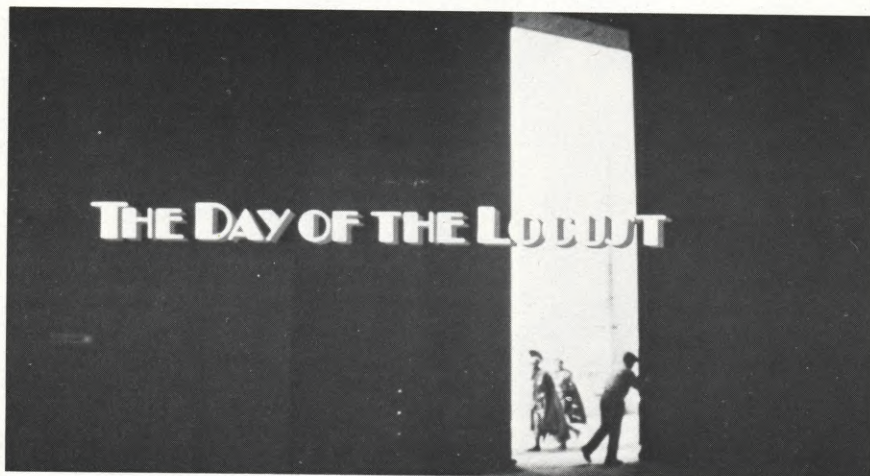
The failure of "MADDING CROWD" made it difficult for Schlesinger to finance his next film, "MIDNIGHT COWBOY", based on James Leo Herlihy's 1965 novel, which Schlesinger had read while on holiday in Marrakech. Since the subject was American, Schlesinger turned to Jerome Hellman, a young producer who had been courting him with projects since the days of "BILLY LIAR". Hellman and Schlesinger's problems in getting the film off the ground have been well-chronicled. It was turned

John Schlesinger, director of Paramount's "THE DAY OF THE LOCUST" began his career as a stage actor, became a documentary film-maker and got his chance to direct his first feature, "BILLY LIAR", in 1963. He has made a total of seven films since then. Some have been resounding commercial flops ("FAR FROM THE MADDING CROWD", "SUNDAY BLOODY SUNDAY"), while others have scored smashing successes ("DARLING", "MIDNIGHT COWBOY"). For the latter film he won an Academy "Oscar" for Best Direction. The Academy also honored the picture as Best Film of the year.



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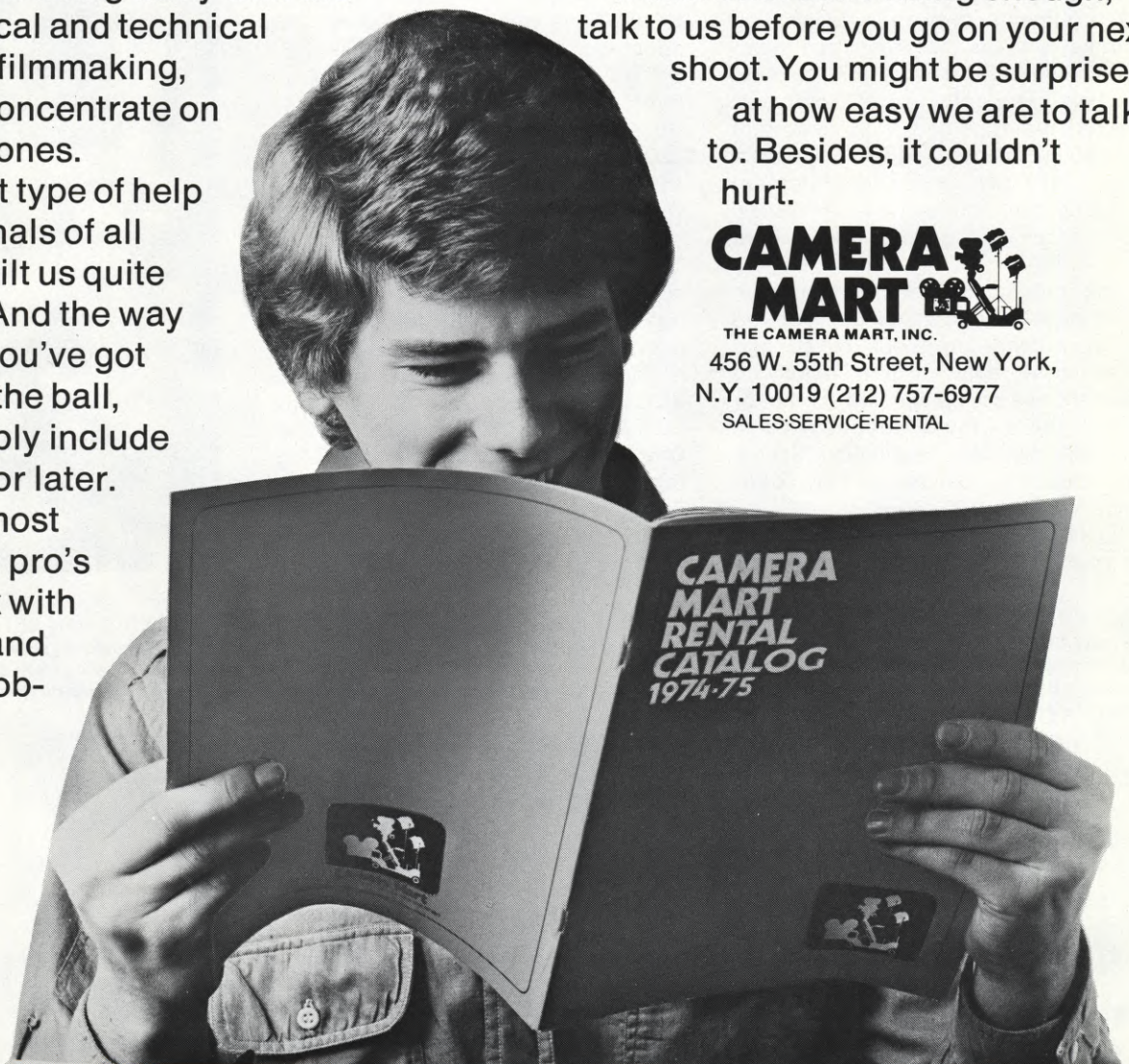
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BEHIND THE CAMERA ON "THE MAN IN THE GLASS BOOTH"

Exteriors on the streets of New York are combined with interiors on Hollywood sound stages to create the cinematic version of a hard-hitting stage drama

By DAVID HAMMOND

"THE MAN IN THE GLASS BOOTH" was a provocative, much talked-about play, both on Broadway and on the London stage. Its unique subject matter touched the two areas imperative to the vivid presentation of a story to an audience — the brain and the heart. Now it has been made into a major motion picture by The American Film Theatre, founded and directed by Ely Landau.

It's the story of a man, Arthur Goldman (is he victim or victimizer of Nazi Germany?) who is captured and brought to trial by the state of Israel for crimes against humanity. Is he an SS Colonel? A German-Jew? Is he one of us, *all* of us? Goldman's behavior and his arguments provide a fascinating commentary on the many contradictions revolving around the concept "human." The unfolding of Goldman's tale is supercharged with important thematic concerns, and finally makes a fierce, sharply dramatic statement about common humanity — its ironies, weaknesses and general involvement in guilt.

The intricate role of Goldman, with all its nuances and shadings, required an actor with enormous range and versatility. A genuinely gifted actor who has enriched both stage and screen for many years, most recently as a producer-director, Maximilian Schell, was chosen by Landau to play Goldman.

Lois Nettleton, one of the most gifted young actresses gracing the

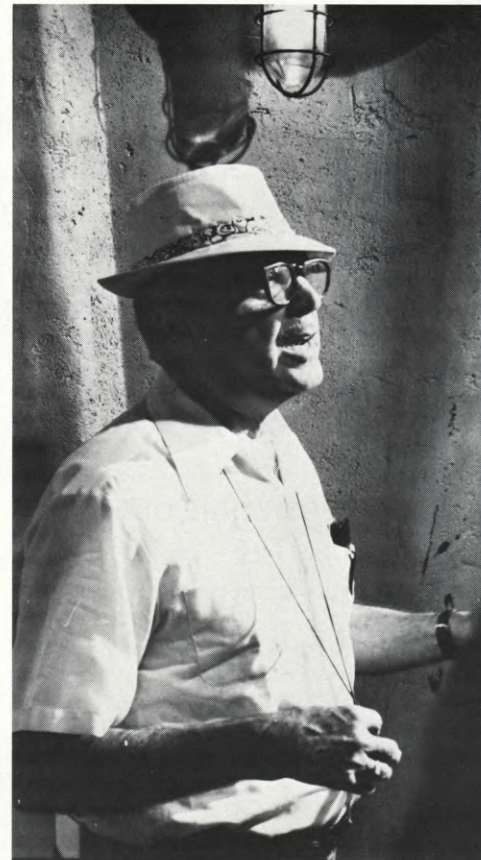
contemporary scene, stars with Schell as the Israeli prosecutor who brings charges against Goldman for his crimes against humanity.

"THE MAN IN THE GLASS BOOTH" required the guiding talent of a skilled director, and the production had such a man in Arthur Hiller. A director of the "new breed", Hiller's energy and creative approach to his material are evidenced by the versatile range of his credits. The highly regarded "POPI," the amusing Neil Simon comedy, "THE OUT-OF-TOWNERS," the Paddy Chayefsky film, "THE HOSPITAL," the musical "MAN OF LA MANCHA" and the sensitive film version of Erich Segal's number one bestseller, "LOVE STORY", as well as the hilarious film adaptation of Neil Simon's "PLAZA SUITE" — all are indicative of Hiller's directorial range and individual style. He received an Oscar nomination for "LOVE STORY".

Hiller was not the only tapped-by-Oscar man on the set. He was directing "THE MAN IN THE GLASS BOOTH", from a screenplay by the accomplished Edward Anhalt, winner of two Academy Awards for "BECKET" and "PANIC IN THE STREETS".

"THE MAN IN THE GLASS BOOTH's" Director of Photography, Sam Leavitt, is another Oscar Winner. One of Hollywood's top cinematographers, he received the Academy Award for the lensing of "THE DEFIANT ONES". In addition, Leavitt has been honored by eight more nominations in

the annual run for the Oscars. Included among his credits are: "GUESS WHO'S COMING TO DINNER?", "THE MAN WITH THE GOLDEN ARM", "EXODUS", "ANATOMY OF A MURDER", "A STAR IS BORN", "CRIME IN THE STREETS" and "CAPE FEAR."



(ABOVE RIGHT) Academy Award-winning Director of Photography Sam Leavitt, ASC at work on the set of "THE MAN IN THE GLASS BOOTH". (BELOW LEFT) In one half of what can only be called a "schizophrenic" role, Maximilian Schell, as a wealthy financier, survivor of a Nazi concentration camp, graciously hosts a party in his New York penthouse. (RIGHT) The other side of the split personality: Having been abducted to Israel and placed on trial as the former commandant of an infamous death camp, the erstwhile victim of German oppression insists on dressing in the uniform of a Nazi officer as he faces trial in an Israeli courtroom.



In the following interview, Leavitt discusses his assignment as Director of Photography on "THE MAN IN THE GLASS BOOTH":

QUESTION: Where did you shoot "THE MAN IN THE GLASS BOOTH"?

LEAVITT: We shot for five days in New York and then came back to Hollywood, where we shot for 22 days, mostly at the 20th Century-Fox studios.

QUESTION: What did the New York shooting entail?

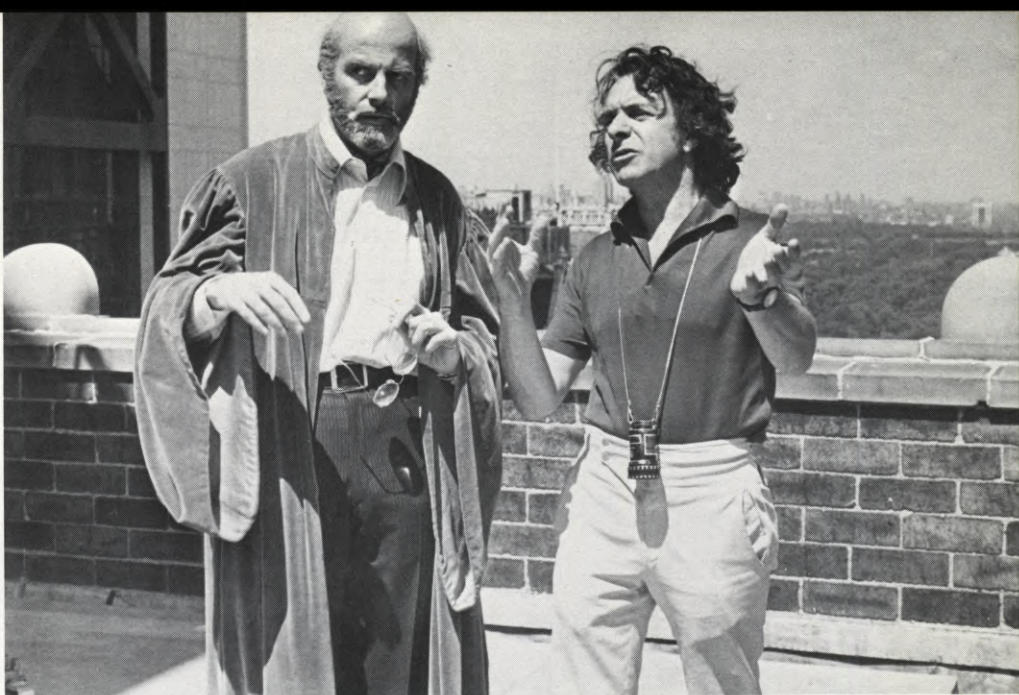
LEAVITT: We shot the establishing exteriors there, including a few night scenes involving cars. We shot night and day in all kinds of weather and it was pretty rough, because we had to shoot against light skies and dull skies and blue skies and they were all supposed to match. The lab did a pretty good job of matching. It would have been nice if we could have waited to get the right light, but these days that just isn't possible. You just have to go ahead and shoot in whatever weather you have and just do the best you can.

QUESTION: What about the night shooting? Any problems?

LEAVITT: The main problem was finding buildings that were lit up at night, because if you have nothing but a black background, why go to New York to shoot? You'd be better off to shoot it on the stage. For example, we'd start a shot on a building that was lit and then pan around to buildings that weren't lit because the lights had just gone off. So we had to shoot some extra scenes at an earlier time when the lights were still on. Because of the energy problem you couldn't get anybody to leave their lights on. Once in a while we'd ask somebody in a building to put their lights on, which they usually did, but you can't put all the lights on in all the buildings on Central Park West. To make things even more difficult, we'd shoot all night and into the morning hours when it was almost daylight — but I'd still have to make those shots look like night.

QUESTION: Did you have any trouble getting sufficient exposure in those night long-shots?

LEAVITT: I knew I would have that problem, so I went and talked to the people at the T.V.C. Lab, which was doing our processing in New York, and they told me that if I could get four foot-candles of light onto the film, they could take it from there. So we rented some ultra-speed lenses (as fast as T/1.1)



On the terrace of a New York penthouse (that was once the home of famed artist Norman Rockwell), Schell takes direction from director Arthur Hiller. The penthouse interiors were built and filmed on the sound stages of the 20th Century-Fox studios in Hollywood. Filming on this terrace, 23 stories above New York's Central Park posed thorny lighting and equipment problems: How does one hoist Brute arcs and the huge generator to run them 23 stories?

and shot wide open with available light. We gave the lab at least four foot-candles and they processed the film with their special Chem-Tone process. The footage looked beautiful.

QUESTION: What sequence in New York was the most difficult to shoot?

LEAVITT: The roughest was a sequence which was shot on the terrace of a penthouse 23 floors up. I really needed a couple of Brutes up there, but there were two problems. The first was the expense, which is always a critical item for an independent company, and the second was the sheer problem of hoisting two Brutes (and the generator

to run them) 23 stories up to where we were shooting. I finally asked them to give me one Brute, knowing that it wouldn't cover the set except in a particular section. Since the Brute was needed for daylight fill, I had the arc converted from yellow light to blue light by means of a converter that raised the color temperature. I figured that I'd fill in the rest of the area with FAY lights. However, the FAY lights have a tendency to go toward the red side because the dichroic filters fade, and even when you put blue gels over them you still get a red situation. Under such conditions, it might be better to do the whole picture in yellow light and let the lab put the blue in.

Continued on Page 700

Setting up on a Hollywood sound stage to shoot a scene for "THE MAN IN THE GLASS BOOTH", a production of the American Film Theatre, the first "National Theatre-on-Film". In its premiere 1973-74 season, the AFT presented, on a subscription basis, eight motion pictures based upon great works of the contemporary theatre. They were shown in matinee and evening performances on two consecutive weekdays each month in more than 500 theatres throughout the United States and Canada. The 1975 season includes five more films.



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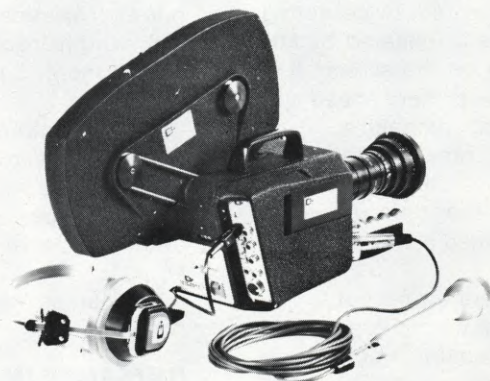
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THE LIGHT WHICH GIVES THE MOST LUMENS PER WATT

The latest data on high-efficiency CSI and HMI metal halide lighting, plus frame rates and shutter angles which make it possible for them to be used for cinematography without flicker

By DAVID W. SAMUELSON

Metal Halide lamps are enclosed mercury arc light sources with metal halide additives which produce an enormous amount of light for the amount of electric current they consume.

There are two principal types of MH lighting: CSI made by Thorn Lighting Limited and HMI made by Osram GMBH.

A typical metal halide lamp will produce 90 lumens of 5000°K (182 Mireds) light per watt of electricity. By comparison, a blue-filtered conventional tungsten halogen lamp produces only about 14 lumens per watt.

For 3200°K (313 Mireds) operation, the MP lamp must be filtered and the tungsten lamp remain clear. The respective outputs are then 60 and 27 lumens per watt.

For the film cameraman the advantages of MH lighting are that a lamp bright enough to fill the shadows caused by sunlight or illuminate a large area may be operated off a domestic supply and distributed by comparatively light-weight cables. Even if operating away from a mains supply, a very much smaller generator than heretofore will be required.

MH lamps must have an AC supply and a ballast unit. If fitted in especially designed luminaires, they are capable of greater degrees of flood or spot than tungsten lamps.

MORE TO MH LIGHTING THAN JUST PLUGGING IN A BULB AND SWITCHING ON.

MH lamps must have a ballast unit between the supply and each lamp head. Normal ballast units produce a "sine wave" light output of twice the frequency of the input supply. Ballast units designed for 50 Hz are suitable for 60 Hz, and vice versa.

An inherent problem of MH lamps (under normal circumstances) is that the light emitted is not of a constant luminosity, but decays by 60 or 85 per cent twice during every AC cycle. To ensure that scenes illuminated by MH lighting show no flicker or scintillation on the screen, it is necessary that the supply frequency, the camera speed and the shutter angle be known, constant and compatible.

The light decay problem may be overcome by the use of a ballast unit specially designed for cinematography which will produce light which has almost no decay time and which makes filming possible at almost any speed and with almost any shutter angle.

Even if a cameraman does not deliberately set out to use MH lights, he will undoubtedly encounter them if ever he has to film by the light of a flood-lit sports stadium or other large areas where this form of lighting is most generally used.

Like any other arc, MH lamps emit a certain amount of UV light and, in consequence, must be shielded by glass. MH bulbs, except in sealed beam form, must not be touched with bare fingers, the sodium from which cause devitrification of the quartz envelopes.

Color Balance

Used on their own or as a daylight fill, MH lights give a light which produces negatives of even color balance which may be finally corrected in the laboratory to make normal looking prints.

Used in conjunction with Tungsten Halogen lighting, for other than placing behind a window to simulate daylight pouring into a room, color matching is a little more difficult

and cameramen are advised to make their own tests.

THERE ARE TWO TYPES OF MH LAMPS

Metal Halide Lamps

Two types of MH lamps are generally available for use by cinematographers. Physically they are very different. The color temperature of the light is also different but both may be used successfully for daylight filming. The light decay time (which affects flicker) is also different.

CSI Lamps (Made by Thorn Lighting Limited, Great Britain)

Color temperature: The color temperature of light from CSI bulbs does not approximate to a "black body" source and cannot accurately be measured with a color meter. They are matched approximately to daylight by the use of a quarter- or half-blue filter, or to 3200°K (313 Mireds) artificial light by the use of a quarter -or half-orange filter. If CSI lighting is the sole source of illumination, an 81EF (53 Mired) filter may be used on the camera and the lighting remain clear.)

Sizes Available: 1000 watt. Plain or mounted in a pre-focus type sealed beam unit with a choice of five spreader lenses giving beams of various shapes and degrees of divergence. The bare bulb may be used in the conventional luminaires but will be less efficient in terms of light output and lamp life if factory-mounted in a sealed unit.

In very broad terms, a single 1000-watt CSI sealed beam lamp is equivalent to between three and five blue-filtered 2KW tungsten halogen lamps used in modern reflector fittings and of the same number of 5 KW lamps used in fresnel fittings. A group of four CSI lamps operating off a 240-volt AC mains supply, consuming 25 amps of power, has approximately the same light output as a 225-amp brute arc which requires a special 110-volt DC supply. Furthermore, one brute weighs as much as about 20 CSI lamps.

Power Requirements: 220/240-volt single-phase AC.

CSI lamps require a 30-second warm-up time. Later models fitted with a large base which has the pins spread apart may be switched on and off ad lib. Earlier models require up to 10 minutes to cool off before they may be re-lit.

CSI lamps in sealed units may be handled with bare fingers.

HMI LAMPS (Made by Osram, West Germany)

Color temperature: 5500°K (182 Mireds); very similar to that of a black body source.

Sizes Available: 575, 1200, 2500, and 4000-watt.

Power requirements: 220/240 volts AC single-phase for all except the 4000-watt lamp, which requires 380 volts.

The light output on the 575-watt lamp is approximately the same intensity as an unfiltered conventional 2K, the 1200-watt to a 5K, the 2500-watt to a 10K, and the 4000-watt to a brute. It must be remembered that the blue filtering will halve the efficiency of a tungsten lamp and the orange filtering the efficiency of an HMI lamp by one third.

HMI lamps require an initial warm-up period of three minutes, after which they may be switched on and off ad lib.

Osram is developing a 200-watt bulb which, together

with a suitable inverter, will make it possible to operate a highly efficient MH lamp off a battery supply. The possibility of truly portable daylight fill when shooting people in hard sunlight would then become a practical reality.

WITH HMI LIGHTING CERTAIN RULES MUST BE OBSERVED.

MH Lighting Camera Settings.

Several possibilities exist for the supply of power suitable for MH lighting.

Each introduces its own complications and, unless the restrictions of each are recognized and filming done within the limitations, uneven exposure of successive frames may result.

Single-phase, Sine Wave AC

A normal choke type ballast unit, as used in sports stadia, etc. produces two pulses of maximum illumination for every cycle of AC. Between these the luminosity of the light drops by 60 per cent for CSI lamps and 95 per cent for HMI. For totally flicker-free operation the frequency of the AC supply, the speed of the camera and the shutter opening must be interrelated, viz:

Two light pulses per frame

$$\text{Camera speed} = \text{supply frequency} \times \text{shutter angle} \div 360$$

$$\text{Shutter angle} = \text{camera speed} \times 360 \div \text{supply frequency}$$

$$\text{Supply frequency} = \text{camera speed} \times 360 \div \text{shutter angle}$$

The degree of variation that will be found to be tolerable on the screen will depend upon the standards to which the cinematographer is working, if any unlit area or area lit by tungsten lighting is included in the picture (by comparison with which any flicker will be more noticeable), the latitude of the filmstock (emulsions producing poor shadow detail will tend to accentuate flicker) and the cut-off efficiency of the shutter (a shutter which exposes one part of the frame for longer than another) may introduce flicker. To ensure even exposure throughout, it is essential that the camera shutter open time is correctly set relative to the supply frequency to within ± 5 per cent for CSI and ± 3 per cent for HMI lamps.

It is possible to operate off 60 Hz at 24 fps with a 180-degree shutter using $2\frac{1}{2}$ peaks of light every $2\frac{1}{2}$ cycles. Such operation will be free of flicker, provided that the lighting supply, the camera speed and the shutter angle are all at optimum. There is very little tolerance, making it advisable to use a mains-driven camera motor and an accurately measured shutter angle. There may be a very slight variation in exposure levels between scenes.

Motion Picture Type Ballast Units

Special Ballast units, which produce a light with a minimum decay period have been designed and may be used at almost any camera speed at any shutter angle.

Triplicated Lighting

Sports stadia and other areas lit by groups of three similar MH lights mounted on one fixture, each group of

TRIPPLICATED LIGHTING

Possible Camera Speeds for any Shutter Angles of 120° or more

Lighting supply Frequency

50 Hz. 100, 75, 42.9, 37.5, 33.3, 30, 27.3, 25, 23, 21.4, 20, 18.7 fps
60 Hz. 120, 90, 72, 60, 51.4, 45, 36, 32.7, 30, 27.7, 25.7, 24, 22.5 fps

Maximum Possible Camera Speeds for 180° Shutter
50 Hz. 150 f.p.s.
60 Hz. 180 f.p.s.

Maximum Possible Camera Speeds for 180° Shutter & Phase Positioning
50 Hz. 300 f.p.s.
60 Hz. 360 f.p.s.

three covering exactly the same area, at the same intensity, permit filming at almost any speed and shutter angle up to twice the mains frequency.

MH LIGHTING CAMERA SETTINGS

For flicker-free operation using a standard (choke) ballast unit

CAMERA SPEEDS FPS	OPTIMUM SHUTTER ANGLES (°)					
	50HZ			60HZ		
8	202	173	144	192	168	144
12	173	130	86.4	180	144	108
16	173	115	57.6	192	144	96
18	194	130	64.8	162	108	54
20	213	144	72	180	120	60
22		158	79	198	132	66
24		173	86.4	216	144	72
25		180'	90'	225	150	75
26		187	94		156	78
28		202	101		168	84
30		216	108		180'	90'
32			115		192	96
36			130		216	108
40			140			120
48			173			144
50			180			150
64			180'			196

SHUTTER ANGLES (°)	OPTIMUM CAMERA SPEEDS					
	50HZ			60HZ		
50	13.8	6.9	4.6	16.7	8.3	5.6
60	16.7	8.3	5.6	20	10	6.7
70	19.4	9.7	6.5	23.3	11.7	7.8
80	22.2	11.1	7.4	26.7	13.3	8.9
*90	25	12.5	8.3	30	15	10
100	27.8	13.9	9.3	33.3	16.7	11.1
110	30.6	15.3	10.2	36.7	18.3	12.2
120	33.3	16.7	11.1	40	20	13.3
130	36.1	18	12	43.3	21.7	14.4
140	38.9	19.4	13	46.7	23.3	15.6
144	40	20	13.3	48	24	16
150	41.6	20.8	13.9	50	25	16.7
160	44.4	22.2	14.8	53.3	26.7	17.8
170	47.2	23.6	15.7	56.7	28.3	18.9
173	48	24	16	57.7	28.8	19.2
175	48.6	24.3	16.2	58.3	29.2	19.4
*180	50	25	16.7	60	30	20
200	55.6	27.8	18.5	66.7	33.3	22.2

*There are narrow windows at 12.5, 25 or 50 fps/50 Hz supply and 15, 30 or 60 fps/60 Hz supply when the shutter may be set at any angle and adjusted while the camera is running.

To calculate other shutter angles:

50 Hz supply
camera speed $\times 3.6 \times$ number of light pulses per exposure.

60 Hz supply
camera speed $\times 3 \times$ number of light pulses per second

To calculate other camera speeds:

50 Hz supply
Shutter angle $\div 3.6 \div$ number of light pulses per exposure

60 Hz supply
Shutter angle $\div 3 \div$ number of light pulses per exposure

The above figures are optimum. In practice, there is a tolerance of about ± 5 per cent for CSI lights and ± 3 per cent for HMI lamps.

In totalling tolerances it should not be forgotten that the mains supply, while usually accurate to within half a degree of its statutory frequency, sometimes is as much as two per cent off optimum under load shedding conditions.

Allowance must also be made for variations in the camera shutter opening which, on an adjustable shutter camera may be another one or two per cent.

Mobile alternators may vary by as much as four or five percent, or more, from their desired setting. ■



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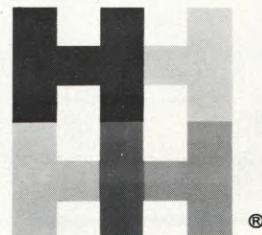
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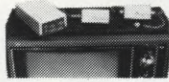
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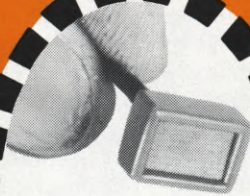
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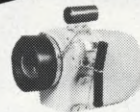
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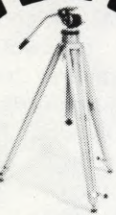
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JOHN SCHLESINGER
Continued from Page 661

down by any number of studios for being "too depressing and uncommercial" (an experience repeated again recently with "THE DAY OF THE LOCUST") and it was only after Hellman, writer Waldo Salt and Schlesinger himself deferred a large part of their salaries in lieu of a major percentage of the profits that United Artists, particularly with the encouragement of David Picker, agreed to finance the film.

Schlesinger and Salt worked on the first draft of "COWBOY" 's script in California where Schlesinger had rented a house in Malibu. Much of its observation of low life in and around Times Square is based on what Schlesinger saw in the cheap bars and all-night restaurants along Hollywood Boulevard. Few critics failed to mention how noteworthy it was that a British director could bring such a sense of social realism to a film made in what for him was a foreign country. "He has captured the atmosphere of New York, Miami Beach and the Texas Panhandle in 'MIDNIGHT COWBOY' as surely as he captured the atmosphere of the Hardy country in 'FAR FROM THE MADDING CROWD' or of an English factory in 'A KIND OF LOVING' and 'BILLY LIAR,'" Gene Phillips has noted.

"COWBOY," of course, was an extraordinary commercial success, as well as the Best Picture Oscar-winner for 1969. As a result Schlesinger and Hellman made fortunes from the film (its overall world-wide gross is estimated now to be close to \$45 million) as did United Artists, who did not now hesitate to allow Schlesinger, with Joseph Janni, to make "SUNDAY BLOODY SUNDAY", an English domestic drama — based on Schlesinger's original idea — and written by the critic Penelope Gilliatt.

The period immediately following "SUNDAY BLOODY SUNDAY" was a dark time for Schlesinger. The film was not a commercial success, making another project difficult to finance. He was anxious to film "Hadrian VII", based on the novel by Baron Corvo which had been recently adapted for the stage by Peter Luke. Schlesinger had gone back to the novel for his screenplay, written by Charles Wood, and had persuaded Dustin Hoffman to play the title role of the reclusive eccentric who fantasizes that he has become the first English Pope. Columbia at first agreed to underwrite the film, then backed away from the production which was already in its early stages of pre-production. "They let me know on Christmas Eve," Schlesinger says somewhat ruefully. "Quite a present."

His next project, an enormous West End musical based on the lives of Queen Victoria and her consort Albert, though produced, was a relatively unhappy experience for the director who says now that "no musical can possibly be well directed by anyone but a true choreographer."

In between he went to Munich to film an episode for David Wolper who was making a documentary about the 1972 Olympic Games for which several other internationally known directors also contributed, including Arthur Penn, Claude Lelouch and Milos Forman. (See *American Cinematographer*, November 1972) Schlesinger built his episode around the British entry in the marathon race, intercutting shots of the young man's long-term preparation and training for the event with the actual race. During the filming, the Arab terrorists struck and Schlesinger's footage of the fear and trembling surrounding the Olympic village is remarkable.

Although "THE DAY OF THE LOCUST" was first offered to Schlesinger as early as 1967, he hadn't begun to prepare the project at all seriously until early in '72 when producer Ronald Shedlo indicated that there was perhaps some studio interest in the project.

Schlesinger re-read West's novel and decided to commit himself. Waldo Salt began work on a first — later a second and third — draft and Schlesinger moved to Hollywood when it seemed fairly certain that Warner Brothers had decided to back the project. Unhappily, Warners withdrew without any explanation, leaving Schlesinger and Salt stranded. For some months back in England Schlesinger pondered whether or not to move on to something else. However, discussions with his "COWBOY" producer Jerome Hellman convinced him to persevere. Shedlo withdrew and Hellman now joined the enterprise. "The feelings were good, although no deal had yet been made with a studio to finance the project," Schlesinger has said. "You know, the old team back together — that sort of thing." While Hellman worked on securing financing, Schlesinger and Salt revised the script once more and, by the end of the year, Schlesinger had begun to line up a cast.

It was only in early 1973 that Paramount agreed to a "development deal." Schlesinger began work in earnest, hoping against hope that Paramount would come through finally with the money for the production. The project was officially announced in May of '73 and "LOCUST" became a reality.

"THE DAY OF THE LOCUST" took 24

weeks to film and Schlesinger claims to have enjoyed the experience "perhaps as much if not more" than any other film he has directed. He rented a house in the Hollywood Hills just off the Sunset Strip, which he enjoyed living in so much that he purchased it shortly before the end of production.

"Hollywood is a splendid mixture of things and styles," he has said. "It is a very comfortable place to live. But one must be working. I would imagine it would be death here not to be involved and committed to one's work . . ."

Schlesinger, who is unmarried, lives in a townhouse in London and keeps a place in Kent where he is an avid gardener. When not working, he travels. He has owned a number of restaurants in London and still maintains one in partnership with an old school friend, The Grange, in Covent Garden.

Schlesinger often directs for the stage in England. In the past he has staged productions for the Royal Shakespeare Company both at their London home, The Aldwych, where his credits include "The Days of the Trees", starring Peggy Ashcroft, and at Stratford where he directed the seldom performed "Timon of Athens" starring Paul Scofield. He was recently appointed an Associate Director of the British National Theatre and recently staged a new production of Shaw's "Heartbreak House". In 1970, Mr. Schlesinger was made a Commander of the British Empire (C.B.E.) by Queen Elizabeth II.

In the following interview, conducted in Hollywood by Leigh Charlton following the West Coast preview of "THE DAY OF THE LOCUST", John Schlesinger discusses his work on the film — plus the interesting dichotomy of his love-hate attitude toward Hollywood.

QUESTION: When were you asked to direct THE DAY OF THE LOCUST and how did it come about?

SCHLESINGER: I was asked to do it before I made MIDNIGHT COWBOY by an American producer who openly said he didn't think it was easy to get financed, but if I was interested, he would do it. And I was interested. After MIDNIGHT COWBOY, Warner Brothers said, "Come and do a picture for us; what would you like to do?" And amongst other things, I said I'd like to do this. So, the rights were got and we started work. I asked Waldo (Salt) to do the screenplay and we went through about three drafts in a period of two years (I was finishing up SUNDAY BLOODY SUNDAY as well). Then it seemed to be going nowhere and then we got Jerry (Producer Jerome Hellman) involved so that the whole old team was back together again, after

Warner Brothers dropped it. We eventually, after a long wait and a lot of push on our part, got it financed at Paramount.

QUESTION: So you actually started thinking about it before MIDNIGHT COWBOY.

SCHLESINGER: Yes.

QUESTION: I think there's a lot of similarity between the two films. It's interesting you were thinking about them at the same time.

SCHLESINGER: They're both kind of Odysseys of some kind of innocent.

QUESTION: You have a reputation for being a perfectionist, which is obvious from your films. What kind of preparation did you go through to capture the thirties element, to set the film in an "historical framework"?

SCHLESINGER: One thing we didn't want it to seem to be is a piece of nostalgia. I think the period is fine, but I don't think one should push it at people. You've just got to be correct. Much more important is to get the look of something right, and to determine, when you're going to shoot a period film, whether you're going to try to make it look like a film that was made then. For instance, in CHINATOWN Polanski opted very deliberately to go into the Panavision format because he wanted it to look like a film looking at the thirties in 1974. The cameraman, the designer and I decided we wanted the film to look, not as if it had been shot then, but as if we were, in a sense, looking at a period romantically. That's why the score is romantic (lots of solo

violins), so that it has a kind of romantic flavor with an essentially anti-romantic underbelly. We wanted the camera-work to look "sheeny," not glossy, but have a sheen to it, which is why it's soft. We wanted the color to be very well controlled.

QUESTION: I hadn't expected the film to look so "sparkling." Why did you choose such a look, given the underlying cynicism of the story?

SCHLESINGER: Because the whole thing is about the pursuit for beauty and romance, either in one's dreams, or in a place that represents this, or in the making of other people's illusions (like the making of movies), or in being in love — thinking you're in love. It's all about the quest for romance.

QUESTION: You don't think the look is in conflict with the apocalyptic vision?

SCHLESINGER: No, I think that's what it's all about. I think it's the promise held out like a very large, glistening carrot, and the essential violence that lies underneath all of us. Originally, you see, it was called "The Cheated" — which is interesting.

QUESTION: Do you think the film could be set today?

SCHLESINGER: Yes, but I didn't want to do that. You'd essentially have to change some of the story, but it's happening all the time. I don't think it would be about the movies anymore; it might be about a rock idol instead.

QUESTION: Do you think the rock world has taken over the glamour that movies once had?

SCHLESINGER: Yes, very largely. I was very interested to go to a big, big party a rock star was giving for his manager's birthday (he shall remain nameless). It was a very impressive affair at Le Restaurant with a large, framed photograph of the yacht that had been given to his manager being brought in with a telegram attached saying we welcome you to come aboard your yacht. And a horse that the lawyer had given him . . .

QUESTION: Not a rubber horse?

SCHLESINGER: A real horse. It was brought in, crapped all over the floor and was taken out again, a race horse. You see, that's where all the millions are. I know some of these people and they're fascinating. They're the new rich of this place, along with some of the television stars.

QUESTION: Hollywood still represents the dream, whether it's film or music.

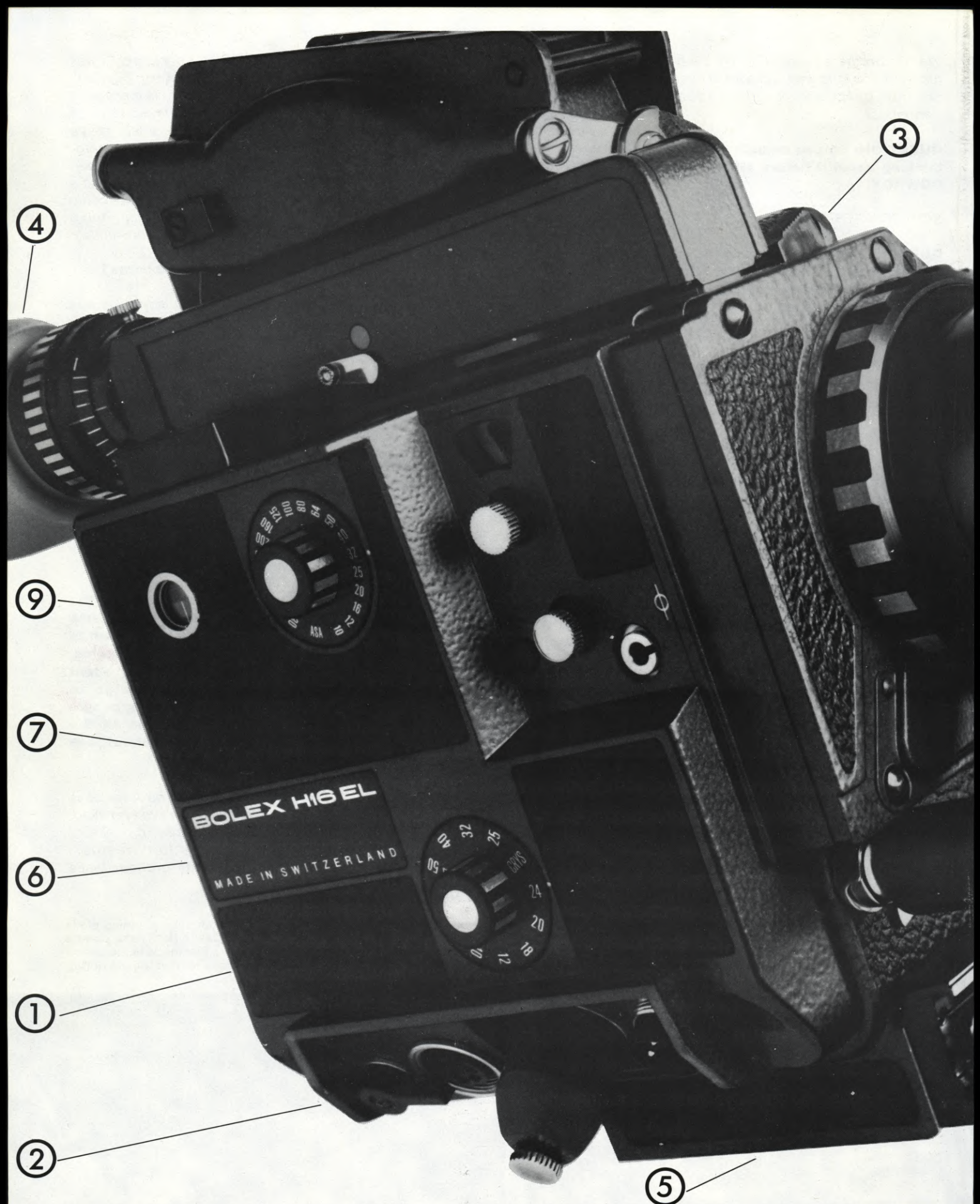
SCHLESINGER: Very much so. The dream is still the same. It's a fantasy world; that's why I like it.

QUESTION: You've travelled the world. Is the seeking after dreams (and the disappointment inherent in that) more apparent in Los Angeles, or Hollywood? I'm thinking about MIDNIGHT COWBOY. You go to New York seeking a dream; people go places seeking dreams all the time. What is special about Los Angeles?

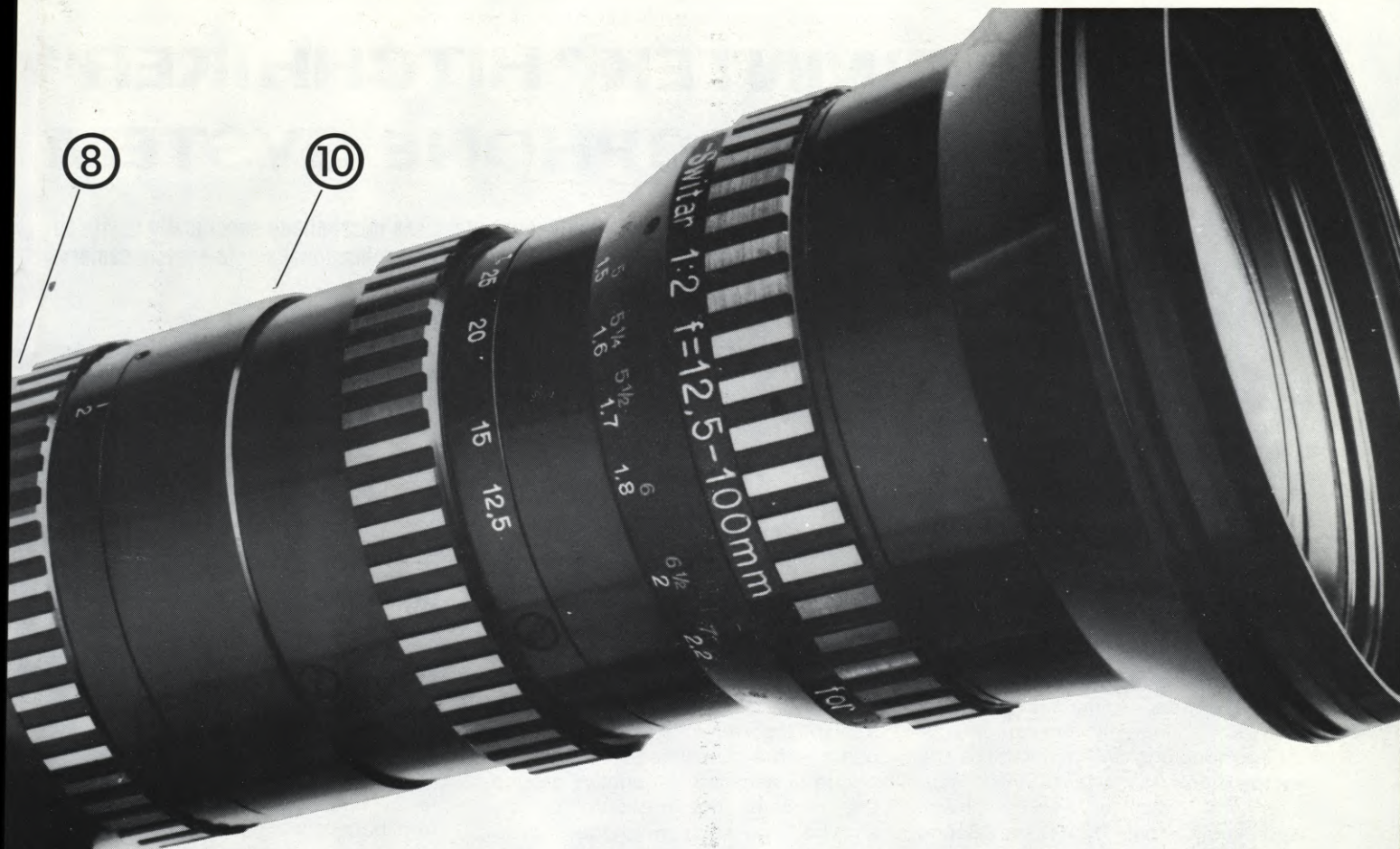
SCHLESINGER: I think Los Angeles is the most seductive place I've ever lived. It does hold out apparent promise of everything — beautiful weather, oranges falling on the ground (that's Continued on Page 680

(LEFT) Schlesinger is a meticulous film craftsman who spends an enormous amount of time and effort in the pre-production planning of his films. He is shown here on the Battle of Waterloo set from "LOCUST" giving direction to real-life director William Castle (left), who plays a director of the thirties in the film. (RIGHT) Schlesinger did not want "LOCUST" to be a piece of nostalgia, or look like a film made in the period of the story when great stars such as Gloria Swanson ruled the lots. In this photograph the Great Gloria herself visits him on the set during production of the film, as did several other prominent stars of that era.





① Crystal control motor for wireless sync sound. Other motor speeds from 10 to 50 fps forward and reverse, controlled by solid state electronics. Automatic slating with sync-pulse generator. ② Rechargeable battery that adds a mere 13 oz. to the weight and attaches right to the camera. ③ Technologically, the most advanced through-the-lens metering system. The silicon cell has no memory. So it reacts instantly, responds uniformly to all colors and is practically unaffected by temperature changes. Rugged, accurate and reliable. ④ Light-emitting diodes indicate correct exposure in bright 13X reflex finder. The completely electronic system has no mechanical parts or moving needles that can fail due to rough handling. Lighted diodes are always visible even in dim light. ⑤ Electro-magnetic control for instant start and stop with shutter in closed position. ⑥ Electronically controlled single frame capability assures the kind of accuracy and reliability found only in specially built animation units. ⑦ Superb picture steadiness to



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THE NEW SWINTEK "HITCHHIKER" CORDLESS MICROPHONE SYSTEM

A tiny, lightweight, cordless microphone specifically designed to ride on the side of most professional single-system cameras

Miniaturization seems to be a way of life today, so when Alan Gordon Enterprises Inc. became exclusive international distributor for the Swintek line of cordless microphone systems less than two years ago, it logically followed that a product would evolve from the union that would help ease the equipment burden faced by most camera and soundmen alike.

A combination of AGE Inc.'s expertise in the motion picture equipment field and the ingenuity of Swintek engineers has resulted in the "Hitchhiker", a new cordless microphone system designed to ride on the side of most professional single-system cameras.

Measuring only 3/4" in thickness and weighing only 15½ ounces, the "Hitchhiker" was conceived by Frank Kelly, Marketing Manager of AGE Inc., Sound System Division. When he concluded that since RF microphones are always used with either single-system sound cameras (film or electronic) or double-system magnetic recorders, all of which possess their own power, an obvious

approach in reducing both size and weight was to eliminate the need for the cordless microphone systems' internal power supply and to draw the power from whatever the system is being used with.

Two basic problems faced by Kelly's concept were that the new unit required an operating voltage range from 10 to 24 volts with either a plus or minus ground, and that the power drain from the donor source must be low enough to avoid too frequent battery changes. For example, the Nagra III, or IV, and the MA-11 amplifier, industry standards, use a positive ground system and if power were to be drawn from either with a conventional radio microphone system with a negative ground, the receiver board would be destroyed. The solution to these problems was found in the unique and exclusive "Hitchhiker" floating ground, with a diode bridge that automatically seeks the correct ground required to match the "Hitchhiker" to its power source and a suitable circuit to control

the voltage range.

With the solution of these major problems, AGE Inc. and Swintek were able to launch production on the "Hitchhiker", engineering it to draw less than 60 milliamps of power from camera or recorder. Pounds of weight were eliminated, as was the need for carrying spare receiver batteries.

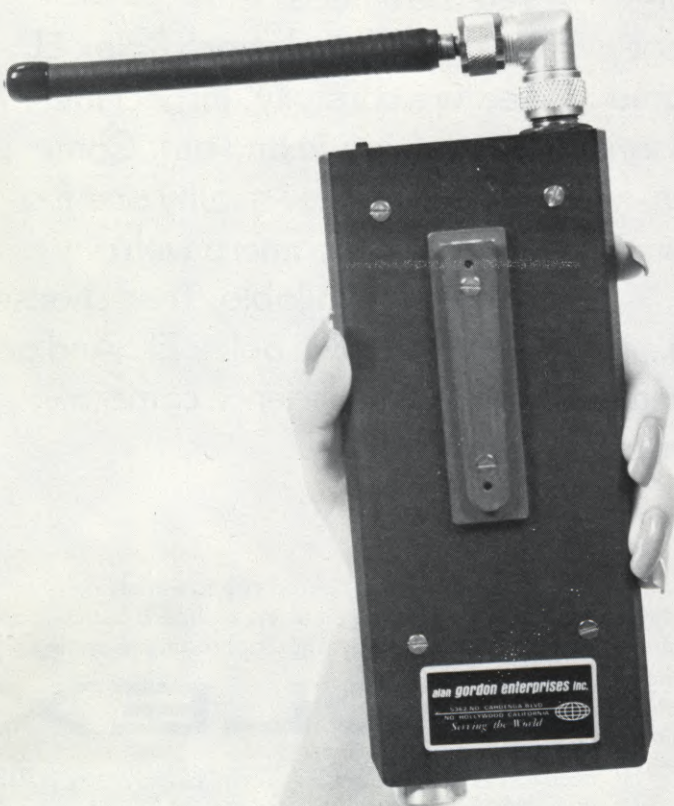
In addition, in order to provide production capability independent of a camera or recorder, accessory power supplies are available which allow the "Hitchhiker" to be powered by AC, or a five hour pocket-sized power supply. Special cables are available to draw power from the cigarette lighter of your car or from an amplifier, such as the MA-11, the Nagra, or any DC source up to 24 volts. Also, an inexpensive lantern battery will power three units for eight hours or a single unit for 25 hours. The variety of these choices assures the user will never be without power.

The "Hitchhiker" system incorporates the latest highband VHF crystal-controlled transmitter and an exclusive crystal front end receiver permitting the use of multiple receivers as close as 50KC in frequency to be operated contiguously without co-channel interference. This crystal front end eliminates interference from other bands on close frequencies or much higher power outfits such as police and civilian radios, taxis, ambulances and other similar broadcasters who have proved to be the bane of film and TV sound recorders. The "Hitchhiker" enables the use of RF equipment in areas not possible with any other system.

To further illustrate the value of the exclusive crystal front end, the legal band width in England for example, is only 171.1 to 172 Mgz. With conventional wireless microphone systems, only two or at most three systems can be used simultaneously within this band width without co-channel interference unless highly directional antennas are employed, which is not practical. With the Swintek system, up to nine units can be used simultaneously in the same band width without any problem.

The FCC has under consideration, at this time, several proposals for opening additional band widths for the use of the motion picture and television

The new Swintek "HITCHHIKER" Cordless Microphone weighs only 15½ ounces and is only ¾" thick. The antenna is shown on the right in this photograph. The "HITCHHIKER" features a unique and exclusive floating ground with a diode bridge that automatically seeks the correct ground to match the microphone to its power source (camera or recorder) and a suitable circuit to control the voltage range.



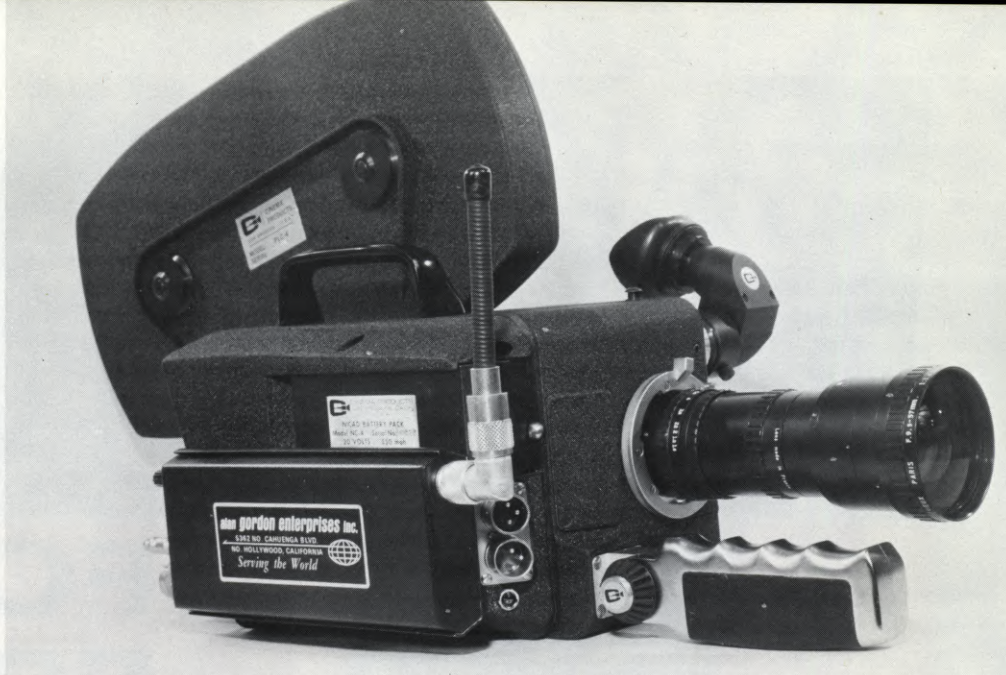
industries other than the 450 Mcz band now legal for TV broadcasters. Swintek, however, can currently supply TV broadcasters certain frequencies for which licenses may be obtained by changing the transmitter characteristics of the Swintek system. One major broadcaster has already obtained licenses on units which operate simultaneously, though they are separated by only 50KC, which is not possible except with a Swintek crystal front end receiver.

The "Hitchhiker," especially adaptable to the needs of the hard-news cameraman, is easily mounted on the side of film cameras such as the CP-16/A, TGX, Frezzolini, and the Sony and Ichigami electronic news-gathering cameras.

The "Hitchhiker" is ideally suited for use with the Nagra III and IV, both in the studio and especially in on-the-move double-system sound recording. Each of these recorders provides a regulated 10 volt power output and maintains this voltage throughout the useful recorder battery life, thus eliminating any degradation of sound because of the tapering off of battery voltage. The "Hitchhiker" is easily attached to the side or back of the Nagra and, with only 15½ ounces of additional weight, provides professional-quality cordless sound.

A recent development of support equipment for the system now allows three receiver units to be housed in an operational porta-case, complete with all accessories including transmitters, DC or AC power supplies and weighing a total of only six pounds. Special backpack units can record sound in temperatures as low as -35°F. The transmitter can be provided with waterproofing and, in fact, will be used by frogmen in space-capsule recovery programs so that their dialogue can be transmitted live to television audiences.

Swintek has been in the cordless microphone field for many years, starting originally in the live entertainment industry. Today, more top-name performers are using Swintek Mark V Cordless Hand-held Systems than any other competitive product. Because of



The "HITCHHIKER" shown mounted on the CP-16A camera. The unit fits most single-system professional cameras, including the General and the Frezzolini. The new cordless microphone, with the need for its own internal power source eliminated, draws less than 60 milliamps of power from its host camera or recorder, thus doing away with pounds of weight, plus the need for carrying spare receiver batteries.

the unique front-end capability, as many as nine Swintek Mark V units have been in operation at the same time in the MGM Grand Hotel's presentation of "Hallelujah Hollywood" in Las Vegas, and are found in all major showrooms, including the Stardust, Hilton, Desert Inn, Sahara and many others. When Alan Gordon Enterprises Inc. was appointed to market the Swintek Systems in the motion picture and television industries, AGE inc. assigned Kelly, an expert with more than 30 years' experience in the field, to conduct a market study to determine the needs and requirements within the industry. A three-month survey revealed many universal complaints about existing cordless microphone systems. These complaints included the following about transmitters: (a) case noise; (b) the type of microphone inputs supplied; (c) the method of attaching microphone to transmitter; (d) method of attaching antenna to transmitter; (e) the need for an improved battery-terminal connector; (f) the lack of an indicator to set a maximum audio output level un-

compressed from the performer position. Receiver complaints included a need for further minimizing co-channel outside frequency interference, and spurious noise, when working in close range of other broadcast frequencies. Also general weight and size reduction.

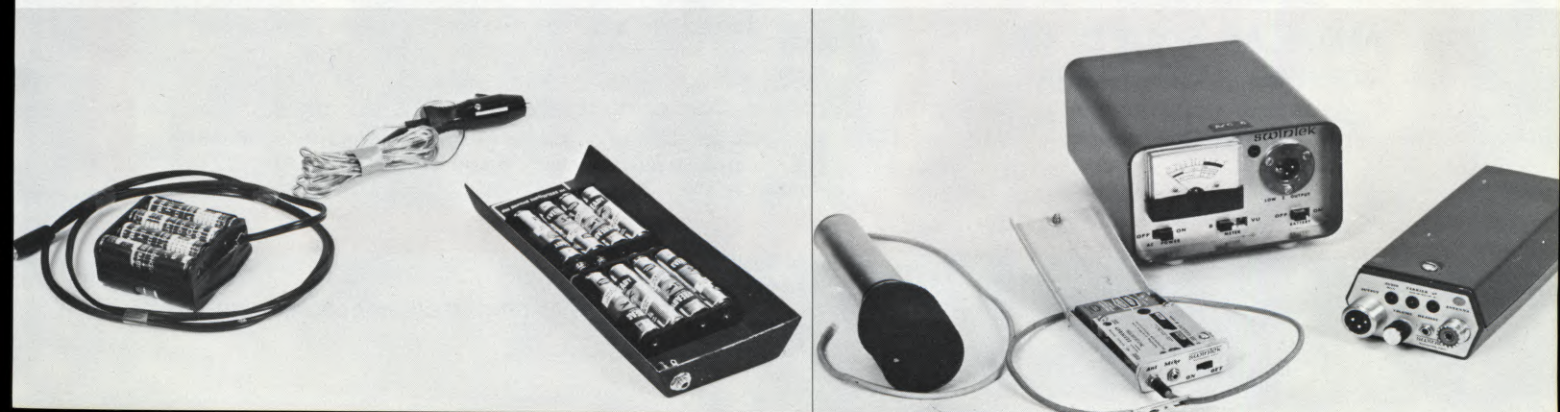
As a result of the findings of the survey, by the time AGE Inc. introduced Swintek to the motion picture and TV industries, all of the above discrepancies had been corrected.

Among the most important innovations introduced were an updated lavalier transmitter with dual-microphone input. The two inputs are for powering any dynamic microphone or any condenser microphone that can be powered from 9 volts. Special attention is given in ghost-powering the condenser microphone to avoid an increase in the low-end response of typical lavalier mikes such as the ECM 50, CO-85, and the new Mini-Mic.

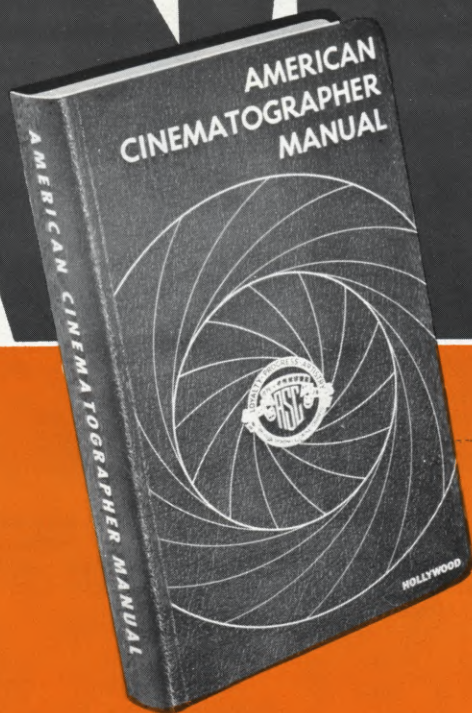
Another was a method of setting the audio output level from transmitter position with the microphone on the

Continued on Page 720

(LEFT) Auxiliary power for use with the "HITCHHIKER" includes (left to right) a 12-volt pocket battery pack, power cable for connection with automobile lighter socket and 12-volt battery case. (RIGHT) Other Swintek microphone systems include (left to right) the Mark V, Mark IV and Mark III. The "HITCHHIKER" is ideally suited for use with Nagra III and Nagra IV recorders in the studio, and especially in on-the-move double-system sound recording.



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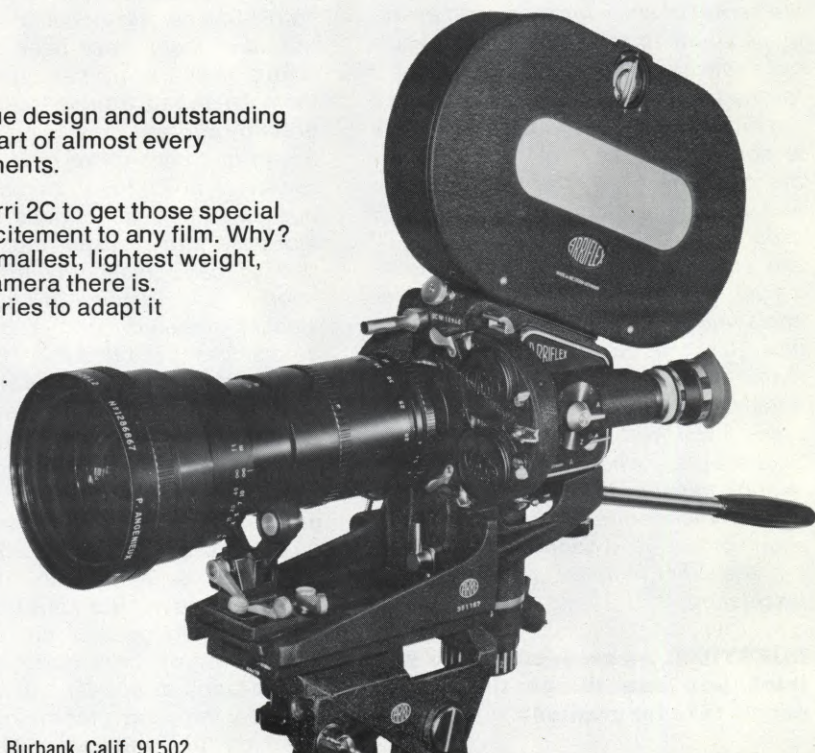
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JOHN SCHLESINGER
Continued from Page 673

quite literal; it does happen, right in my own garden here), nature that is never quite real, the instant garden you see in Beverly Hills — instant trees, instant everything. It's instant gratification, it seems to me, here, filled with beautiful people. Instant sex; instant promise; instant stardom; instant failure. "So and so's not hot anymore." "Okay, cross him off." "So and so's not bankable anymore." "Okay, cross him off." It's instant. It's all instant. And yet, you can go on existing. There's the story told about the man who said: "You get up in the morning and you have a little breakfast and you have a little swim and you lie in the sun and have a little lunch and you have a little nap and you have a little sex and you have a little swim and you have a little cocktail and you have a little dinner and you have a little sleep and you have a little sex and you have a little breakfast and you have a little swim and you have a little cocktail and you have a little lunch and you have a little sleep and you have a little sex — and suddenly you're sixty." And I think it's true, it does happen here! There is nowhere else in the world where I've seen people out walking the dog in their nightdresses at four o'clock in the afternoon.

QUESTION: Is it more ruthless?

SCHLESINGER: The whole business world is ruthless anyway — politics are ruthless; show business is ruthless, and you can equate the two. Because this is the center of show business and everyone's counting their dollars and who's hot and who isn't and who's on the A list for the parties and who isn't. But that's not only what this place is about. There is something I call the "maybe syndrome", which is typical of this place and which fascinates me. "Maybe I'll drop by for dinner tonight." "Maybe I'll see you later." It's very easy, because it's all kind of motoring up to someone's house. Life is very easy, and very nice. It's the maybe syndrome, and that's pleasant. It's what's going on underneath the sun and the sprinklers, these awful, ruthless things going on. So it is a place where someone can say, "I don't think we'll have a warehouse here any longer; let's turn it into a real estate office." And boom, it's done. And I've seen that happen, that's what's so fascinating.

QUESTION: As an outsider, do you think you see things that other people take for granted?

SCHLESINGER: They say they do. I don't take things for granted, I'm

always looking at things anywhere I am because it's my hobby as well as my profession, and I enjoy it very much.

QUESTION: Didn't I read somewhere that you saw someone planting an artificial Christmas tree on a grave in October (a scene in *LO-CUST*)?

SCHLESINGER: Yes, I did.

QUESTION: How many other things are there like that in the film?

SCHLESINGER: I saw someone mowing the lawn in their pajamas and put that in, and I've always been fascinated by the sprinklers that sprinkle real plants, fake plants, concrete and then ultimately spill over into the pool. The water that is constantly going; water, water, everywhere, and not a drop to drink . . .

QUESTION: I'd like to ask you about the character Tod in *THE DAY OF THE LOCUST*.

SCHLESINGER: I feel very much like him.

QUESTION: I would assume that means you identify with him — but why?

SCHLESINGER: I identify with Tod because I've had a kind of curious career in a way because I've always chosen to do subjects about which everybody says, "You're not serious; you're not really going to do that are you?" To a certain extent some of them, not all of them, have been risks, conscious risks on my part. And most of them have had trouble getting off the ground, and this one is no exception. So, in that sense, I've never really felt secure, I don't think anybody in this business does. It's curious that for all this ease and pleasant life, there is a sort of basic insecurity for so many people, going around in ideal circumstances freaked, and protective of themselves. But I find that I can look at it . . . I don't mean I grandly stand apart, but I don't really want to be a part of the things that to me don't matter in the whole showbiz life. Because once they start to matter, I'll have more things to get paranoid about. If I really was on party lists and cared whether I was asked here or there . . . it would be just another burden. But I'll admit that it's fascinating to go and eat off a gold plate at a producer's house and watch the Cezanne disappear into the ceiling, to reveal the screen for the night's film-watching. It is interesting to see that, and then the next night to go and have dinner sitting on the floor of a house in

Topanga Canyon. Hollywood can be all those things. That's why I love it.

QUESTION: I found it interesting that in making your film you didn't stick to the ending as written in the book.

SCHLESINGER: But I did. The ending in the book has Tod being carried off screaming, imitating the ambulance. But the real ending in the book is that he lived an experience and then went off and put it down in a painting, as a kind of catharsis. That's in the book and that's what's important about what we're trying to say in the film. No matter what, the end is a catharsis, and out of it will come change. It is also saying that the end of the world is nigh, if we're not careful.

QUESTION: I didn't pick up on your ending being in the book. I thought the debacle caused Tod to flip out.

SCHLESINGER: I don't interpret it that way.

QUESTION: Do you agree, though, that you switched emphasis from Homer to Tod in the film?

SCHLESINGER: No. I think that Homer is the only fully developed character in the book, other than Harry Greener. Tod isn't developed at all; he's just a viewpoint — but in order to make a film, we had to dramatize Tod.

QUESTION: But what effect do you think the Hollywood fire, the holocaust, had on Tod?

SCHLESINGER: I don't think you should take the holocaust absolutely literally. It starts as a riot in which he is injured and witnesses someone he knows being submerged in the crowd. Having started to draw things about a Los Angeles holocaust and put them up on his wall, the whole thing starts to get into his head. It's surreal, not realistic — which is why the end is so peaceful, all sunny and sprinklers. The crack in the wall of his apartment is still there, and the rose is still in it.

QUESTION: But he's gone.

SCHLESINGER: But he's going to put it all down; he's started to do that. He's not dead, as many people think. He's a survivor.

QUESTION: How strongly did you feel about adapting *THE DAY OF THE LOCUST*?

SCHLESINGER: Very. I thought it was a terrific book. Whenever one gets



Schlesinger is deeply concerned about people and the human condition. His films invariably deal with the semi-losers of life who have to settle for second-best. Of his work, he says, "I would hope that people would go to see my films and come away with something — something about human relationships." He has the rare ability to portray raw realism minus cynicism, and with an underlying compassion.

tempted by a great piece of writing which is a classic, however, you realize that a classic belongs to them, to the people who are going to make value judgments. Therefore, it's an added burden; an added responsibility.

QUESTION: The performances are incredible. How do you work with your actors? Do you ever get the entire cast together and rehearse scenes?

SCHLESINGER: I often rehearse for two weeks. I don't do specific scenes, but the scenes-between-the-scenes — so that the actors and I, and the author (and a tape recorder constantly running) learn. We just throw around ideas so that we have time and space in which to experiment with the characters. The dance idea came out of a series of improvisations.

QUESTION: Then the cast was all together for a time?

SCHLESINGER: Yes, for two weeks. We didn't do all the big scenes, obviously not the revival meeting or anything like that; we just did the intimate scenes. I always do that. I've done it on the last four films.

QUESTION: Once characters are discussed are the actors allowed a certain creative freedom?

SCHLESINGER: Time to breathe a bit. That's the luxury, of course, time to find out about anything.

QUESTION: What about Burgess Meredith?

SCHLESINGER: That was late casting. We'd cast someone else in the part, Paul Hartman, who died on the first day of rehearsal. So during the first week of rehearsal there was a new famous character actor or comic coming in every morning to audition. Improvise, in fact, with our other actors, in order to match up a father for Faye (Karen Black). That cut down on rehearsal time even more.

QUESTION: It's a marvelous performance.

SCHLESINGER: I'm very pleased with the performances, I think they're all terrific.

QUESTION: I would imagine you're rather an ideal director to work for, from an actor's standpoint.

SCHLESINGER: Not necessarily. Some people hate it. Atherton didn't like the experience. He told me it was the last film he'd ever do with me.

QUESTION: Why?

SCHLESINGER: I gave him a rough time, I think. I think he wanted more attention perhaps. I get so into a film and the problems are so enormous that I can't spend an awful lot of time worrying about the ego problems, or the neurosis of actors. After the day's work is finished I frankly don't much want to

see them. When the day's over I've got other things to do — like the next day's work to prepare — and I don't want to have to have dinner with them or drinks with them and smooth their ruffled feathers. It's a bit of a problem. And I'm getting a bit tougher about that now.

QUESTION: In other words, you'd rather not spend your private time socializing with the actors.

SCHLESINGER: Well, I see them on the set, take them through their paces, get them on and get them off (laughter). I know it's a dreadful thing to say and I love them dearly; I love working with them, but enough already.

QUESTION: What about screening rushes. Do you ever get the cast together at night and watch a day's or week's rushes?

SCHLESINGER: No. If an actor wants to see rushes he's welcome, but not when I'm watching them. I once made a film with an extremely good actor in it, whom I have great admiration and respect for, but who had drunk too much. He saw the rushes of a certain scene which I thought were beautiful and he got up, insulted me, the rushes and everything else, and said I'd mucked the whole thing up and shot it like some third-rate television director. From that day to this I will never see rushes with actors! Keep them out; that's my motto. They're only looking at themselves; they're not capable of looking further, so they're getting neurotic, and I don't want any extra neuroses. I'm neurotic enough for six of them, I don't need anybody else to be neurotic. Sometimes I'll screen rushes with an actor if I don't think the performance is right and I want him to see something — and if I think he can take it. Julie Christie never came to see rushes; she hated seeing them. I don't think Karen came very often.

QUESTION: In the book, the Karen Black character is seventeen. In the film she doesn't look seventeen, but that doesn't seem to matter.

SCHLESINGER: You didn't think it did? I'm delighted to hear it, because so many people are going to be pissed about this book. When I read the book, frankly, she didn't behave like a seventeen-year-old at all. When I was prompted by Waldo, who reminded me she was seventeen, I said, "I don't believe she could be seventeen." This is the problem with a classic, being true to the author. We started to look for a seventeen-year-old girl. There was no young girl who, when she was reading



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for us, could in any way convey, without seeming terribly unreal, the reams of affectations that girl had learned. Her literature was the movies, and the fantasy lives that the stars were portraying in the movies; that was her frame of reference.

QUESTION: In the book it's easier to overlook the age.

SCHLESINGER: Yes, but try playing it. I defend the casting of Karen Black, which was certainly not our first choice, wholeheartedly. I think she's brilliant in the film. I don't think she's ever been better. I think her performance is absolutely miraculous.

QUESTION: How much control did you have over LOCUST?

SCHLESINGER: Total.

QUESTION: So there weren't any compromises . . .

SCHLESINGER: Well, there are always compromises, compromises with one's self, but nobody said, "You can't have her; you can't have him; you must stop shooting; you can't do that, that's too much."

QUESTION: Even though you say the ending was at least partly hallucination, it's still a pretty strong statement. Did you in any way have to play up the romance to balance off the apocalypse?

SCHLESINGER: We tried to be as uncompromising with the material as we knew how. As I said, we've deliberately gone for a kind of look for the film, and a kind of feel for the film which communicates what Hollywood is like: it's lovely. It's lovely until suddenly someone says: "Sorry, old fellow, but your film has been cancelled." And you're left with rental on the house to pay for the next six months. "And, by the way, we're stopping your expense check." That's the kind of thing that happens, and we all know it. It's happened to me. It happens to all of us.

QUESTION: Does it bother you that the last sequence was shot on a set rather than on location?

SCHLESINGER: It's the only way we could make it. I feel the last scene works terrifically.

QUESTION: And is even heightened?

SCHLESINGER: Heightened perhaps a little bit. I don't know. No, I think it's the

only way we could control those numbers of people and actually get away with less. And keep working and not have to worry about weather and whether it's getting light and whether the crowds are coming out of Grauman's Chinese at ten-thirty. The conditions to shoot on location were dreadful.

QUESTION: Do you have a favorite part of filmmaking?

SCHLESINGER: Yes, the music recording. Because you know it's coming to an end; you're suddenly seeing the touch of someone else's expertise, which is coming as a wonderful surprise.

QUESTION: You choose the music?

SCHLESINGER: Oh, sure. I choose everything. I'm very fussy about music and fussy about the thickness of the scoring. That's terrific because you suddenly see a lot of experts coming in, bringing it together for you and unless you've written the music yourself, you can't quite visualize what it's going to be like. It adds another dimension, and that's very exciting.

QUESTION: Why did you decide to make THE DAY OF THE LOCUST?

SCHLESINGER: Because I just thought that it would make a terrific film — which actually, in some ways, would extend the book. That's not to demean the book, and I hope it doesn't do that. I think our film is very true to the spirit of the book, but in order to bring a classic book to the screen — if one wants to bring it to the screen, which may in itself be criticized — then you've got to give it a life of its own. A film is a film; a book is a book.

QUESTION: Then, you're not concerned about the criticism of adapting classics to films?

SCHLESINGER: I'm not concerned with criticism — period. If I listened to everybody with two cents worth of criticism or opinion to put in I wouldn't know if I was Arthur or Martha, as they say in England. One wants to be loved, yes, because we're all egotists — but finally, to hell with them.

QUESTION: One thing I've noticed in all your films is the interesting juxtapositions you set up. In LOCUST the beautiful way the film looks in contrast to the desperation it captures, or the madam "who in any other town would be running a

Continued on Page 721

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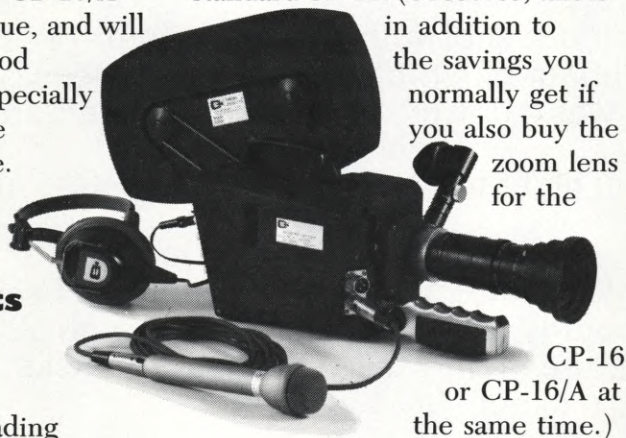
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MAKING VISIBLE "THE INVISIBLE UNIVERSE"

Making an informative public relations short on radio astronomy turns out to be fun for all — especially the crew that filmed it

By SETH SHOSTAK

Grab the average guy in the street and ask him what he knows about radio astronomy. Chances are, he'll tell you something about the daily horoscopes he hears on his transistor AM-FM. In fact, of course, radio astronomy is the scientific study of our universe using radio antennas instead of the more conventional mirror and lens telescopes with which we're all familiar. Because radio waves usually have an easier time penetrating the dust and gas clogging the space between stars, we can often "see" further into the cosmos by studying these radio emissions than we can using ordinary light. Radio astronomy is one of the newest sciences, and yet it has already taught us an enormous amount about the types of objects populating space and the early history of the universe.

To introduce this exciting new

science to the general public, the National Radio Astronomy Observatory (NRAO) recently decided to commission the production of a short public-relations film. As a staff member of the Observatory, and past producer of numerous sophomoric student films, I could hardly allow this production to be contracted out without first making my own bid. I and two fellow astronomers, Robert O'Connell and Dick Sramek, submitted a proposed film treatment and tentative budget to the Observatory. They liked the idea of an in-house production, not to mention our bare-bones budget. All systems were go, and we were in the movie biz.

The principal viewers of our film — the target audience — were to be the twenty-five thousand or so tourists who annually visit the Observatory's telescope site in Green Bank, West

Virginia. The tours, which start with the movie and end with a narrated bus trip to the telescopes, are free. Although not widely publicized, the Observatory tour has become the second-most popular tourist attraction in West Virginia. (In all fairness, however, it should be pointed out that the Observatory is but five miles from the state's number-one attraction: the Cass Scenic Railroad.)

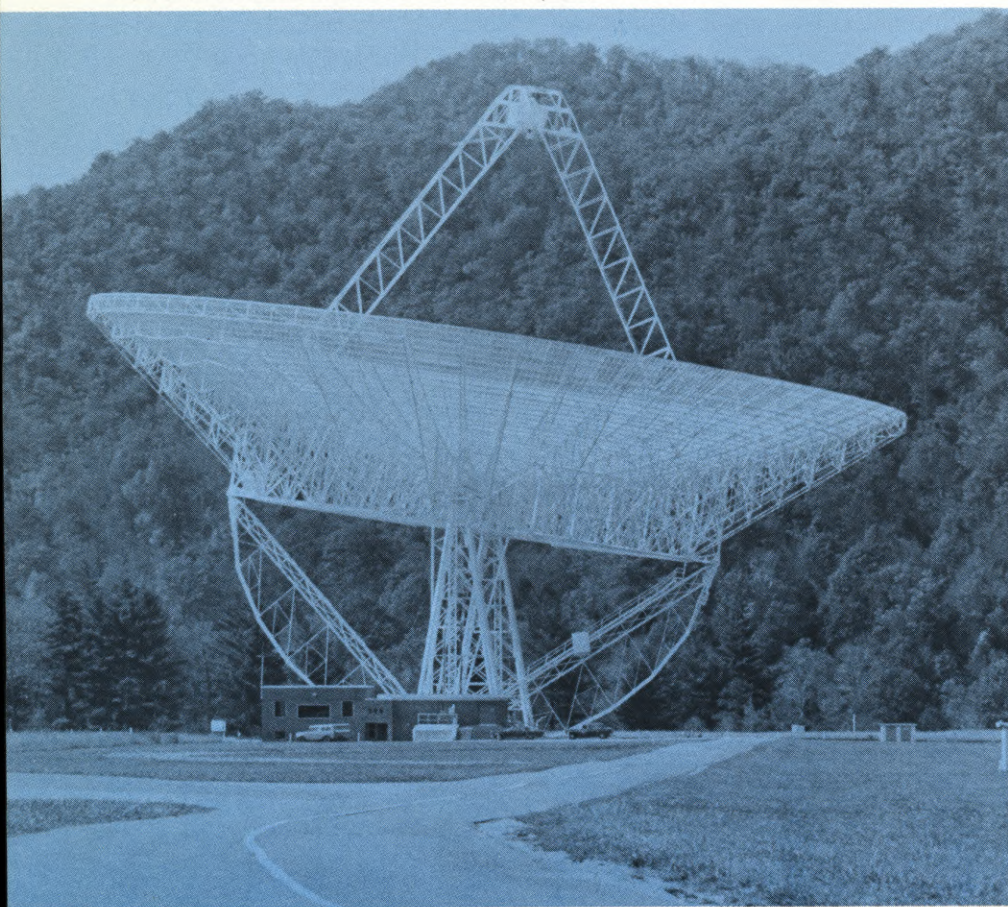
The tour is aimed at satisfying the visitors' curiosity about the huge metal antennas which sprout mushroom-like from a West Virginia valley. Beyond that, however, is the much broader aim of promoting an area of pure, basic research. Astronomy is not pursued for the usual kinds of reasons: for profit, for social welfare, for defense, etc. Instead, it is motivated by man's sheer curiosity about his world. To know where the universe came from and where it's going. Knowledge for its own sake. Our film was intended to stimulate the tourists' interest in a subject with no obvious applications or pay-offs. And to convince him that this interest is worth the tax money he pays to support it!

The audience presented its own set of problems. Road-weary, and with restless kids in tow, our viewers would be shunted into a small auditorium to see a film for which they might or might not have any interest. Their knowledge of astronomy could safely be assumed to be nil.

I have made a big point of describing the purpose and target audience of our movie. It seems extremely important to define these variables before writing the script for a sponsored film. A movie may be a cinematic showpiece, a sure-fire winner in competition — and yet utterly fail to get its message across. We're all aware of entertaining TV commercials for products we can't remember.

How were we going to "sell" astronomy? Exploring conventional approaches, we briefly considered having the Rockettes prance before the camera, holding placards which spell "NRAO" and singing "2000 Lightyears from Home". Or Raquel Welch in a filmy negligee: "Hi. I'd love to tell you about pulsars." Shunting these interesting, but implausible, schemes aside, we opted for a "gee whiz"

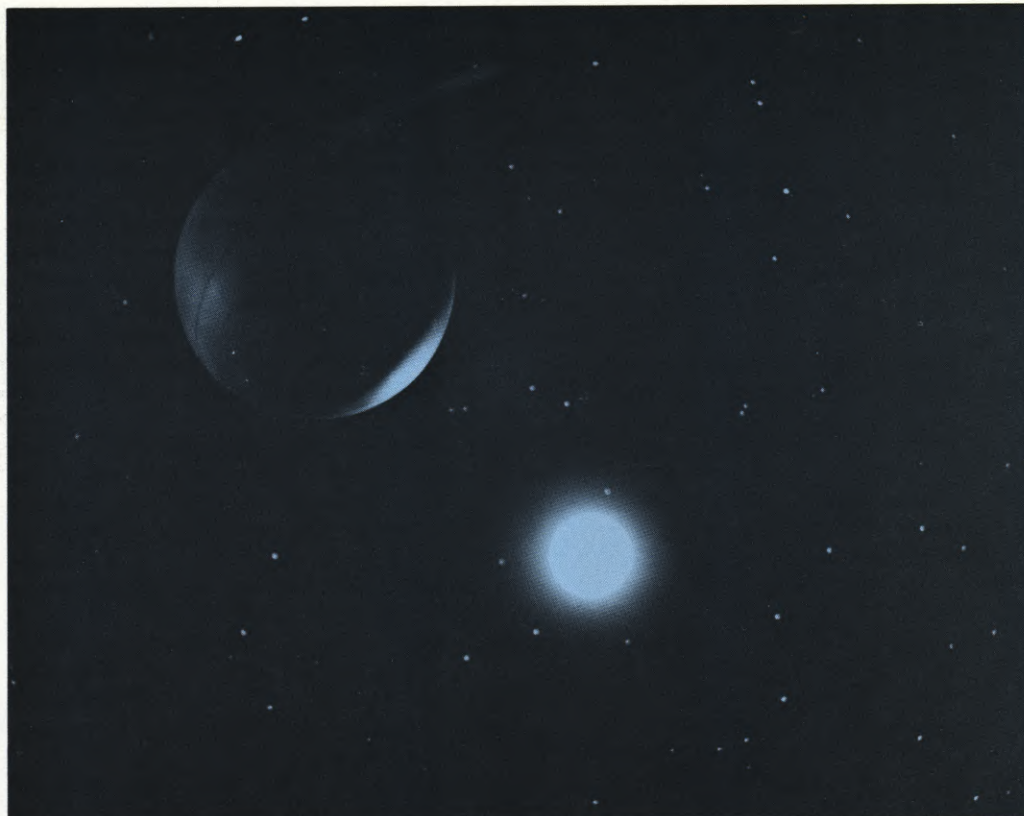
With a collecting area of almost two acres, the 300-foot antenna is the largest at the National Radio Astronomy Observatory. Painted white to prevent overheating by the sun, it tended to burn out when scene was exposed normally for the surrounding foliage. The idea of makeup was abandoned in favor of underexposing the scene one stop.



approach. We would illustrate those astronomical subjects which generate the most public interest: pulsars, quasars, life in space, etc. These are subjects everyone's heard about, but few understand. Additionally we would simply explain how a radio telescope works and why it's different from an ordinary telescope. In general, however, we wanted to avoid the didactic approach taken by so many science films. Our primary purpose was to *interest* our audience in radio astronomy, not to instruct them. And at all costs we would avoid scenes of real scientists seated at paper-strewn desks, gesturing awkwardly while explaining their latest research! We'd viewed plenty of such scenes in other films, and they made *Sominex* seem like twenty cups of coffee.

The scripting began. Taking our cue from TV melodramas, we decided to open our film with a bang: a 1930's-style mad scientist using contemporary high-voltage electronics to establish contact with the cosmos. We had in mind a scene from Universal's "INVISIBLE RAY" featuring Boris Karloff. Besides being a grabber, this opening would allow us to dramatically compare the classical movie view of science with today's modern observatory. The shift from grainy black and white to color would further emphasize the contrast, as we brought our audience quickly forward in time. With a few aerial shots to bridge the gap, we would then deposit the viewer in that verdant West Virginia valley where the telescopes grow. Using animation and time-lapse photography, we next demonstrate how these huge metal ears are tuned to faint signals from space. Then, holding "hardware" shots to a minimum, we begin our outer-space odyssey, proceeding first to the sun, then past the planets to a pulsar. In each case we dramatically show the nature of our subject — gigantic flares on the surface of the sun and stroboscopic flashes from the tiny pulsar. Thence through the dust and gas of the Milky Way, passing an alien, life-supporting planet, and then to the realm of the galaxies. We see a galaxy explode, sending huge clouds of radio-emitting gas hurtling into space. Ultimately we rush past whirling galaxies to the edge of the universe — the distant habitat of the quasars. At ever-increasing speed we plunge toward one of these mysterious objects, beacons at the limits of creation, and the screen is overwhelmed with light and shaken with sound. A resounding climax, which leaves our audience with sweat pouring down their cheeks and lumps in their throats.

Well, scripting a trip to the edge of the universe is one thing, staging it in



The planet "Voit" moves toward an eclipse of an alien sun. The planet was a small beachball from the neighborhood supermarket, painted orange with black surface markings. It was hung from the ceiling by black threads and made to rotate by means of a small DC motor. The "alien sun" was created by means of a small bulb encased in a blackened beer can. The wall-to-wall bargain basement special effects look real enough in the finished film.

front of the camera is something else. Especially given our limited resources. Let me reiterate that radio telescopes don't "see" in the conventional sense, so there's no chance of live outer-space photography. Our studios consisted of my boudoir and an empty

room in the Observatory's lab building. No special effects equipment of any kind. We anticipated contracting out some animation, but with a total budget of \$11,000, we weren't in a position to afford much artwork. Finally, thanks to Stanley Kubrick, we

(LEFT) "Intrepid" is the only word for this duo. With co-producer Bob O'Connell behind the Arriflex, director Seth Shostak elicits a sensitive, subtly emotional performance from an actor — in this case, a 140-foot-diameter antenna. (RIGHT) O'Connell checks the Bolex before zooming in on a slide of the famous Crab Nebula.



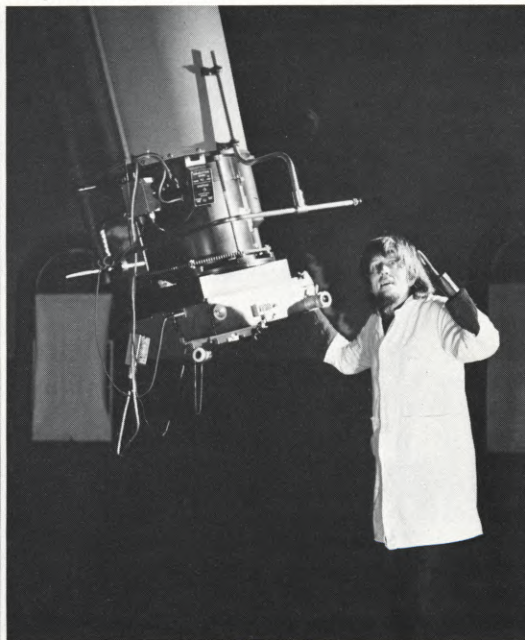
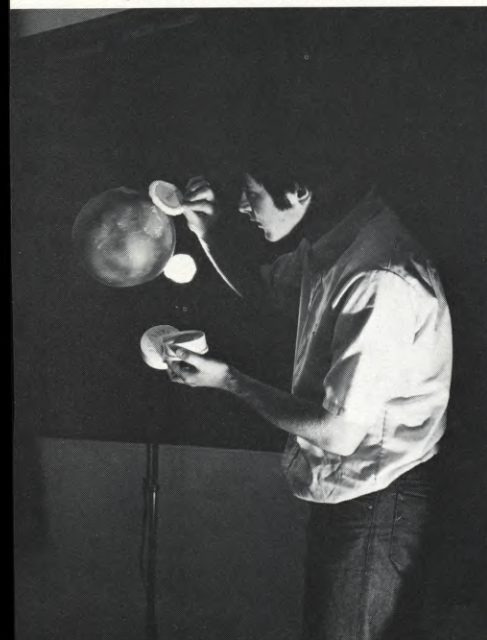


At the controls of the giant 300-foot radio telescope, the observer keeps careful logs. In addition to live photography, the filmmakers, all of them actually astronomers, used animation and time-lapse photography to demonstrate how these huge metal "ears" are turned to pick up faint signals from outer space.

knew the public wasn't going to be satisfied with cheapie-looking space photography. Against these handicaps must be balanced the considerable advantages of having the full cooperation of Observatory personnel, and very flexible deadlines.

We started with the simple stuff, footage of the Observatory, inside and out. For a while we had use of a loaner Arri S, which we used in conjunction with my trusty non-reflex Bolex. Registration tests failed to reveal any difference in footage from the two

(LEFT) Putting a little pancake makeup on planet Voit to minimize the glare of its shiny continents. (RIGHT) The obligatory mad scientist — looking madder than most — was portrayed with chilling authenticity by Bob Haas, complete with a hook for a hand. This sequence opens the film with a flashback to 1930's-style science-fiction.



cameras, and about 90% of the final film was made up of Bolex material. We shot Eastman ECO (7252) exclusively, relying on a few rented quartz lights to punch up the interiors. Great use was made of a red gel to add a "scientific" look to much of the laboratory footage. The telescopes themselves presented a problem: painted white to prevent heating by the sun, they tended to burn out if we exposed normally for the surrounding foliage. We ended up underexposing the foliage by one stop. The other problem with the telescopes was their unpredictable positions, dictated by the requirements of research and not by photographic esthetics. Patience is a wonderful virtue.

We intended to introduce the Observatory with some aerial footage. After rejecting the usual aerial camera services as beyond our budget, I finally found a Tastee-Freeze owner in Elkins, W. Va. who had a small helicopter. Taking the door off the passenger side, he flew me around the site for \$60 an hour. The gyroscopic mount consisted of my two hands, but with a 10mm lens and slight overcranking, the footage was more than tolerable.

With the live-action scenes out of the way, we faced up to the difficult two-thirds of our film: the wall-to-wall special effects. The sun and pulsar sequences included animation, so we carefully story-boarded these scenes for drawing and photography by Pilgrim Film Services of Hyattsville, Md. Whenever possible we used actual astronomical photographs for backgrounds to minimize the change in "look" when cutting from models to animation, etc. We also had Pilgrim make up about 100 feet of zooming white stars on a black background. This was done by multiple printing of camera zooms into a star field. The zooming stars were later printed on top of slow dolly shots into color astronomical photos of gas clouds and galaxies, giving a very real impression of moving through space. A good set of zooming stars is a requirement for any serious space cinematographer.

Our most ambitious model shot was of an alien planet slowly orbiting in space, ultimately occulting its own sun. The planet itself was a small beach-ball from the neighborhood supermarket, immediately dubbed planet "Voit". We had just given Voit a coat of orange paint and black surface markings when a couple of neighborhood kids stole it off the patio where it was drying. With cries of "planet thieves" we chased the kids around the block, finally recovering our lost world. Voit was hung from the bedroom ceiling by black threads and driven by a small DC motor. We had covered up the window

behind it with black posterboard which we peppered with small holes. The indirect sunlight coming through the holes made a very effective star field. By overexposing two stops above normal sunlight, the stars burned in nicely. For the alien sun, we encased a small bulb in a blackened beer can, adjusting a spotlight to provide additional illumination on the near side of the beach ball. Voit performed like a real star . . . er, planet . . . and with a little dramatic music the scene became a definite goosebumper.

Many other special effects were accomplished by optical printing. In one comic relief sequence, we have three telescopes slewing back and forth in synchronism with Offenbach's "Can-Can". Carefully planned repeated printing of about twenty frames of original were required. Black and white footage of solar flares was beefed up by printing through yellow filters onto color stock. An exploding galaxy was made up of four scenes printed together: To begin with, we photographed a background plate of our doomed galaxy. Pre-explosion flickering in the nucleus was simulated by hand-scratching the flickers onto a length of black leader. This film was then projected onto a makeshift rear-projection screen where it was photographed by the camera, thereby both increasing the flicker frequency and reducing the image size on the film. A rheostat-controlled small bulb in a dark room simulated the explosive flash. We put a piece of window screening over the lens to produce diffraction spikes. Finally, some tedious animation of two teardrop-shaped pieces of cardboard yielded the expanding gas clouds expelled by any self-respecting galaxy explosion. The effect of all four sequences printed together is, well, shattering.

The most ambitious sequence of the film is the grand finale: the fabulous rocket trip through whirling galaxies into the heart of a distant quasar. Stock footage was definitely a no-go. This cosmic first was to be documented in my bedroom. As before, we decided to build up the sequence in pieces, putting them together later on the optical printer. The quasar was shot first. Using transparent paints, we colored about 50 feet of clear leader, "programming" the art work to slowly change color and flicker frequency. This quasar film was then threaded into our projector, and the camera aimed directly at the lens thereof. A rented 12-120mm Angenieux allowed the camera to slowly zoom in on our brilliant subject. Window screening was again employed to add diffraction spikes. However, even a 10:1 zoom was not enough to produce a screen-filling



Dick Sramek, the third member of the production team, puts final touches on a galaxy created from flour and salt and mounted on a rotatable "sky" made up of a four-foot-diameter plywood disk covered with black velveteen. Filter gels in the camera provided coloration. Since Stanley Kubrick blew their cover with "2001", film-makers can no longer get by with tacky outer space effects.

quasar, so an additional 4:1 zoom was added during optical printing, yielding a total change in image size of 40:1.

The whirling galaxies posed a difficult problem. Actual telescope photos of galaxies are unsuitable for a number of reasons, not the least being that they are unavoidably cluttered with the foreground stars of our own galaxy. Artworked galaxies would likely be unrealistic and would certainly be expensive. A solution was found, however, and I urge all star-trekkers to take note: We first constructed a rotatable "sky" made up of a four-foot diameter plywood disk covered with black velveteen. A bolt through the center of the disk allowed it to turn. The galaxies

were fashioned on this sky, and a frame at a time the lens was zoomed as the disk was turned. Colored gels in the camera gave appropriate tints to our cosmic creations. The galaxies themselves? Common ingredients found in every kitchen: salt and flour. A handful of salt was used to outline the galaxies, and flour makes grand interstellar gas and dust. Even the least artistically inclined (a category which includes the author) are capable of making expert-looking galaxies with the ol' southern recipe given here.

As we finished the outer space footage, it came time to deal with the problem of our 1930's intro. We photo-

Continued on Page 704



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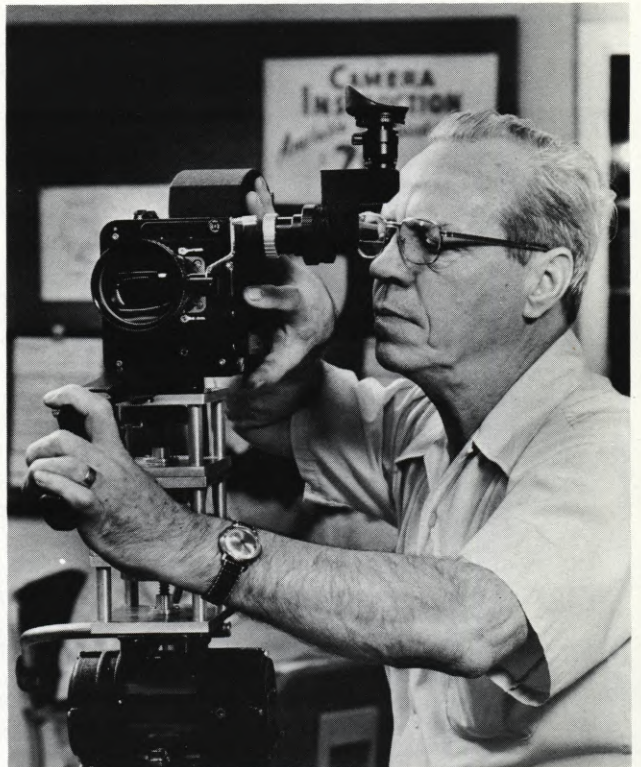
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BEHIND THE SCENES

Continued from Page 653

the construction of the set with two engineers in attendance masterminding the collapse, which was filmed in three sections.

Outside locations include Frank Lloyd Wright's "Mayan House" in the Los Feliz section of Los Angeles, which is used as Claude Estee's mansion, an overripe art nouveau fantasy of a house once owned by Gypsy Rose Lee, which is the site of Audrey Jennings' bordello, Inglewood Park Cemetery and the Hollywood Palladium, a faded art deco dance palace on Sunset Boulevard which is where Schlesinger filmed Big Sister's faith healing revival for the better part of a week.

Production had been underway for two months when Hellman and Schlesinger finally had to grapple with the complexities of how and where they would film the final riot sequence which takes place on Hollywood Boulevard outside a theatre West had patterned on Grauman's Chinese.

MacDonald had been scouting possible locations from the beginning and his office was plastered with photographs of period theatres and theatre marquees. None really worked. There was talk of filming the sequence in two sections; one in front of an actual period theatre — perhaps even Grauman's — showing the arrival of the crowd and another, the actual riot, which would be filmed somewhere else at another time. They were less than six weeks away from filming the scene when they arrived at a decision. They would, Hellman told MacDonald and Lloyd one chilly January morning, film "the whole bloody thing" inside the Paramount lot. "Can you imagine trying to control 1,000 extras for three weeks of night shooting on Hollywood Boulevard?" Hellman said later. "We were crazy to even consider the idea. Filming inside was the only solution and, as it turned out, the best."

MacDonald used three adjoining sound stages on which to build his set, which is a three-block reconstruction of Hollywood Boulevard as it looked in March of 1939. He re-created the facade and marquee of Grauman's as well as its famed forecourt of footprints which was carefully matched to a newspaper photo dating from the late 1930's.

The scene took 14 days to film, cost close to \$1,000,000 and employed 1,000 extras, many of whom had been spotted on the streets by assistant directors who had spent days on scouting expeditions around Hollywood in search of the proper "Locust" faces. Since most of the roster of the Screen Extras Guild had been employed on the film at one point or another during the length of production, the union offered a special dispensation which allowed Hellman to engage non-professionals for the final scenes. Seasoned Hollywood bit players, some of whom had been doing extra work during the silent days, mixed with novices. Off-set, during breaks, there was a carnival air as the crowd spilled out of the sound stages to wander the Paramount Studio street. "There is something about life imitating art which is always more than a trifle unsettling," noted one British journalist watching the hordes of grimly-dressed performers converging on the Paramount commissary one day. "These, my dear, are the 'Locusts,' the people West talks about in his book. There's very little acting going on in there," he continued, pointing to the sound stage where the crowd had just quite terrifyingly enacted one of the more bloody parts of the riot.

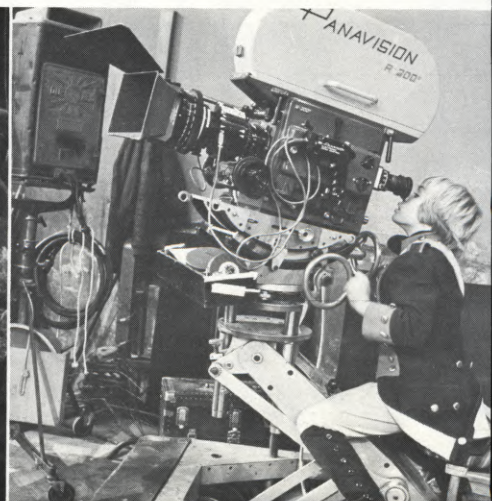
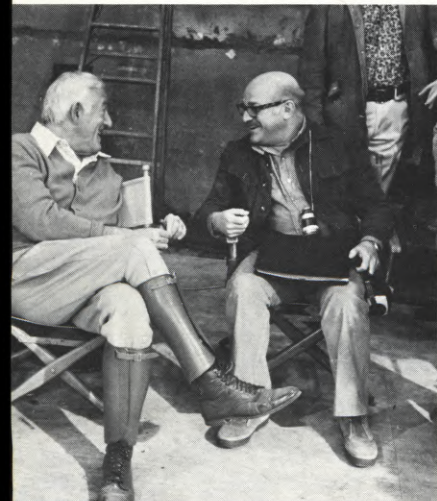
Word soon got out that something fairly spectacular was going on at Paramount. During the course of filming the scene, a number of celebrated figures came by to observe: George Cukor, Roman Polanski, Christopher Isherwood, Ray Bradbury, Milos Forman, Jack Benny, Gloria Swanson and Mae West among them. Miss West, who

arrived dressed in a floor-length canary yellow coat accompanied by two sturdy-looking gentlemen friends, came by towards the end of the sequence when the facade of Grauman's had already been burned and the crowd was in the throes of enacting the last, desperate paroxysms of their frenzy. "Kind of like the old days," she said to Schlesinger, casting a cool eye on the proceedings, "but I sure wouldn't like to be in the middle of *that* group of fans."

Near the end of filming, Schlesinger, surrounded by the carnage of the final sequence, sat quietly in the middle of the vast sound stage talking to a group of journalists.

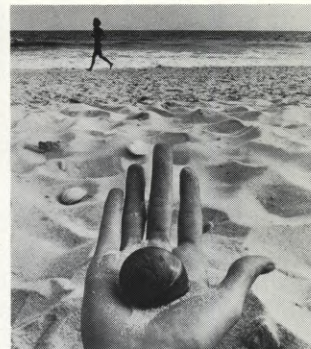
"It's been a journey," he said. "I've wanted to do this film for close to five years and it was fiendishly difficult to get them to believe that it could be done. Everyone was frightened of it for one reason or another. The book's a modern American classic of sorts, which makes people distrustful. Only one adaptation of a classic novel has to fail and however different yours may be from others on the stocks, the studios will be wary. Then, the book is felt to be pessimistic, negative and, of course, some kind of subversive anti-Hollywood tract. It is a dark work — savage and hard-edged, yet I didn't (nor did Jerry or Waldo) subscribe totally to the point of view that it is depressing. I see some hope in the book. I see people who cling stubbornly and tenaciously to their dreams and I like that, I always have. I see characters who are resilient and, in their way, quite brave. They cope and carry on, and, after all, isn't that what much of life is all about? And there is value to what Tod goes through in the story. Even in the cataclysmic end of the film, all the pieces fall apart and yet come together again like a jigsaw puzzle in his head. He survives it — the whole of his Hollywood experience — by transmuting it into his art, just as West did in writing his book." ■

(LEFT) A bit of type-casting was indulged in when real-life film director William Castle was assigned to play the role of a Hollywood director of the 1930's. He chats with John Schlesinger between set-ups. (CENTER) On the battlefield set, Schlesinger gives direction to one of the soldiers who will soon be battling before the camera. (RIGHT) A young would-be cameraman, who plays a drummer boy in the Battle of Waterloo sequence, can't resist taking a peek through the viewfinder of the Panavision R-200 camera.



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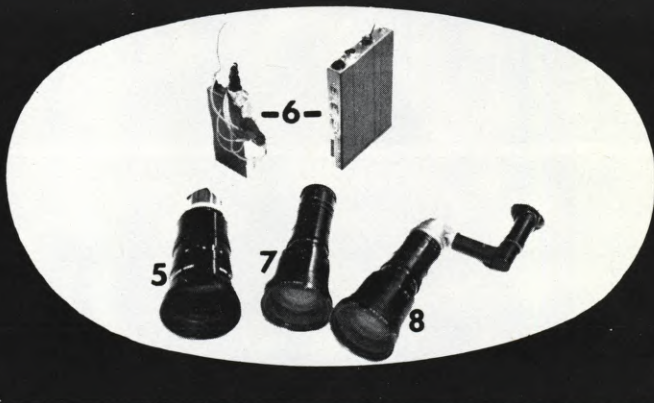
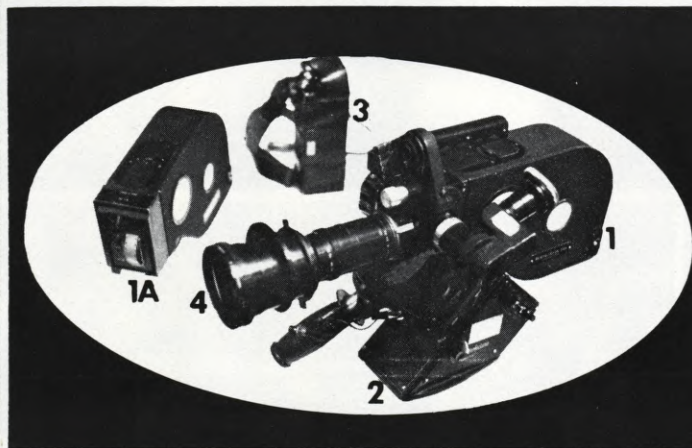
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FILMING THE BIRDS AND BEES DOING IT

A macro-cinematographer zeroes in on that astounding world where tiny creatures seek each other, breed and/or battle to the death

By **GEORGE D. DODGE**

During production of the documentary film, *BIRDS DO IT, BEES DO IT*, at Wolper Pictures in Los Angeles, my partner, Dale Thompson, and I were contacted by associate producers Malcolm Leo and Alex Pomisonoff. This resulted in an interview with the

producers of the film, Irwin Rosten and Nicolas Noxon of Ronox Productions. Apart from our experience in photographing wildlife, it was of special interest to Nick and Irwin that we also had backgrounds in taxidermy, where we had developed our talents at set and

prop construction. We had also been animal keepers at the Los Angeles Zoo where we learned to work with various animals. We were to utilize these skills and knowledge in the filming we did for *BIRDS DO IT, BEES DO IT*. As we talked to Nick and Irwin, we also

(TOP LEFT) The author trains his Beaulieu R-16 camera on one of the tiny, elusive subjects he and his partner were contracted to film for "BIRDS DO IT, BEES DO IT", a David L. Wolper Presentation for Columbia Pictures release. **(RIGHT)** Dodge takes a meter reading in the depths of his garden, where many of his diminutive subjects live. **(BOTTOM LEFT)** A common American land snail, subject of a fascinating sequence, glides lazily along a leaf. A true hermaphrodite, it possesses full male and female sex characteristics. **(RIGHT)** Dodge places snails "on the set" — an aquarium, the floor of which was covered with dichondra.





(LEFT) Driven by powerful instincts which require that its fertilized egg must be deposited on the body of a live, but paralyzed, tarantula, the female pepsis wasp approached its huge adversary for a Battle to the Death. (RIGHT) The wasp stands with stinger poised for the final thrust. Its powerful venom will paralyze the tarantula so that the newly hatched wasp larva can feed off its still-live body.



(LEFT) A male praying mantis freezes dead still on a branch, while in the process of gingerly approaching a prospective female for mating purposes. His caution is well-motivated because if he gets slightly off position while mating, his voracious mate will literally eat him alive. (RIGHT) The powerful jaws of the female praying mantis are obvious in this photo. During the mating shown in the film, she chews the male's head off, while he continues to copulate, driven by urgent reflex. (Photographs by DALE THOMPSON and GEORGE D. DODGE.)



became aware of the very high standards adhered to in the films they produce.

A contract was awarded to us as a result of the interview, accompanied by the realization that the work ahead would not be easy. On the other hand, it would not be work in the strictest sense of the word, because we love involvement with animals and the filming of their behavior.

The film is centered around the courtship, breeding, and birth of various animals. Those we worked with were: honey bees, American land snails, praying mantises, orb weaver spiders, green bottle flies, white laboratory mice, pepsis wasps, living mouse fetuses, and others.

I must state that it was a great benefit to me to have had the understanding and help of my beloved wife, Ana, during the shooting of these sequences. She did everything from handling snails, wasps, tarantulas, and praying mantises to tolerating bees fly-

ing all through the house and baby praying mantises running over the floor and walls. She even helped with the camera equipment itself. Rarely did she utter a complaint at the obvious inconvenience some of these things caused. She truly makes my life complete.

The film used was Ektachrome Commercial ECO 7252 16mm, which was later blown up to 35mm for release to the theaters. We arrived at the decision to use this film exclusively because of its good color and exceptional ability to be blown up with very little loss of quality. The film is balanced for 3200° K with an ASA of 25. This creates an obvious problem, because in macro-photography one needs as much depth of field as possible. In some extreme closeups, even when utilizing the smallest aperture, the depth of field isn't any greater than 1/16th of an inch.

The equipment used varied from sequence to sequence, but basically

consisted of a Miller tripod, a Beaulieu R-16 Camera, Angenieux 12-120 zoom lens, a Killfit Macro Kilar 40mm lens, a Leicaflex macro 100mm lens, a Spectra Combi light meter, various diopters for the Angenieux, two 2000-watt lamps, and one 1000-watt lamp.

Our first assignment was to film the courtship, breeding, egg laying, and hatching of the common American land snail. Of course, the filming of each type of animal was a learning experience, not only in refined techniques, but in animal behavior — and this was no exception. Through our research we learned that this snail is hermaphroditic. We acquired information on how to distinguish between mature and immature individuals, what to feed them to maintain their health, and the temperature and humidity needed to trigger breeding and egg laying.

What we also learned, to our dismay, was that snails are very susceptible to heat and light. To maintain an appropriate depth of field, the lamps

had to be approximately 2 feet from the snails which obviously could not tolerate the heat created by two 2000-watt lamps at such close proximity. Therefore, a method had to be devised to keep the heat from the snails. After checking around with people who had confronted similar problems, I devised a system which involved water slides constructed of plexiglass and pyrex glass. They are mounted in front of the lights and involve a system of circulating water. The heat of each lamp had to pass through pyrex glass and approximately two gallons of water before reaching the subject. Utilizing this system, it is possible to hold your hand approximately 10 inches in front of the 2000-watt lamps and feel practically no heat at all.

This solved the problem of the heat, but what about the light? Invariably, when the snails were positioned on the set and the lights turned on, they would abruptly turn around and move away from the lights in opposite directions. There were many feet of film wasted as the snails would start out "doing their thing" and then turn to show the rear of their shells as they crawled away from the camera and lights. Only by carefully positioning the lights and the camera and moving the set, were we finally able to photograph them.

Persuading snails to actually copulate in front of the camera was not so easy either. The snails were put in an aquarium — the floor of which was covered with dichondra — with lights and camera positioned around it. When two snails were noticed approaching each other, the lid of the aquarium was removed and the filming started. In most cases, even though the snails had physically touched, when the lights were turned on they would immediately change their behavior. Finally, after many days of frustration, a pair of large snails got involved with each other and when the lights went on, they still continued their courtship. As the camera ran, the actual mating took place and was captured for the first time on film. Since the sexual organs are located on the right side of the neck, the camera had to be positioned high so that we could shoot down and see the actual copulation. It was a beautiful, sensuous mating, lasting about an hour. At the end, the camera was positioned at a very low angle to capture the parting of their bodies.

The next step was filming the egg laying. Several of the snails that had been observed mating were put in an aquarium with a moist earth bottom. Because they dig and bury their eggs, we just sat back watching and hoping that one of them would dig next to the glass. Eventually one did and was cap-

tured on film as the eggs emerged from the same opening in the side of the neck where mating took place.

As the end of the incubation period neared, the thin walls of the eggs began to grow transparent and through macro-photography, the pulsing of the baby snails could be seen within the shells. The baby snails emerged from their eggs pure white and super-sensitive to light and heat, and yet we managed to capture them on film, bringing to a close our sequence involving the American land snail.

At this time, Dale received another assignment, but was still able to help me with the filming periodically.

The water slides worked out so well that I continued to use them throughout any filming which involved small creatures or insects susceptible to heat.

Another sequence assigned to us was the courtship, mating, egg laying, and hatching of the praying mantis. First, I had to go into the field to collect specimens, and upon my return, I had in my possession approximately one dozen males and one dozen females. These were each put in individually-marked containers. The praying mantis is of great benefit to mankind because it feeds upon other insects and even its own kind. These insects had to be fed and cared for daily as the days and the weeks went by that were necessary for filming the sequences.

There is one particular part of the praying mantis courtship that I was hoping to photograph — it was known by entomologists to occur, but had never before been captured on film. Occasionally, when the male praying mantis is mounted on the back of the female, and is copulating with her, he loses his balance or maneuvers into an awkward position and she will grasp him and begin eating him then and there. Obtaining pictures of this happening was by no means easy.

After a small set was built, the first and major step was to get the praying mantis to mate. A female mantis was put on a small limb which was placed on the set for her, and then a male was put several inches away from the female. A praying mantis has reasonably good eyesight, but only when it can detect movement. Therefore, the male praying mantis, being a potential dinner, uses great caution in beginning his approach. If the female turns or looks towards him in any way, he will instantly freeze and may stay in that position for up to an hour or more. This called for a great deal of patience as I sat behind the camera waiting for the male to accomplish his mission. In too many cases to mention, he would get near enough to the female to touch her,

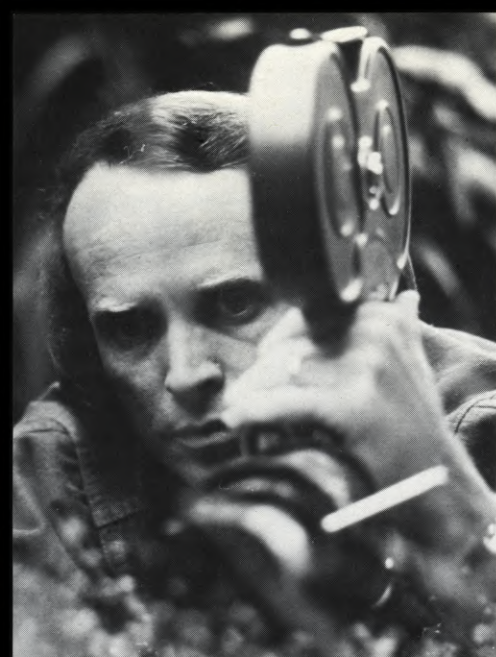
then would turn aside quickly and fly away into the room. But several matings were filmed where the male jumped onto the female's back and held onto her as they mated. When he completed his task, he just let go and fell to the floor out of her reach. In many instances, this is the way it happens in nature. Finally, one of the males got in an awkward position during copulation and the female swung around and began to eat him, as the film hummed through the camera.

After many sleepless nights had been spent watching the females for the first signs of egg laying, the laying of praying mantis eggs was finally filmed.

The hatching of the eggs came next, but this involved several months of incubation. During this period, the eggs were placed in open jars, in the den of my home, where all this filming was taking place. I had spent approximately three days in the desert north of Los Angeles running around with a net collecting pepsis wasps for the next sequence of BIRDS DO IT, BEES DO IT. When I returned from the trip, I walked into the house and found my wife laughing and pointing around the living room and kitchen. It seems that just the night before, the egg cases of the praying mantis had hatched, and there were now hundreds of miniature praying mantises on top of the television set, on the picture frames on the wall, on the kitchen sink, and in fact — just everywhere. They are harmless, and since it was impossible to gather them all up, we just resigned ourselves to the fact that they would all starve to death in a matter of a couple of days.

When filming the praying mantis sequence, I used principally two lenses, the Angenieux 12-120 zoom and the Leicaflex 100mm macro. When using the Leicaflex macro lens with the bellows, I had to get relatively close to the praying mantis, sometimes only inches away, but this did not seem to disturb the insects to any great extent. What was difficult was to keep them from flying to me and using the lens as a perch to sit on. I really don't know what they were trying to do on top of my lens, unless they were trying to read the focus gauge to see if they were properly in focus. I mean, after all, what kind of a respectable praying mantis would do his thing in front of the camera if he's out of focus?

Next in line was the life cycle of the pepsis wasp. This is a large solitary wasp with a beautiful blue-black body and orange wings. I had collected several dozen of them, mostly female, because it is the female that goes through the ritual involving the propagation of her species. After the mating



With infinite patience, George Dodge lies in wait for his tiny "actors" to move into filming position. He loves all these diminutive denizens of nature, no matter how unlovable they may seem to others.

was filmed on some flowering desert plants, the real problems began. The common name for the pepsis wasp is "Tarantula Hawk", because the wasp must seek out and find a tarantula which it must battle to the death. Either it will die under the powerful venomous bite of the tarantula, or the tarantula will suffer the paralyzing sting of the wasp.

A set was built which incorporated a dirt floor, with a hole in the center simulating the tarantula's home and with various desert plants and rocks placed about it.

The battle was filmed with the Angenieux and the Leicaflex again. I began with the Angenieux 12-120 with the addition of a +1 diopter. The tarantula was placed in the hole and a female wasp would be introduced onto the set with the aid of a long pair of tweezers, for the sting of this wasp is extremely painful. Even though it was an open set, most of the wasps stayed on it and crawled about investigating and searching. Some did take off, however, and flew about the house. They are such large insects and have such a powerful wing beat that they sounded like miniature drone airplanes as they flew through the air. My wife and I knew there was no real danger, even when they landed on us, as long as they were not molested. Yet, since it was summer, and I often worked in my bare feet, it became hopscotch time on several occasions when one would land on the floor and be walking about the tripod investigating her surroundings.

Probably nine out of ten wasps were either immature or the set was not to their liking because when they noticed the tarantula, they would go into a

panic and fly frantically off the set and around the room. Eventually, through trial and error, several aggressive females were sorted out. These were used for the majority of the filming. The battle between the wasp and tarantula got under way. When using the Leicaflex 100mm macro lens it was extremely difficult to keep the wasp and tarantula in focus as they ran furiously about the set.

The inevitable ending of the battle was a vanquished tarantula. It was not dead, but paralyzed by the sting of the wasp. The two animals were then removed and put in a dark container holding moist soil, for only under these conditions would the wasp dig its hole, pull the tarantula down onto it, lay the single egg on the body of the paralyzed spider, and then bury it. This took all night. The next morning I removed the wasp and dug out the tarantula very carefully. There, stuck to the side of the tarantula's abdomen was a very small, shiny, white egg, about half the size of a grain of rice. I built an artificial tunnel which would show a cut-away view of the tarantula's hole and the chamber below. The tarantula with the egg on its side had to be kept in a dark, moist container and could only be put on the set during the few moments of filming that had to be done each day to show the progressive growth and development of the pepsis wasp larva. To get a good closeup of the egg, the tarantula had to be placed in the cutaway view of the tunnel, the two 2000-watt lights with water slides brought very close to its body, and the Leicaflex macro lens and bellows, in combination with all the extension tubes, had to be utilized. With the use of so many extension tubes, plus the bellows, extra braces and brackets had to be devised and made to secure the lens to the camera. The shot was made and was very satisfactory.

As the wasp larva grew, it consumed the fluids and flesh of its host and with the aid of the macro lens, the fluids could actually be seen pumping into the body of the larva. The larva could be disturbed for only a few minutes each day as the progressive steps of its development were filmed. The day arrived when the larva, after consuming 90 percent of the tarantula, finally spun its cocoon. The hatching of the cocoon was eventually filmed as the adult pepsis wasp emerged from the ground to start the whole life cycle all over again.

As the filming of this particular sequence took several months, the care and feeding of these animals could obviously not be overlooked. The tarantulas were easy to feed, for they would eat any insect that I could secure from the garden. The pepsis wasps were

another story, as they feed upon the nectar of flowers. After doing the proper research and talking to the right people, I was able to devise a fluid mixture on which they thrived for the duration of their captivity.

On several occasions, during the filming of *BIRDS DO IT, BEES DO IT*, insects had to be filmed within the confines of an aquarium. If dirt was utilized as part of the set, the insect or small animal, just by walking about, would kick up enough dust to adhere to the glass and either cut down the vision or cause the glass to show up. Therefore, the glass had to be cleaned right down to the dirt line between each individual shot. Both sides of the front pane of glass, both sides of the back, and — if the lamps were positioned to throw the light from the side — both sides of the aquarium had to be cleaned also. Therefore, I'm sure you can appreciate the great amounts of Windex, paper towels, and lint-free cloth that were utilized.

One of the shortest segments in the film, and yet one of the most time-consuming to make, was that involving the green bottle fly hatching from the pupa which had been formed by the fly larva, or maggot. This segment was to go on the end of an already-acquired length of time-lapse footage involving the consumption of a mouse by maggots. So I set out to record on film the end of the life-cycle where the maggot would finally emerge from the pupa as the adult fly.

First, the maggots had to be obtained. This was done by setting rotten meat in containers outdoors; flies would land on the meat and lay their eggs. The eggs would hatch and the maggots would begin to consume the meat. When the maggots reached full size, they would encase themselves in the pupal skin. We were now at the stage where the filming would begin. A small set was built to try and match the surface and surroundings in the previous time-lapse sequence that this segment of film was to follow. The number of pupae now available were in the thousands. When the time for hatching drew nearer, these were placed on the set where the mass of them was so dense they covered the surface like a thick blanket of brown rice. As the flies began to hatch, the ends of the pupae would pop off and the flies would squirm to free themselves from the hard casings.

Some flies would free themselves from the casings faster than others and this became a problem, since most flies that I focused on emerged from the pupae entirely too slowly, and this event would last much too long on the

Continued on Page 710

COMPARISONS OF 7247 16mm COLOR NEGATIVE WITH 7252 (ECO) STOCK

By DAVID CALLOWAY

A new Eastman color film has excited many filmmakers with its wide versatility and promise of technical superiority, especially in the 16mm format. It's been more than a year (Feb. 1974) since Eastman introduced the fine-grained, medium-speed color negative stock, Eastman Color Negative II (ECNII), 7247 and 5247, replacing 7254 and 5254. Though still available in 35mm, 54 has been discontinued in 16mm and is no longer available from Eastman.

"7247 is the result of a never-ending program of technical improvement," says Fred Godfrey, Eastman's Sales and Engineering Representative in Hollywood. "Its development was interrelated with that of Kodacolor II."

Though constantly improving, Eastman's negative color chemistries basically had not changed since 1951.

"The old system had leveled off in terms of continuing improvements," added Godfrey. "Now we can see other improvements in the future." One nice thing: the new chemistry puts less pollutants into the environment.

The new chemical process is a shorter one for the labs. The approximately 20-minute processing time for 47 is half that of 54. This has been accomplished in part through the use of a high-temperature (106°F) process, greatly shortening wet time. To handle the new chemistry, labs have installed expensive, sophisticated equipment. Consolidated Film Industries, for instance, has invested \$350,000 in new processors.

What about those of us who have to use the new film? For 35mm production, the new stock means relatively little change. The 47's purchase price is the same, though its lab costs are slightly higher. The 47's finer grain and increased resolution (see tests) hold little advantage to the 35mm producer, for whom 54 was already sufficient.

In terms of technical or broadcast quality, there is no substitute for 35mm. But the improved and very acceptable quality of 7247 has attracted the interest of television producers. An excellent reason for this is the lower costs involved with 16mm. Wolper Productions, on their six-part one-hour series about Lincoln, saved \$100,000 on film and lab expenses.

What does the new stock mean for other areas of 16mm film production, like industrials, documentaries, and features? How does this new film compare to Eastman's reversal workhorse, Ektachrome Commercial (ECO) 7252?

To help answer these questions, Mark Griffiths, David Fein, and I shot a series of comparison tests with 7247, 7254, and 7252. The tests of the 54 are academic now that Eastman has discontinued the old stock, but it is interesting to take a look at the resolution and contrast comparisons.

Armed with film generously supplied by Herb Lightman, Editor of the *American Cinematographer*, equipment loaned us by Derek Scott, Director of the Motion Picture Technical Office at UCLA, and processing donated by Sid Solow, President of Consolidated Film Industries, we set about the task of photographing the tests. We used an Arri 16S, shooting all the tests with the same camera and 25mm lens. All the stocks were rated at Eastman's recommended ASA and exposed at 24 frames per second. In addition, all the tests went through an internegative stage. The two negative stocks went through color reversal internegatives.

Careful tests shot of the same scenes would tend to indicate that the new Eastman 16mm color negative (7247) is superior to the old 7254 and ECO 7252 in almost every significant respect

This was done to get an accurate representation of release print quality. The resolution tests were photographed at the same f-stop (f/5.6), with the use of a two-stop (ND6) neutral density filter with the negative stocks.

What about scratches? Many people seem to think negative original is dangerous because they've heard that it scratches if you breathe on it, and that dust jumps on it never to let go. It is true that negative is softer than reversal, but the difference in practical terms is not great. Keeping the camera equipment clean is a must, and here there is no room for sloppiness. The same holds true for handling the film. Cinching a roll of original is asking for trouble. I recommend that you always have your A&B rolls cleaned before printing them. Dust on the original shows up as white spots on the print, to say nothing of the chance of scratching your originals each time they go through the printer.

Negative film is more expensive than reversal to buy, develop, and print, and the lab costs of the 47 are a little bit higher than the 54. This cost difference is even greater when compared to reversal stocks. You do get more for your money, however. With 47 there is more correctability, both for density and color. That can mean a great deal of money saved in retakes, as well as superior image quality. Higher costs for the 47 are reflective of the new investments the labs have made in equipment. Answer print prices are high for negative, two or three times higher than for reversal. They are related to the low volume of 16mm negative and the footage prices established for 35mm. Perhaps the labs will be able to lower 16mm prices when volume increases.

If you're considering blow-up capability, 47 is very acceptable in terms of commercial quality. Again, there is no substitute for a 35mm original, but I have seen 16mm-to-35mm blow-ups from 47 that are superior to 52 blow-ups. This of course, brings up Super-16. My bet is that we'll see increasing use of Super-16 for low-budget features. 47 employs both the fine-grain advantages of 52 and the speed and reproductive quality of negative.

Pushing is a problem with 47, because the three emulsion layers have different and separate shifts in their density and contrast when pushed. It's such a problem that most labs don't recommend it. If you underexpose one stop, you get a better image if you develop normally and correct in the printing, rather than push the camera original. If you underexpose two stops, you should push one stop and print the other. Otherwise you may wind up with an uncorrectable image. Most labs will not guarantee the quality of film pushed more than one stop.

47 has an approximately two-stop wider exposure range than the 52. The new film is invaluable in a documentary situation where sudden shifts in exposure are a problem.

Titles are another area of difference. If they are superimposed when printing from a negative original, black titles are the result. To get white titles, negative must be put through an optical printer or a master positive stage.

How does the 47 rate overall? As with every other film, it's not perfect. As with every new tool, it takes learning to use it properly. 47's fine grain, wide exposure latitude, two-stop exposure advantage, and pleasing color rendition make it my first choice for reproductive quality. ■

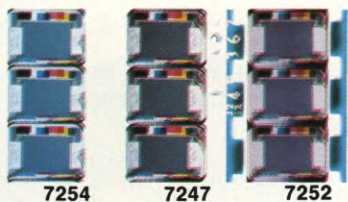


FIGURE 1 — Color Bars — Notice the brighter, more saturated colors of the 7247 stock. The 7252 looks flat and dull, almost dingy. The 7247 and 7254 both display the ability of negative stocks to produce a snappier image with more pleasing color rendition.

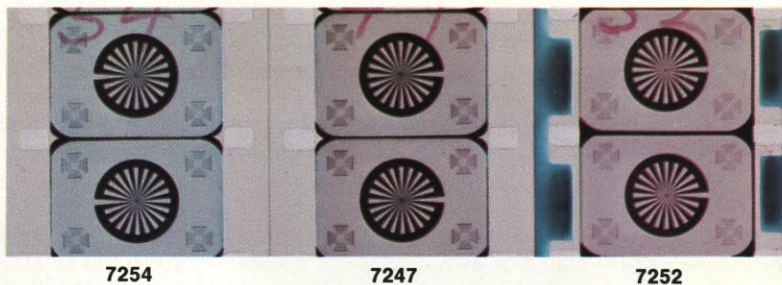


FIGURE 2 — Resolution — As can be seen, the 7247 is a vast improvement over the 7254 and it compares easily with the 7252. Grain structure is slightly more apparent in the 7247 than in the 7252, but is no larger. The acuity of the 7247 would appear to be better than that of the 7252.



FIGURE 3 — Contrast — These groups of clips were photographed at four key-to-fill ratios (left to right) 2:1, 4:1, 8:1, 16:1. The 7247 has better shadow detail than the 7252, but has higher inherent contrast than the 7254. For those used to working with 7254, the new stock means using more fill-light. It was found in testing that a key-to-fill ratio of 3:1 works well for projection contrast prints.



FIGURE 4 — Day Exterior — In both of these examples, notice the greater shadow-detail of the 7247. Increased saturation of the blues and greens becomes very apparent in the overcast day comparison. The 7247 indicated a tendency to flare when the subject is strongly back-lit. The 7247 also tends to lose detail in the highlights a bit more easily than did the 7254, but not to a significant degree.

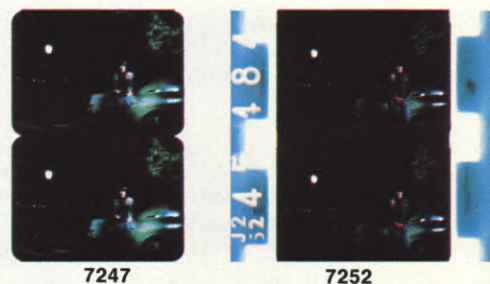


FIGURE 5 — Night Exterior — Here's where the new negative pays off. The 7247's extra two stops in ASA rating means smaller lighting instruments and lower power requirements for the same effect. Again, notice the improved image quality. You can simply see more of the scene with the 7247 than with the 7252, using the same amount of light.

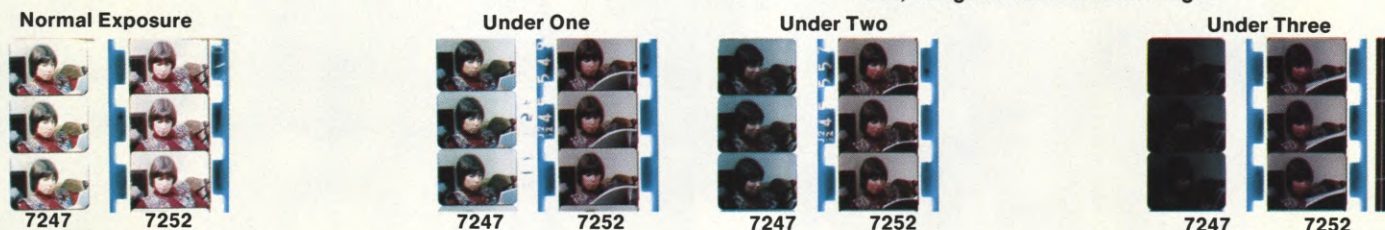


FIGURE 6 — Underexposure — The 7247 is difficult to push, and this called for a closer examination of what happens when it is underexposed. The 7247 handles one stop under with few problems. At two stops there is a noticeable color shift. At three stops the shadows are blocked up. The shadow problem is pretty much the same for the 7252, but the color shift doesn't seem as severe.



FIGURE 7 — Street Scene — The two-stop advantage of 7247 is perhaps the greatest difference between the two stocks. To dramatize this difference, a street scene was shot at night with only the available light of the street lamps, exposing at 24 fps, 100 ASA and F/1.5. The street lamps themselves were the only visible image on the 7252 (so this strip isn't even shown).

Comparisons in a nutshell:

7247	7252
100 ASA	25 ASA
fine grain	fine grain
very good shadow detail	good shadow detail
lab costs higher	lower lab costs
greater color saturation, particularly blue and green	muted color saturation
wider exposure latitude	less exposure latitude
excellent blow-up	good blow-up
bright, snappy image	duller image
very good resolution	very good resolution

"MAN IN THE GLASS BOOTH"
Continued from Page 665

QUESTION: If you were that short of light, wouldn't it have been wise to break the action into pieces and use the one arc to cover the particular angle being shot?

LEAVITT: Yes — provided that the director would have gone along with that style of shooting. But Arthur Hiller preferred a style that was just the opposite. He liked to tie several camera angles together in one continuous shot, instead of cutting. He would use pans or dolly moves to tie these together and eventually you would pan from a white sky to a blue sky, then around to a part of the set that was really black and so cramped that there was no place to set lights. That's why I needed *Brutes*. I knew that I would have to contend with this problem and I wanted to be able to mount *Brutes* up high and farther away, in order to pump light into the black part of the set.

QUESTION: Did you shoot any interiors on location?

LEAVITT: No interiors, but we did shoot

a rather interesting composite location-studio scene that ended up as an interior. One of the main sets is the penthouse in New York where the principal character lives. It's on top of a building on Central Park West. The interior for this set was built on the sound stage in Hollywood and there was a tremendous backing of the Central Park section of New York that could be seen through the windows of the set. We started with an actual location shot made in New York from the terrace of the real penthouse. It started with an angle shooting past somebody to show the panorama of the city. Then the camera swung around until it was on the outside of the closed doors leading into the penthouse. At that point it was pieced in by something like a dissolve (but not a dissolve) to a shot of the outside of the identical closed doors of the set built in Hollywood. The camera moves on into the room and swings around to follow the action of Maximilian Schell and the other actors, until it is eventually facing back toward the doors through which it came in. So, what you have, in effect, is an almost 360° turn from the outside to the inside and all around the room — but it is actually a composite of the location exterior and the studio interior

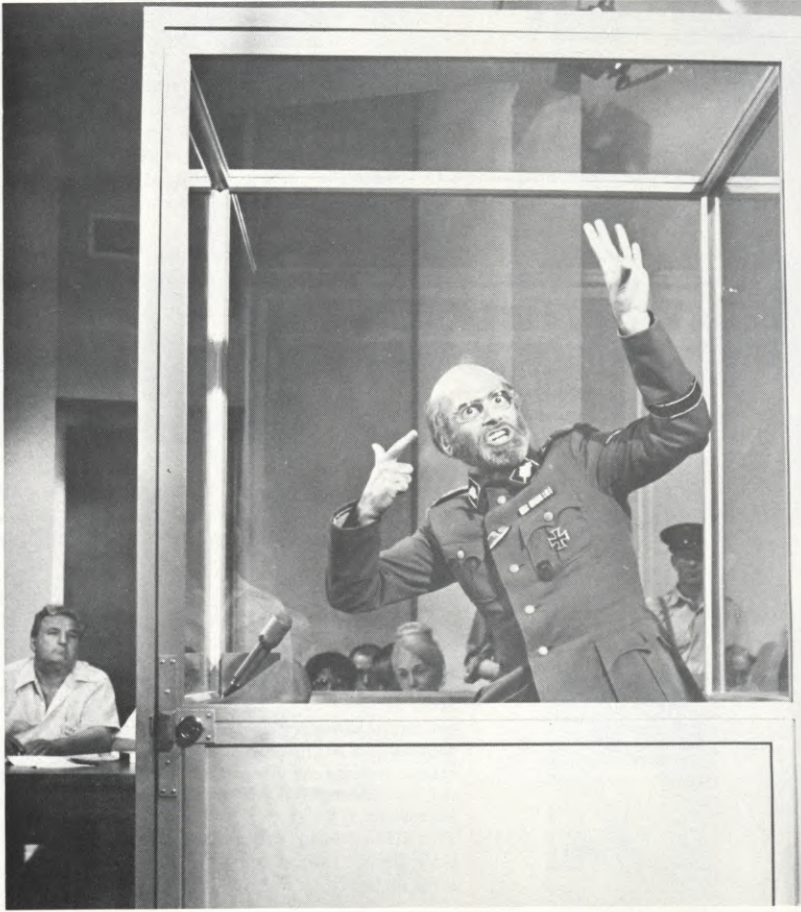
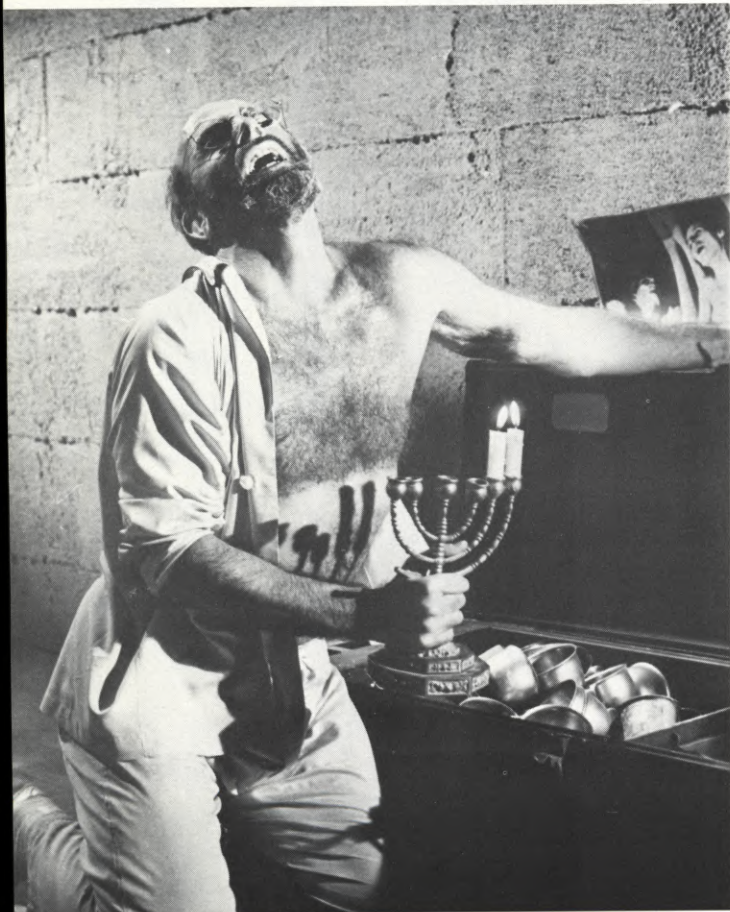
butted together to look like a single shot. It was an interesting problem of matching, but the result looks fine on the screen.

QUESTION: Can you tell me a bit about the studio shooting done back in Hollywood?

LEAVITT: The main set, built on the sound stage at 20th Century-Fox, was the courtroom in which the main character is tried for war crimes, after he has been abducted to Israel. The courtroom was supposed to have a dull grayness to it, which is harder to get than it sounds, because in color filming it's almost impossible to take all of the color out of something. There's almost always a slight cast of some color. In this case, in the final printing, they elected to throw it to the lightish blue side. I personally think this was not quite as good as it would have been if they'd washed a bit of the color out — but that was the decision of the executives.

QUESTION: What about the glass booth itself, the one inside of which the prisoner sits during the courtroom trial — did it present any problems in terms of reflections?

In his two-sided role of the oppressed and his own oppressor, Maximilian Schell delivers a dazzling tour de force performance. (LEFT) He relives his agony as a Jewish victim of Nazi madness. (RIGHT) In the glass booth of the Israeli courtroom, he becomes the Nazi arch-fiend who declares: "Murder keeps man fit!" The bizarre drama was written by actor-playwright-novelist Robert Shaw.



LEAVITT: Well, of course, whenever you have a large expanse of glass in a scene you're fighting the potential problem of reflections from the lights, mainly, as well as from other elements on the set. We could have had a very serious problem in this respect, but we tried to keep our lights up high and shoot them down into the booth. What made that rough to do was the fact that there was a low ceiling on the set which made it impossible for us to get the lights as high as we wanted them to be. We did manage to get 10K's up high and farther away to provide a key light on the man in the booth. The rest of the lighting was done with Juniors and other small lights working in closer and juggled around to avoid reflections on the glass. We kept these lights to a minimum, and I would say that during the entire last half of the picture, which takes place in the courtroom, we had very few lights on the booth. There was another interesting set in the picture. It was supposed to be an Israeli jail with a corridor. In printing this sequence the lab managed to retain a true grayness, which is very effective in terms of mood.

QUESTION: Did most of your interior sets have low ceilings?

LEAVITT: The sets of the jail and the



High-level conference on the set of "THE MAN IN THE GLASS BOOTH" involves (left to right) Producer Ely Landau, Executive Producer Mort Abrahams, Director of Photography Sam Leavitt, ASC, and Production Manager Robert Koster. The film involved five days of location shooting in New York and 22 days of filming on Hollywood sound stages.

courtroom had particularly low ceilings. In the courtroom the director wanted to be able to see the practical lights on the ceiling, so we got down to some pretty low angles at times.

QUESTION: What kind of light level did you adopt in shooting this picture?

LEAVITT: I didn't shoot it in a high key. My average light level was about 125

foot-candles, sufficient to hold focus. Personally, I like to shoot in a very low key. I think that 100 foot-candles is a good average level. Of course, you can go to the extreme of shooting with 10 or 20 foot-candles of light and then force the development. Anybody can do that, but I don't think it's a very artistic way of doing it. I think that the photographer who does that is fooling himself — or perhaps he's trying to please the producer with the economy of using



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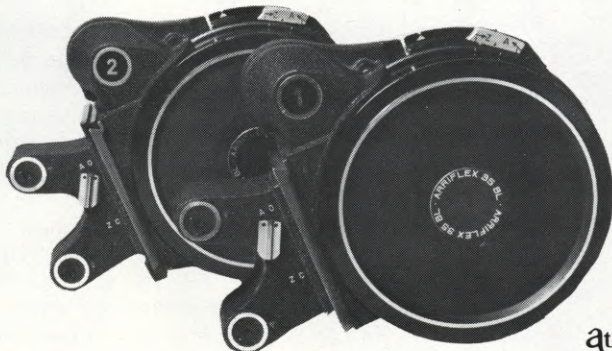
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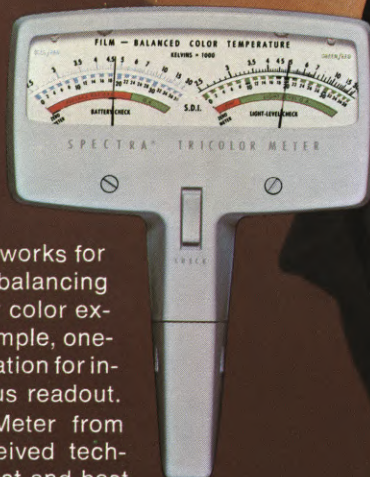


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very little light. The producer looks at the footage and says, "What's wrong with that. It looks good to me. It looks beautiful!" I can see how forced development might be useful in shooting exteriors because, after all, exteriors are pretty rough to shoot, and you have to do something to even out the difference between footage shot in hot sunlight and that shot in flat light. I don't believe that there are any filters that can do that. I'm trying to find one that will even it up.

QUESTION: How do you feel about shooting interiors on location, as opposed to shooting them on sets built in the studio?

LEAVITT: I've always liked shooting interiors in the studio, for the simple reason that you can control it. However, I've done my share of shooting all the interiors on location, in pictures like "EXODUS" and "ANATOMY OF A MURDER". Most of the interiors for "ADVISE AND CONSENT" were shot on location in Washington. So it's perfectly feasible to shoot interiors on location and a lot of it is being done, but you need help, because there are special problems. One of the big problems is that the cinematographer usually does not have enough light to balance the interior with the exterior background that is seen through windows and doors. Nowadays I see scenes in which the exterior part is so over-exposed and burned out in comparison to the interior that it's ridiculous. In my opinion, it isn't logical and it doesn't look good. On top of that, the viewer's eye is caught by the burned out exterior, rather than by the action going on in the foreground. It's distracting.

QUESTION: In an interior-exterior location situation such as the one you've just cited, would you prefer to gel the windows and use an incandescent balance or use a daylight balance without the gels?

LEAVITT: I would rather use gels on the windows and take care of the interior with incandescent lights, which is easier. To get a daylight balance you have to use big lights, and to use big lights on a small set is not logical. It's not difficult to put the gels on. I've done it many times. I made a picture once with Rosalind Russell called "WHERE ANGELS GO TROUBLE FOLLOWS" and it was shot entirely on a bus. We had to go from one part of the country to the other on this bus full of people. I found a neutral paint that I could use to paint the windows and every time the

Continued on Page 732

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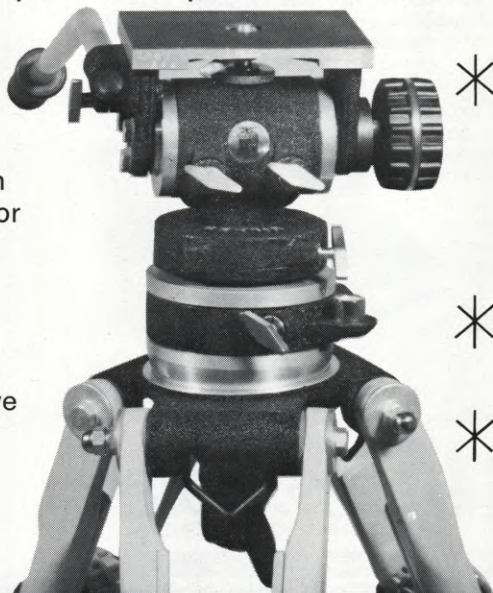
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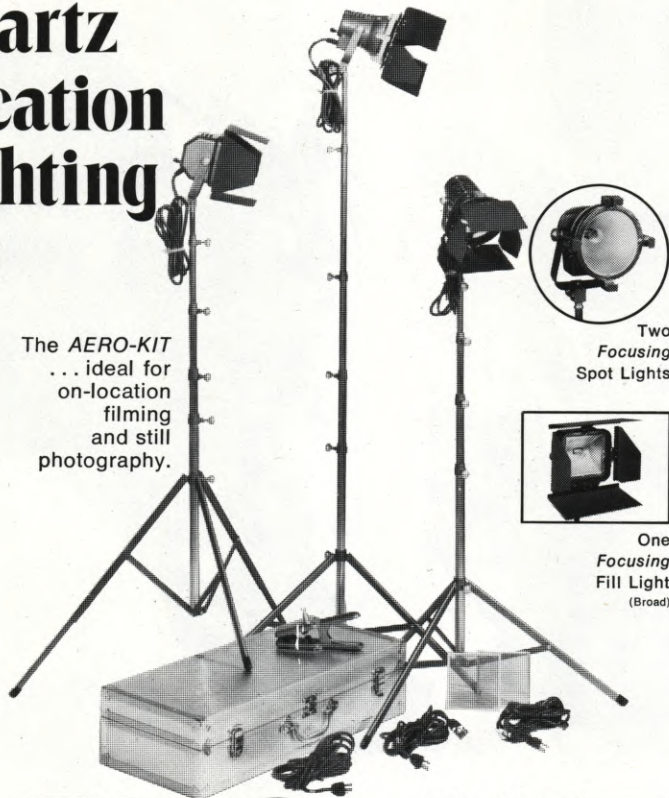
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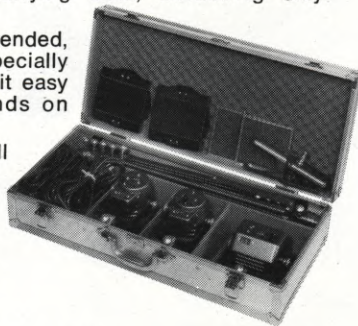
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"THE INVISIBLE UNIVERSE" Continued from Page 689

graphed our own "mad scientist" sequence using the venerable McCormick Observatory in Charlottesville, Va. as a set. Our scientist, ably played by Bob Haas, is in fact an electronic engineer, and he brought his own spark equipment for appropriate visual effects. Using a 45° angled piece of glass in front of the camera to partially reflect some artwork, we were able to simulate a beam of light suddenly descending on Bob — an "invisible ray". We resurrected some vintage Double-X negative to use as camera stock, and had this printed several times to increase grain and contrast. Lots of kicker-light heightened the 1930's effect, as did the use of a circular wipe during a scene transition. The final version was skip-printed to add a little extra speed to the action. This sequence makes a strong bid for the audience's attention at the head end of our film.

After a month of editing, we made a pilgrimage to Capitol Film Labs in Washington, D.C., to lay in the sound. Jack Flynn's commanding voice gave our narration authenticity. We pored through Capitol's music library to find the material for our completely scored, orchestrally full music track. Dramatic compositions, with touches of the mysterious, were generally first choices. Our effects were brought along from home on quarter-inch tape, thence transferred to 16mm mag. We recorded our own effects, using everything from laboratory oscillators to ham-radio equipment. The final mix of five different tracks was artfully accomplished by Capitol's Hal Magruder.

The film has been a success, not only with the tourists at Green Bank, but with the general astronomical community. Several dozen universities have obtained prints for showing to beginning astronomy classes. In October, "THE INVISIBLE UNIVERSE" won a second place in the CINDY competition. Perhaps a few of the many thousands who see this picture will be sufficiently interested by its subject to pursue the pleasures and problems of astronomical research. To us, that would be a gratifying reward. ■

"THE INVISIBLE UNIVERSE"

Produced by Drs. Seth Shostak, Robert O'Connell, and Dick Sramek, for the National Radio Astronomy Observatory. (The Observatory is operated by Associated Universities, Inc. under contract with the National Science Foundation.)

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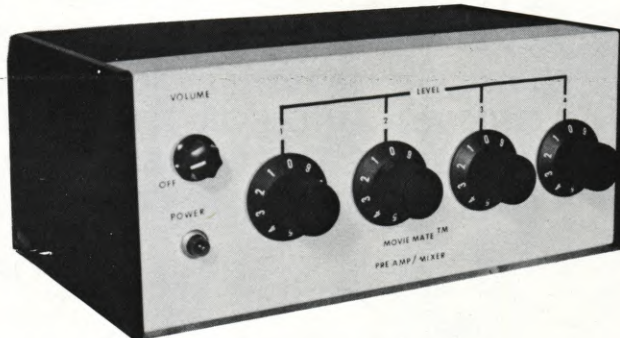
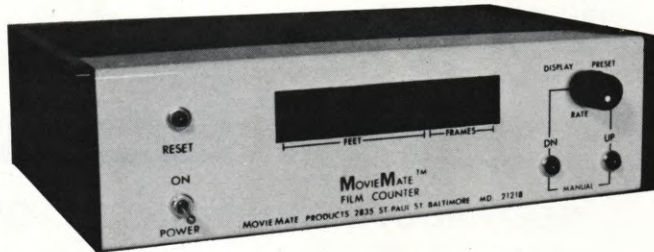
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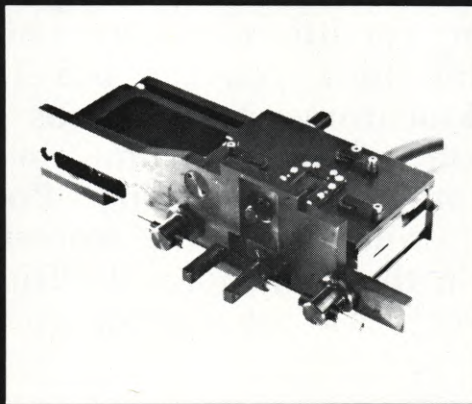


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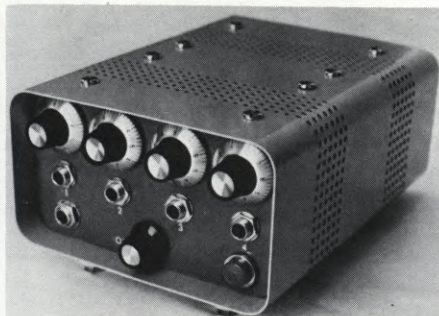
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Four input jacks supply four accurately matched channels with four separate and independent gain controls. A separate control knob for the level of sound leaves the gain settings of each channel undisturbed when the unit is turned off or on. The earphone connection has automatic switching when earphones are used. This lightweight unit is in a contemporary cabinet design in shades of grey. The compact size is 3½ inches by 5½ inches by 7½ inches. This 4 channel Mixer Amplifier is sold with a one year guarantee for the low price of \$160.

For further information contact: SPECIALTIES DESIGN & MFG. CO.; 3429 Encina Drive; Las Vegas, Nevada 89121.

NEW AFI BOOK ON FILMMAKING

The most famous names in movie history — Henry Fonda, Charlton Heston, Jack Benny, Edith Head, Peter Falk, Leslie Caron — are among the more than fifty people concerned with the making of movies quoted in "*Filmmaking: The Collaborative Art*", the first

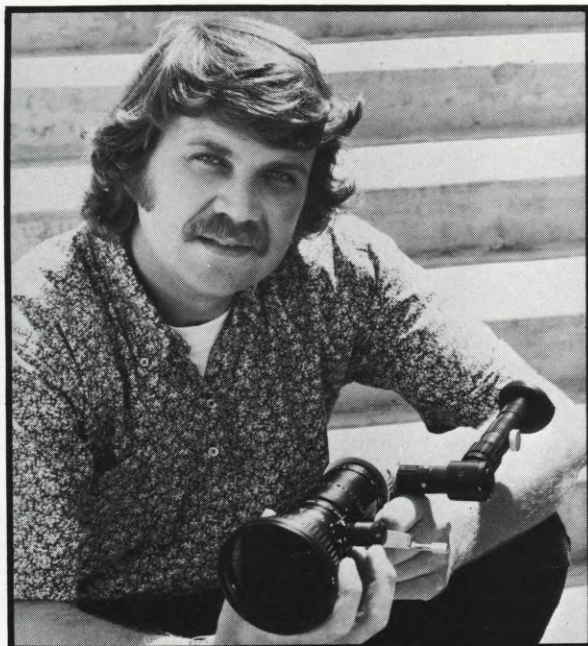
book to be published as an American Film Institute book by Little, Brown and Company.

The book, published this month, is designed both for the fan of motion pictures and the serious student. It is the first in a series of books planned by the AFI to disseminate more widely the large body of film knowledge and opinion the Institute has accumulated from the women and men who actually make motion pictures.

"*Filmmaking: The Collaborative Art*" makes liberal use of quotations taken from seminars at the AFI's Center for Advanced Film Studies and from oral histories of filmmakers undertaken by the Louis B. Mayer-AFI Film History Program.

Included in the book, liberally supplemented with pictures, diagrams and other illustrations, are chapters on producing, writing, photography, composing, acting, art direction, costume design, film editing, and special effects.

The book covers almost every aspect of filmmaking except directing, which will be dealt with in a separate book. "*Filmmaking: The Collaborative Art*" emphasizes the many areas of contributions to film not normally given sufficient credit and about which comparatively little is known. ■



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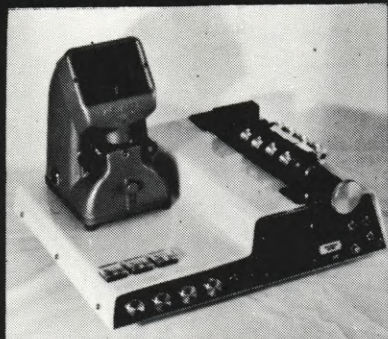
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INDUSTRY ACTIVITIES

Continued from Page 636

action, animation, sound or silent are all acceptable.

This year, in addition to prizes for the best films, Cinemedia is offering special money awards in the following categories: best Bicentennial theme, best animation, best script and best musical score.

Entries will be judged on the basis of creative imagination, overall presentation, general technical proficiency and camera work.

Winning films will be shown to audiences in California, Utah, Nevada and Arizona at the Broadway's Fall Film Festival 1975.

Complete Cinemedia contest details and entry forms are available at all Broadway stores, high schools, professional schools and college theatre-arts and film departments.

AMTEC '75 TO BE HELD IN CALGARY, JUNE 15-18

AMTEC '75, the fifth Canadian Educational Communications Conference of the Association for Media and Technology in Education, takes place this year in Calgary, Alberta, June 15-18.

Conference co-ordinators, Sally Landerkin and Alan Robertson of The University of Calgary department of communications media, are expecting more than 400 delegates at the meeting, to take place in Calgary's newly-opened Convention Centre.

"Partnerships in Learning" will be the theme, with discussions focusing on practically all possible interactions between instructional media personnel: between technology and people, between instructional planners and producers, between teacher and learner, among various educational levels, etc.

Mini-themes for the three main conference days, June 16, 17 and 18, are "Man and Methods", "Man and Machines" and "People and Perspectives". General and special interest sessions, "hands on" workshops, extensive exhibits, a participatory multi-media "experience", group discussions and seminars will make up the daily programs.

Keynote speaker for the conference will be Knowlton Nash, for many years a CBC correspondent and now director of information programs, CBC Television (English network).

Other guest speakers include: Ken Komoski, executive producer of EPIE (Educational Products Information Ex-

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change Institute), New York; and Christopher Sarson, former producer of the children's television program, ZOOM, now executive producer (television) with the Educational Development Centre, Massachusetts.

The educational technology branch of the federal department of communications will be participating in this year's AMTEC conference for the first time.

The six categories for submissions are: print, audio materials, filmstrips and audio/slide combinations, videotapes, films and learning kits. They will be divided into five classes: individual schools, school systems, post-secondary institutes, government media agencies and commercial producers. A limit of three entries will be accepted from each institution.

Entries may be submitted to: David Cormack, ACCESS Television South, Calgary Health Sciences Centre, 1611 — 29 St. N.W., Calgary, Alberta T2N 4J8.

Awards will be presented by Knowlton Nash at a wrap-up banquet Wednesday evening, June 18.

To register for AMTEC '75 contact: Garry Smith, ACCESS Television South, Calgary Health Sciences Centre, 1611 — 29 St. N.W., Calgary, Alberta T2N 4J8.

Registration fee for the entire conference will be \$85 for AMTEC members. For non-members, the cost is \$100, which includes a membership fee. After May 30, a \$10 late registration charge will be levied.

Daily registration is also accepted at \$20 a day. Special student rates are \$25 for the full conference, or \$10 a day. Rates for daily registration and students cover sessions only; tickets for lunches, barbecue and awards dinner must be purchased separately.

HIGH SCHOOLS WANT MORE CAREER GUIDANCE FILMS

American high schools need more career guidance films and those films should emphasize work attitudes, according to a new survey of guidance counselors and teachers.

"Films seem to be an ideal way to present career information to 'media-spoiled' students," wrote one respondent.

But the educators warned that guidance films must be realistic and up-to-date if students are to believe in them and relate to the goals illustrated.

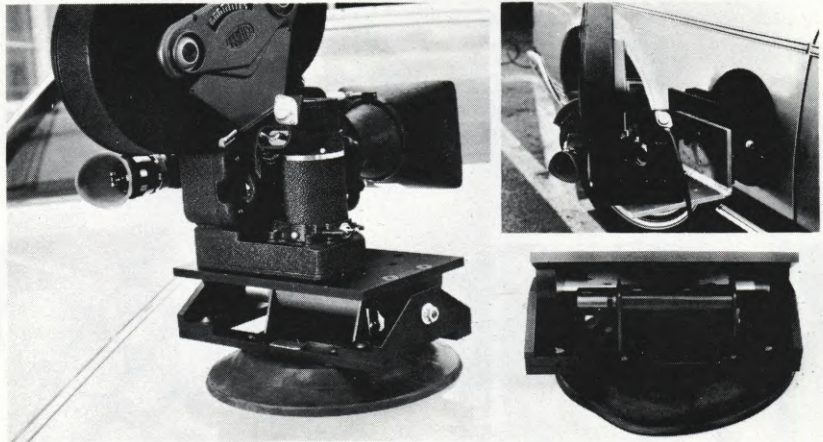
Technical fields topped the list of "career opportunities" that need covering, according to the survey, with 65%

Continued on Page 734

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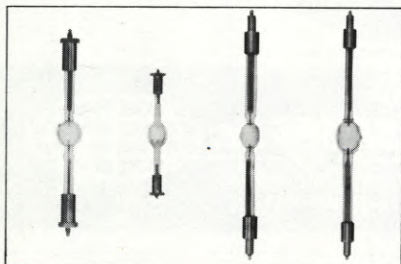
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THE BIRDS AND BEES Continued from Page 697

screen to be feasible. Therefore, individual hatchings were filmed at a variance of speeds. Every speed from 8 fps up to 64 fps was utilized. Of course, the segments shot at 64 fps created a real problem with depth of field and focusing became even more difficult. Many feet of film were used in this method so that we could acquire the kind of effect and the interest in this natural phenomenon that we wanted. In the final editing of the film, both high-speed and slow-motion segments were utilized.

This filming was done in the house with an open set and at the time of each filming hundreds of newly emerged green bottle flies were flying about the den within a matter of 15 minutes. For this reason, the den was completely shut off from the rest of the house. The question of how to get rid of the flies arose. We could not spray any kind of poison about the room, since the room also contained other animals. At length I came up with a workable answer to the problem. I simply put moth ball crystals inside the vacuum cleaner bag and, with the aid of my wife, simply vacuumed the flies up. We vacuumed them off the walls, the ceilings, the props, and anything else that they chose to land on, and were able to have the job done within several minutes each time. As the days of filming progressed I got so good I could even vacuum them out of the air as they hovered around the room. In order to finish the episode, several cultures of maggots had to be raised and the hatchings filmed. This entailed several weeks of work and a lot of vacuuming.

The recording of the golden orb-weaver spider laying her eggs and building her egg case was one of the most difficult and time-consuming sequences I filmed for BIRDS DO IT, BEES DO IT. A dozen gravid, golden orb-weaver females were collected and placed within separate containers constructed in the form of a wooden frame covered on the front and back by panes of glass. Leaves and branches were attached to the four inner sides of the wooden frame. The spiders were put inside where, in most cases, they immediately set about constructing their webbing back and forth across the framework. The spiders had to be set out in the yard during the day so they could receive the proper amount of sunlight and temperature for that time of year. In the evenings, they were taken inside to keep them from being molested by dogs or cats.

A special photographic set was built containing a grassy and leafy back-

ground which, needless to say, would definitely be out of focus. The lights were positioned, the camera set up and ready to go. The waiting began and the vigil of sleepless nights was on its way. The spiders had to be watched constantly, so when the first signs of egg case building were noticed they could be put on the set to be filmed. During the day, it was simply a matter of watching them, while I either read or studied, and every other day or so it was necessary to feed them a garden insect, such as a grasshopper or a fly to maintain the health and vitality necessary for the toilsome task of building the egg cases. At night, it was a different matter. Since I obviously could not do entirely without sleep, I got what sleep I could on the living room couch (so as not to disturb my wife) with an alarm clock beside me which rang every half hour. I would rise and go into the den to check the spiders for signs of behavior indicating the beginning of construction of the egg case. I learned immediately that if I turned on the light or used a regular flashlight, they would become disturbed and it would create definite problems with their behavior, so I utilized a small penlight and held my hand over it, barely casting a light on them. This made it even harder for me because I had to wake myself up even more, so that I could closely observe each individual spider and check for the important signs. There was no way of knowing exactly when each one was due to begin building her egg case and laying her eggs; consequently, every night and day, from the moment the spiders were captured until the day the final footage was ok'd at Wolper Pictures, which was about two weeks, I spent my time in this manner. One morning at 3 a.m. I noticed one weaver spider beginning to build her egg case. I began at once to transfer the frame to the set that was waiting. Though I moved as gently as possible, at the moment of letting down the frame, I jarred it slightly and the spider froze. At this point, she had her egg casing constructed about a fourth of the way, and though I patiently watched, she never did resume her work, but eventually abandoned the spot to die several days later — egg-bound.

At a later date, I observed another spider beginning to build her egg casing at about 2:30 in the morning. This time, I was extremely careful with the frame as I transferred it on to the set. After I had put it down, I very gently and very carefully removed the glass from the front and the back. The spider was now easily accessible to the line-of-sight of the lens. At this point, she had her egg casing about a third built. I

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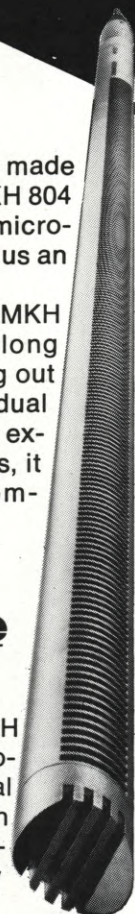
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held my breath and turned on the lights. She froze completely. I watched in dismay, thinking surely she would endure the same fate as the previous spider, but after about 15 minutes, with the lamps still burning brightly, she continued to build her egg case.

The filming began, using the Leica-flex 100mm macro lens on the bellows. The end of the lens was approximately two feet from her and she was in a medium shot on the ground glass. As she continued to build her egg case, her intricate movements could be filmed. After she had completed the top half of the silken sphere that was to house her eggs, I moved the lens in for an extreme close-up to capture the actual emergence of the eggs from her body. The end of the lens was now about 2 inches from the spider. She hung motionless underneath her egg casing with the center of her body approximately 1/8th of an inch from the bottom surface of the dome hanging above her. Even though there was no detectable movement whatsoever, something told me to begin filming, so I hit the release button and a brand new roll containing 200 feet of film began winding its way through the mechanism of the camera. After approximately 15 seconds, a small flap of skin in the center of her abdomen began to rise and from underneath this flap an orangish jelly-like bubble began to appear. As the bubble grew on her stomach, hundreds of salmon-like eggs could be seen within it. After the bubble had grown to about half the size of her abdomen, she used her whole body to press it against the upper hemisphere of the egg casing. It stuck to the casing and the eggs continued to pour forth from her body. As the last egg made its exit, the end of the film passed through the gate in the camera. I realized at this point that the whole event would have to be filmed over again, utilizing another spider, in order to capture the part of her behavior that was now taking place, for it was happening too fast for me to be able to change the film.

Webbing was rapidly pouring forth out of the spider's body as she began to weave and stitch and cover the mass of eggs she had just laid. She used only her two rear legs in the intricate, yet steady, process of sealing the eggs within the sphere of her egg case. I was exhilarated by what I had just seen and filmed, because few people take the time or patience to observe nature and the beautiful wonders it holds. After I changed the roll, I continued to film the rest of the egg case building process which was completed at about 7 o'clock in the morning. Several days later the part of the process I had missed was

successfully filmed at about 4 a.m.

Whatever I have to go through to observe and record such phenomena is well worth all the effort and the toil it may take. To me, it is a personal reward to know that I actually saw and filmed something unique and beautiful in nature.

Another sequence involved quite a number of white laboratory mice. I was to record the mating and birth, and the multiplication of the population of these mice. A pair of mice, if left unmolested, can increase their numbers to over 250 within 6 months, and this is what I was to demonstrate on film. As this was to be shown taking place within a laboratory, it wasn't necessary to build up intricate sets. Simple boxes were built and painted a blue-gray color, then the bottoms were covered with mahogany-colored wood shavings. We could not use the more easily accessible pine shavings because the pine was too closely matched to the white color of the mice.

In the smaller box on the table, I put several females and one very virile male and thereby very shortly was able to film the mating process. Then, of course, came the birth. Knowing the gestation period, it was not too difficult to be prepared a couple of days before the female mice were due to give birth. The now very plump mice were put into the same container and observed 24 hours a day, until the moment of birth was imminent. The lights were then turned on and the camera started when the babies were emerging from their mothers' bodies. As the babies grew and developed they were filmed each day to record their maturation.

The next step was to film segments that would simulate the "population explosion." We certainly couldn't wait 6 months for this to happen naturally, so I set about acquiring 250 white mice from every pet shop in town. As the days passed, these 250 mice had to be cared for, watered, fed, and cleaned; requiring the use of several very large containers, large water drinkers and, believe it or not, about 150 pounds of Purina Mouse Chow.

The large box that was to contain the 250 mice was set on the floor of the den. The Angenieux zoom lens would be utilized for all aspects of this shooting; the water slides were not necessary because the lights were about eight feet from the mice. The camera was placed in exactly the same spot and utilized the same zoom ratio position for all shots. A large pane of glass was used on the front of the box and the lights had been previously positioned so no reflections were noticeable. The camera, the tripod head, and the tripod legs had to be cov-

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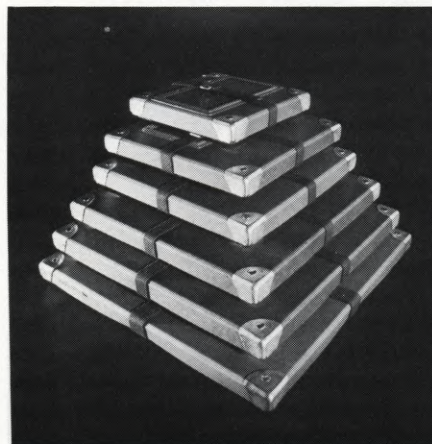
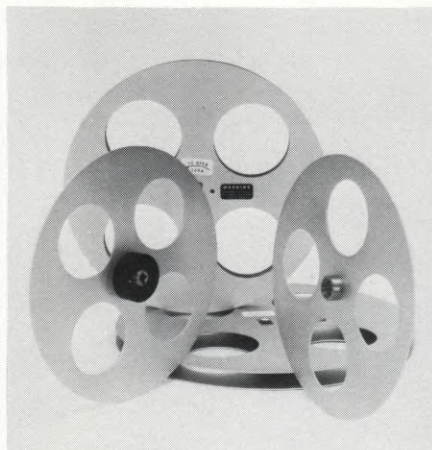
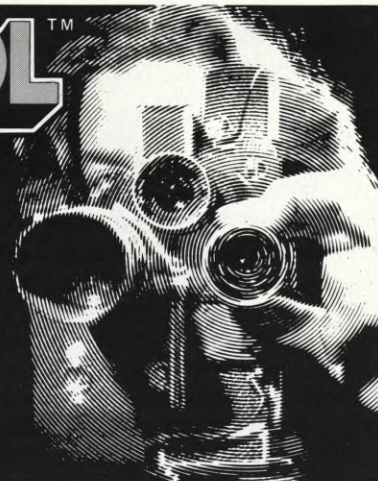
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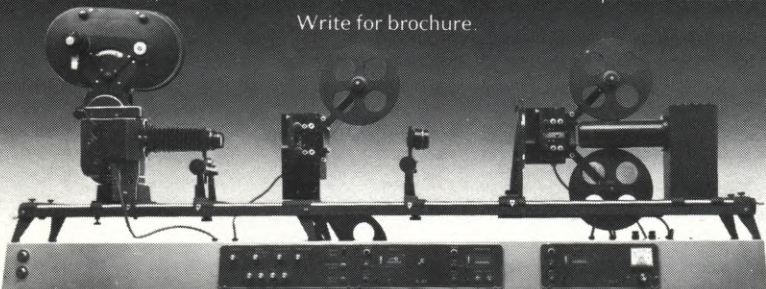
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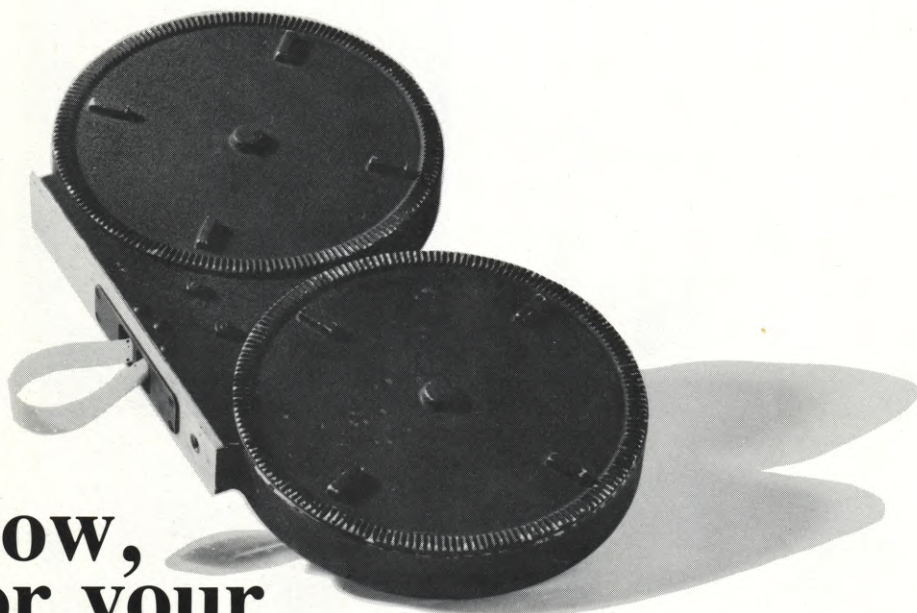
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ered with black velvet cloth, and I had to hide behind a black velvet screen to keep from throwing reflections onto the glass. The filming began as a pair of white mice were placed within the box. Using the information that I had available to me on mice, I calculated that two mice would have approximately eight babies and of these eight babies approximately four would be male and four female; therefore, it was simple mathematics to calculate that from each pair would come another eight babies, each of which would be 50 percent male and 50 percent female. With a gestation period, or length of pregnancy, of only 20 days you can see why two would increase to 250 in a very short, relative time.

All the following shots were made by just mathematically increasing the numbers of mice from the previous shot. Since all the foregoing were filmed in the same sized box, the breeding potential of rodents could very readily be appreciated.

A small part of BIRDS DO IT, BEES DO IT was concerned with how plants reproduce. Many plants must be cross-pollinated by insects — and since the insect best known for this is the common honey bee, it was the obvious choice of subject for this part of the picture showing the pollination of the reproductive organ of a plant — the flower. The flower I chose for this sequence was the red Hibiscus flower, partly because its bright red color contrasts beautifully with the gold and brown tones of the honey bee, and also because the photographic view of the pollen of this flower was accessible at almost all angles.

Several Hibiscus flowers were placed on a set outdoors in the bright sunlight near some other flowering plants that were being frequented by bees. Soon, some of the bees began to come to the Hibiscus flowers and filming commenced. The first step was filming a bee picking up the pollen on her legs from one flower and transferring it to another flower. This was extremely difficult because the bee did not always fly from one flower to the nearest one, and also the bee flew so fast that the action had to be filmed in a long shot. The macro lens was used, but it was placed quite a distance from the flowers where it would not disturb the bees or get in the way of their path of flight. A great deal of film was used in this fashion, but the sequence was finally completed and the extreme close-ups could now begin.

The next step was to film a bee heavily laden with pollen landing on a flower and transferring the pollen from her leg onto the plant. Since these shots were made in extreme close-up,

the bright sunlight was utilized, but even then the depth of field was critically shallow. This made the problem of follow-focusing even more difficult, because when a bee landed on a flower her sheer weight or the wind from the beat of her wings would cause the flower to shake and vibrate ever so slightly, causing it to move in and out of focus. At times, one bee would be doing the right thing (and in focus) and another bee would land on the flower elsewhere causing the flower to shake and vibrate, and if there was any breeze in the air at all, this would further complicate the situation. Because of the prevailing weather, the disturbing winds, and the infrequent visits of the bees, it took several days to complete this segment of the movie. Some extreme closeups of the bees taking off and landing on the flowers were attempted at high speed filming (64 fps). Focusing had to be guessed and pre-set because once the bee was in the air there was no way of telling for that split second if she was in or out of focus. We did end up with a very pretty sequence on the pollination of the Hibiscus flower by the honey bee.

Without a doubt, one of the most difficult sequences to achieve was that of filming the development of a mouse fetus; beginning nine days from the date of conception and following through until term, at 20 days. The camera was to be locked in the same position and incorporate the same framing for each shot to show size and configuration development as the days progressed in the age of the fetus.

All the fetuses were to be alive and this in itself created a problem. A fluid had to be devised in which they could be submerged that would aid in maintaining their life for as long as possible. The fluid, of course, had to be clear and colorless since the photography would have to be done through it. While all the figuring and set building was taking place a dozen female mice, in different stages of pregnancy, were ordered from the eastern United States.

Since the small fetuses had to be photographed in a fluid and lying on their sides, an all-glass frame was built and placed over a square hole cut in a table. It contained the fetus and fluid to maintain life. Some floating lint and dirt was added for effect. The table was high because the fetus was to be heavily back-lit and the lamp and background would have to be positioned underneath the table. The camera was placed high above the table shooting straight down through the frame. I had to use a ladder that was placed next to the camera so that I could get high enough to see down

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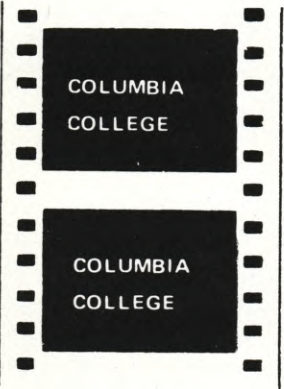
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through the eye-piece. Test shots were made utilizing different exposures. Only one light was eventually used, a 1000-watt light positioned about two feet under the frame, slightly to the right, and shooting almost directly up into the lens. The background was to be black.

To create the desired effect of a fluid movement around the body of the fetus, my wife would stand off on the sidelines during the filming and gently blow on the water to cause the water and particles of lint and dirt to circulate. At times, it was very difficult for her because she could not take a breath during the filming. If she ran out of air and stopped to take a breath, the fluid in the frame would abruptly stop or immediately reverse direction, thereby ruining the shot — but, between the two of us, we achieved success.

The pregnant mice arrived and filming began. I decided to start using the 20-day-old fetuses and work my way down to the 9-day-old fetuses, because the 20-day-old fetus was close to its day of birth. If it was not used that day it could be born and thereby rendered unuseable. Another reason was that the younger the fetus, the more difficult it would be to achieve the goal I had set for myself.

Each pregnant mouse had to be operated on and the fetuses removed from her body with umbilical cords and placentas intact. The size of a 20-day-old mouse fetus is approximately that of a jelly bean. Removing it from the womb, cutting and unfolding the shroud from around it, so that it could be freely seen with the umbilical cord and placenta still attached, was difficult enough, but when we got down to the 9-day-old fetus, which is only the size of a BB, it became extremely difficult and tedious.

The fetuses were to be photographed in the following ages of development: 20 days, 18 days, 16 days, 12 days, 11 days, 10 days, and 9 days. Maintaining the life of the 20-day fetus after it had been removed from its mother wasn't too difficult because it was very close to the day of its birth and would live in the fluid for several hours. As we got down to about 12 days and lower, it began to be an extremely difficult problem to maintain life in the little fetus. Occasionally extreme close-ups were taken, where the hearts could be seen beating within their chests. You could also see the blood pumping and circulating through the umbilical cord, and into and out of the placenta. Of course, the younger the fetuses were, the more transparent their bodies, and these things could be more easily and readily seen.

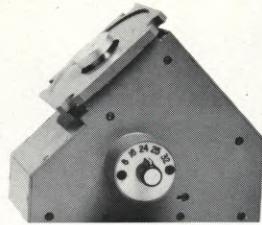
In about two weeks, all filming on the

mouse fetuses had been completed with the exception of the 9-day-old fetus, which would die within approximately 30 seconds after removal from the mother's body. I just could not keep it alive long enough to remove it from the mother's body, and using a pair of forceps and scissors, cut off the shroud, peel it back over the placenta, place the little fetus into the fluid, turn on the lights, and get up and start the camera before the fetus would die. I worked, studied, and practiced, developing new techniques of handling the fetuses, severing and cutting apart the shroud, and placing the fetus in the frame under the camera for about two weeks while awaiting a new batch of pregnant mice. The practicing was done on the 9-day-old fetuses that I had previously removed from their mother's bodies and had preserved in alcohol.

Another real difficulty was that if I slipped with the tweezers or the scissors, the tiny fetus would be crushed or maimed. It should have been done properly under a dissecting microscope, but I did not have the time for that.

The gravid female mice arrived in a few days and I set about to achieve what everybody told me was impossible. Even though there were eight baby fetuses in each female mouse, I was only able to utilize one — because by the time I finished with that one, all the other ones had died. I reached in and got an adult female mouse. I opened her up and removed the womb containing eight babies, cut open the womb and removed one baby, cut open the shroud, peeled it back over the placenta, placed the baby in the fluid of the frame, turned on the lights, my wife began to blow on the fluid while I climbed up the ladder and began the filming — all in about 20 seconds — giving myself 10 seconds to film.

Practice pays off. After about the third attempt, I achieved success and got what I believe to be the most striking sequences that have ever been filmed on the development of a mouse fetus. The shot I had just taken had been the static long-shot. Now, I would try for the extreme close-up. The bellows was extended all the way, with the addition of several extension tubes. The lens was wide open at F/4. The exposure for all the shots of the previous fetuses had been calculated by pointing the meter towards the back light and over-exposing this reading by about one stop, thereby achieving a very beautiful effect. This shot would definitely be no exception to this rule. In trying for this extreme close-up, I achieved success with the first fetus. What I recorded on film is something



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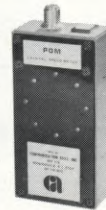
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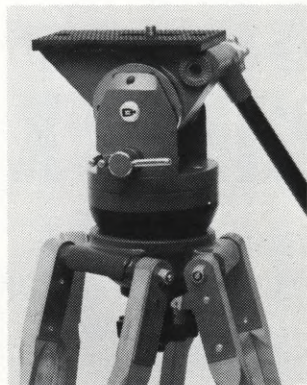
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very few people have ever seen — the pounding, throbbing beat of a heart pulsating within the transparent chest of a 9-day-old mouse fetus not any bigger than a BB and as delicate as a rain drop. The sequences on the mouse fetuses were completed and Nick and Irwin were overjoyed with the results.

There were several additional shots that were needed for the movie to accompany the title song, *Let's Do It*. There were two particular lines in the song in which they had, as yet, no illustrating footage — "Bees Do It", and "Fleas Do It". Nick and Irwin did not particularly want bees doing it or fleas doing it. They just wanted two bees involved with each other and two fleas involved with each other. The quick shot at the beginning of the film during the song, with the two bees on the bright yellow flower touching antennas, involved the capture of about half a dozen bees from a nearby beehive. The flower was installed on a small set in the den. Getting two bees to stay on this flower at the same time was something else again, let alone getting them to touch each other or look at each other, or even care about each other. Eventually two did stop in the center of the flower to exchange amenities and the shot was accomplished.

Now, a new problem — how do you film two fleas? How do you keep them in focus? How do you light them? What kind of background do you use? What kind of substratum do you put them on? How can you tell a male flea from a female flea, or does it matter? How can you capture a flea without killing it? If you grab it with a pair of tweezers you will crush it. Most important of all, how do you keep a flea in focus? A flea just won't sit still, and they did not want just one flea, but two fleas — both in focus and both having something to do with each other. "You must be kidding!" I said to myself. What cat or dog is going to stand still long enough, or stop breathing long enough for me to be able to film two fleas on its back? It would be like filming a golf ball rolling around a field of wheat in the middle of an earthquake. If I cut the wheat down, the ball would just bounce its way over to another crop of wheat. But, first things first.

After digging up a little tiny vial with a cork in the end, I proceeded next door to our neighbors. Knock, knock. "Oh, hello Carol. Ah! — Part of the filming I'm doing for BIRDS DO IT, BEES DO IT involves some fleas, and, ah, since you have two dogs and a cat, I thought maybe — I'm not inferring that your dogs or cat are dirty, but you know how dogs and cats are. I was wondering if I might take a look at them for just a moment



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... " With a smile and a laugh she said, "Sure, come on in. The kitten is loaded with fleas." She then proceeded to help me as we held down her kitten, and sorting through the fur on its belly, tried desperately to grab fleas with our fingers. After about an hour of flea-hunting among jungles of fur we came up with two fleas.

The next step: How do you keep two fleas contained, and in focus long enough to get any kind of decent footage shot? Fleas are very flat vertically, so they have to be shot from the side; if they aren't, it would be like shooting a coin edge-on — nothing. Their movements were extremely fast and that had to be slowed down also. I thought and thought and came up with an idea. I took a piece of heavy paper of just the right thickness and cut a rectangular hole in the center of it, about the size of a bean. I taped this piece of paper onto a sheet of glass, placed the glass over the hole in the tall table, and put another sheet of glass on top of that sheet of glass. Therefore, what I had was two sheets of glass with a piece of paper sandwiched between them. Fun time. Getting one flea into the little tiny paper frame was bad enough, but trying to get the second one in, while trying to keep the first one from hopping away, was something else again. Training fleas for a flea circus could never be an occupation for me. These two little fleas definitely did not speak my language, I know, because I told them how I felt often enough, but they refused to do it my way. Eventually though, I did get them both in the frame, between the two sheets of glass which were so close together that the fleas had just enough room to squeeze around. The camera was positioned straight above the fleas and I used the Leicaflex Macro lens with full extension on the bellows and all the extension tubes I had. The end of the lens was approximately an inch from the fleas. Since I did not want to go through all of this again for such a quick shot, I used different light set-ups, bracketed my exposures, and used a variety of backgrounds. Of course, most important of all, I wanted the fleas to be fleas! Occasionally they did what I thought they should do and I would film them. By moving the camera up and down I also shot a variety of long shots, medium shots, close-ups, and extreme close-ups.

On one occasion, one of the fleas squeezed between the paper and the glass. Upon trying to return him to his proper place, I crushed him, and I was crushed — but not out of mourning. So I reluctantly returned to my next door neighbor and procured another flea, thereby enabling me to continue with

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the filming.

In the extreme closeups, it was very interesting to see the body fluids of the flea circulating within it when utilizing heavy back-lighting. What we ended up with after all this difficulty and work was a 4-second sequence with two fleas, in a medium shot, chasing each other around, which was backlit with a slight gray background and a clump of white hairs for the fleas to climb around on.

There were several other beautiful sequences that I filmed for the movie, which were not used for one reason or another. Some were not complete enough because of the time of the year, others were too similar to things that were already locked into the picture, and still others just did not end up fitting the story line of the completed film. I filmed the courtship and mating of the giant banana slugs of Northern California. These bright yellow slugs achieve a length of eight inches and are as big around as your thumb. There were slow-motion shots of a tarantula, and of scorpions. I shot a small sequence of the combat of two stag beetles. I also accomplished the difficult task of filming the courtship and mating behavior of a beautiful pair of venomous copperhead snakes.

Dale and I started our contract with Wolper Pictures in Los Angeles by filming the snails and ended it up by filming bees and fleas. It involved a most enjoyable year of studying and filming these creatures. In addition, the loving devotion shown by my wife; and my association with Nick, Irwin, Malcolm, and Alex — and the staff at Wolper Pictures — made it one of the happiest years of my life. Time well spent for BIRDS DO IT, BEES DO IT. ■

"HITCHHIKER" MICROPHONE
Continued from Page 677

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ending library" — the dichotomy between the way things look and the way things are.

SCHLESINGER: *Am I interested in cross-currents, laminations if you like? Yes, I think I'm very interested in that. I'm very interested in finding the image for when the cowboy is down and out and desperate and doesn't know what to do and just sits in the bath gawking at the television set. Life is full of characters who are walking contradictions, and one draws them from life. The poodle wig-maker that seemed so bizarre was a literal image I'd seen here in Hollywood on a TV talk show and stored away and said: "We've got to use it. It's terrific!" I like several things going on at once, and I've been criticized for this, too. People say that I give too much importance to sub-textures. But I don't think I do. I think that's what makes a film perhaps more interesting, more personal.*

QUESTION: As a part of the audience, on repeated viewings, things pop up, too, that you hadn't noticed before.

SCHLESINGER: *Yes, I'm told that's true. I have a feeling this film may be worth a second visit.*

QUESTION: I read recently that you said: "The value of success is the amount of freedom that comes as a result. Success buys you a certain independence." Are you at that stage now, or is reaching it ever possible?

SCHLESINGER: *No, not if I intend to continue making the sort of films I want to make. I think it's entirely dependent upon how well your last picture did. If I took everything that was shoved under the door and said: "Fine — my price is so-and-so. I'll need ten percent of the gross and a car standing by at all times" — then it would be terrific, provided that one could be happy making that kind of picture, and in that way. But it's never like that for me.*

QUESTION: Do you have a particular trait that you would like to be remembered for as a film-maker/artist?

SCHLESINGER: *I would hope that people would go to see my films and come away with something to think about — something about human relationships.* ■

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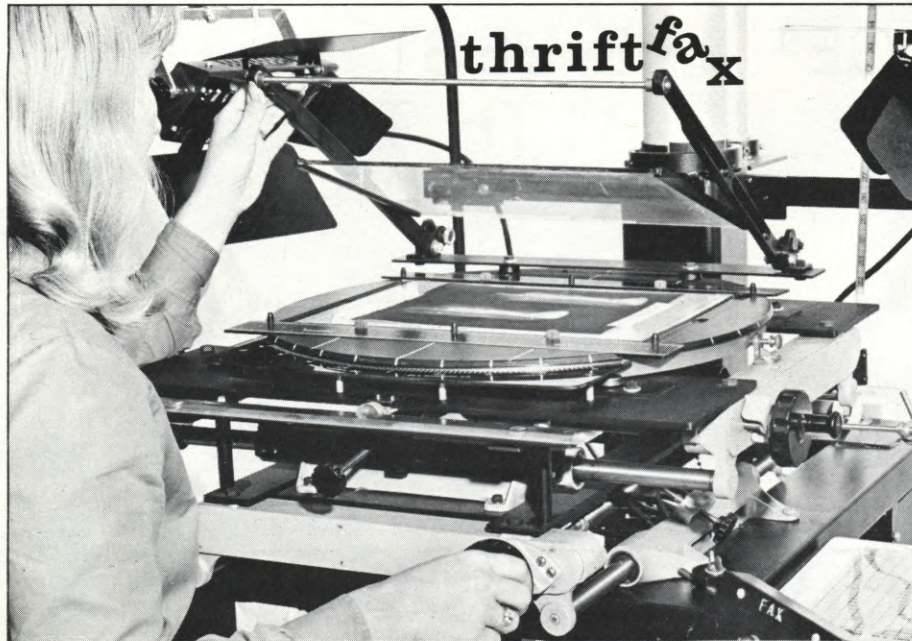


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PHOTOGRAPHING "LOCUST"
Continued from Page 657

have to change the lighting.

After testing many materials, I narrowed the choice down to a basic three: heavy, medium and light. The light was a gauze. The medium was what I call a "souffle". The heavy was a silk. Which one it was best to use at a given time depended upon the lighting conditions and the focal length.

Problems developed during preparation for shooting of the final riot sequence, where I had so many light sources. What happens when you use a net or silk is that wherever you've got a pinpoint highlight you get a cross or some other strange-looking effect, something like that of a star filter. However, I didn't feel that this star filter effect, which the nets and gauzes give you, was good for the picture. So when it came time to do the final sequence — with its many pinpoints of light coming from the theatre marquee, car headlights and searchlights — I decided that I could not use nets. Yet I had to maintain that softness. I experimented and decided to use regular Mitchell diffusion filters, in conjunction with a low-contrast filter. I used Mitchell C or D diffusion, depending upon which focal length of lens I was using, in order to achieve a kind of equal softness throughout the picture, without having the pinpoints of light in the final sequence become star crosses. I didn't want to use a fog filter, because that would have spread the light too much, gray it out, and cause the light sources to have halos around them.

This diffusion I've been describing was one way of achieving the fantasy point of view we had decided upon. The other was through the color palette. Early on, John and I talked about having a sort of "golden outlook", without romanticizing the subject matter. While Technicolor was never able to give us dailies like that, even though we asked for them beforehand, I made tests until I got what I wanted and then said, "Hey, I want everything to look like this." Even so, they came out green and purple and blue, and it was completely distracting. I guess I'll have to blame whoever invented the one-light print. This became popular because it was cheaper and you could see your dailies in color instead of black and white, but I rue the day that color-balanced printing went out with economy. It's so hard, for one thing, to look at a color print that is not balanced properly. It throws everybody's idea of what the scene is about completely into disorder. Even though I'm trained to look at dailies, I can't prevent my stomach from feeling a certain

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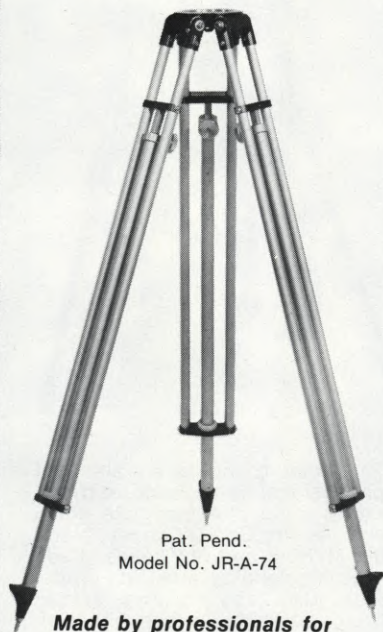
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way when the color balance is not right. Happily, however, after much work with the timer, the golden effect is just about correct in the release prints.

"THE DAY OF THE LOCUST" utilized very few actual locations — even exteriors. It's basically a studio-made picture. Initially I had hoped it would be the reverse, but I learned a lot from John Schlesinger on this picture. He really is a terrific film-maker and his reasons for doing things are absolutely right. His reason for not going on location boils down to *control*. Control is very important to a director and it's something that he has to sort of give up, in a way, on location.

You have to make do on location. You can't control the crowds that are coming to visit you. You can't control the noises about you. You can't control the concentration. It's much more difficult to work with actors on location, I think, than in a controlled situation. Now, that doesn't mean that there aren't hazards to working in the studio. There's the telephone; there's the agents calling and that sort of thing, but John just won't tolerate things like that. He doesn't stand for non-concentration of any kind. From his standpoint, in the studio he can control the action just exactly the way he wants it and he can get any kind of shot the ways he wants it — and make sure that he gets, and probably faster than on location.

I had always been a sort of proponent of shooting on location and I still like it very much — I like the reality you get there — but reality is not necessarily the most important thing in pictures. For a long time, in films, we went through a phase of non-reality. Then all that changed. We've now just completed a phase of ultra-reality. We've had it and I think it's turning back onto itself. There now seems to be more of a balance of location and studio filming, with the major decision being how best you can control what you're trying to do to get what you want. So achieving realness is not necessarily the most ideal aspect, particularly when you're involved in a story of interplay between people. Their dialogue and the nuances of action that involve them can be controlled much more precisely without the traffic and sound and other problems that are present on location — like shooting in the cold of night, for instance, when you're sleepy, instead of shooting night scenes during the day in the studio. These are all things that John considered in bringing "LOCUST" back into the studio. I would say that basically we had an 80-20 situation — 80% shot in the studio and 20% on location.

Many of the location scenes were ex-

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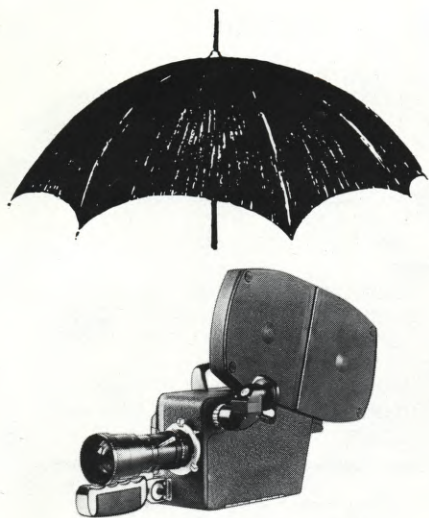
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teriors shot on the streets of Hollywood. The sequence at the base of the huge HOLLYWOOD sign was an exterior which would have been impossible to shoot in the studio, so it was shot on location in the Hollywood hills not more than a half-mile from the actual HOLLYWOOD sign. The reason we didn't use the real sign was because it was inaccessible and because, in the old days, it read HOLLYWOODLAND, instead of HOLLYWOOD. We worked out a system whereby we showed only the two letters, H and O, which were built on location, along with the little ice cream stand. It was my idea to devise a shot in which we would show what they had come up to see on a postcard before showing the two letters — which were of huge size, 70 feet tall. It would have cost a tremendous amount of money to build the whole sign, and it was really quite unnecessary.

The second idea that was suggested was to do a matte shot of two cars driving, with the HOLLYWOODLAND sign matted in over the hillside. But this would have cost five to seven thousand dollars. John liked my idea very much and chose it as a way of showing what they had come up to see.

Basically, the exteriors are all location exteriors — except for the courtyard apartments, the San Bernardino Arms, which was built on the Paramount lot over the B Tank, which is a tank that they flood with a backdrop behind it for sea scenes. The scenic background usually serves as the sky and they can paint it any color they want. They had it painted for a kind of white sky when we used it and it became the sky background that you saw when you looked out towards the street from the courtyard. What made it difficult was that there was no horizon. I had to create a horizon because the set was built up on jacks and we had to shoot out toward this backing. I had to bring in flats and devise a backing kind of at the last moment. What made it complicated was that there were several levels to the set and depending upon what level you shot from, your horizon changed. You had to recreate a different horizon at each level — the street level, the window level and the level of the courtyard itself. Some of the interiors for apartments leading off that courtyard were built on the B Tank set, but most of the scenes were duplicated inside the sound stage, where we had better control of the sound.

One of the few location interiors in the film was the brothel where a couple of sequences were shot, actually a home that once belonged to Gypsy Rose Lee, I believe. It was a good set and it worked well for us. I think one of the reasons John liked it so much was

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because of the main doorway with its glass front door. The scene in which the Karen Black character goes out for the first time as a prostitute was shot there and it was quite intricate. As originally shot, the scene started with an angle through a bathroom door showing her in front of the bathroom mirror putting on some lipstick and perfume. She moves out into the next room, closing the door and we see her checking herself in the full-length mirror there. Then we zoom back through the glass front door and she eventually appears and walks outside — that's after she's gone through three doors in one shot and covered a lot of territory. In the final cut, the first third of the scene (the bathroom part) was cut out.

That scene was tough to light, but the good thing about shooting with long lenses is that you can put the lights right up against your frame, particularly through doorways. It's only necessary to light what you want to see and the fact that you don't light in between just makes the scene eventually that much more delicious when you do. It's especially effective in a scene like this where there's such an obvious dramatic intent. She's timorous about turning her first trick and worried about whether she looks alright and wondering what it's going to be like. As played from the very beginning the scene was extraordinary. It started with making herself up and an appraisal of how she looked, and then the approval of the others and sort of being sent on her way by the team — the chauffeur to drive her and the madam sending her out. Finally, she's alone outside the door, facing what she has to do. It was a terrific scene, I thought, and she played it terrifically. Everything about it was good. I loved it.

Another of our few location interiors was the Hollywood Palladium, which was dressed to represent the Temple of lady evangelist Big Sister, a takeoff on Aimee Semple McPherson. We shot inside the large ballroom for three days on that sequence.

On this picture, for the first time since I started shooting in studio sound stages, I didn't have any scaffolding built for any of the sets. I specifically asked for no scaffolding. Instead, I used something that Gordon Willis has used a lot, but didn't invent, of course — and that's bounce light. We do this when we shoot in an actual location interior. We put up a few lights and bounce them off the ceiling. I simply used the same kind of treatment on the studio sets. It provides a kind of overall illumination, as if some light were coming from up above in the middle of the ceiling, where there are usually lights in a room. And then I use source

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lighting, as I always do anyway, to illuminate from whatever source is indicated in the scene.

In "LOCUST" we have a lot of light changes. People are always coming into a room, speaking about how dark and dreary it is, and flicking on the lights. Then they go zooming around turning on more lights. Lights are going on and off in this picture all the time. As for a definite lighting style in the film . . . I certainly didn't want it glamorous — nor was I interested in having it slick, because that would have defeated the kind of reality that these people were living, it seems to me. Not only that, but I have discovered a way of looking at life that is not slick. I don't think I've ever done anything slick. It's not that I can't do it; I know I can. It's just that I don't think I want to do it, because I don't see life that way. I see it differently.

Many excellent cameramen pre-plan their lighting meticulously, but I always attack each day with absolutely no foreknowledge of what I'm going to do. After I've read the script and feel that I know it, I usually don't re-read it, but come to work and ask the script supervisor what we are doing that day. Then I ask her to read the scenes to me, so that I can hear them coming from somebody else and perhaps get a different point of view about it. Often this reading aloud gives me an idea. It's all organic with me. It's all connected by my innards and by my brain, which has been thinking about the project for a long time. But when I'm actually doing it, I don't really pay specific attention to what we're doing. I just let it happen more or less cerebrally.

Basically, I'm a source lighter. I like working with *less* light, rather than *more* light. That means a lower key. I like to work with 100 foot-candles, rather than 400 foot-candles — or 8 foot-candles, rather than 30 foot-candles. I like the least amount of light to work with, because that's how I learned to light, and I can see my balance more easily at a lower key than at a higher key. That's what lighting is all about — balance. To get proper balance at a higher key I have to rely on looking through the contrast filter and a certain amount of guesswork and experience. But when I light in a low key, I make it just like it is and the actors move around not even knowing they're lit.

In "LOCUST" I didn't want the lighting style to be slick, but I didn't want to leave the people in darkness. I wanted to see them. John was always concerned with seeing the eyes of the actors. Karen Black has quite small and deepset eyes and they're quite hard to see, unless you light her precisely right

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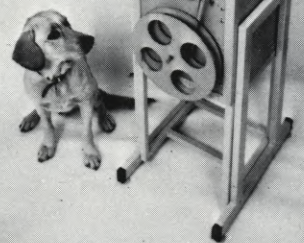
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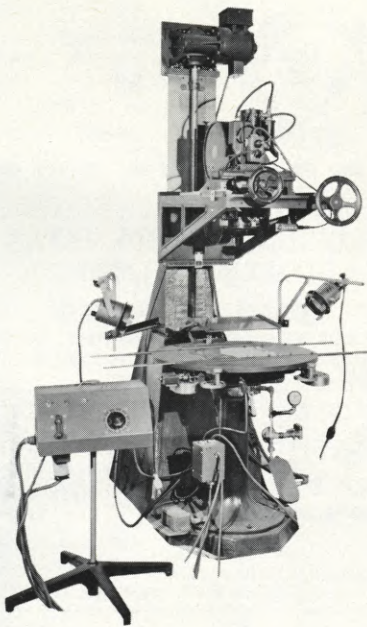


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or set a special eyelight for her. I remember that all through the picture I was struggling with John's desire to see her eyes. Hopefully, I was able to give him what he wanted.

During the filming of most of the picture I tried to keep the fantasy glamor effect quite subtle, even though I was using nets and silks. I just wanted the people to look good. But there was one sequence in which the effect was purposely intensified to make them look glamorous. That's the sequences in which Karen is sitting around the fire with the three men and they are eating quail and drinking tequila and there is a buildup of sensual tension.

That sequence, as written in the novel by Nathanael West, is very literal and John Schlesinger, in attempting to remain faithful to the novel, at first staged it in a literal way, with a dance and a song, etc. But it became a kind of joke for us because it was so bad as a literal sequence. It just was not working. So John decided to *abstract* it. In terms of the photography, that meant a certain stylization — the use of big closeups of faces and eyes and mouths eating and drinking. It involved shooting at 32 frames in order to slow down the action of eating and drinking and exchanging looks. I lit it with kicks to turn the characters into sort of glamor people, communicating through looks between one another, with the rapport of eating greasy quail and drinking tequila and sucking on lemons and things like that turning into a kind of sensual involvement. I did my best to make the people look zingy and sort of sensually involved.

That sequence, as it is now, certainly works for me better than the "turkey trot", as we used to call it, which was what we had before while trying to stick to what West had in mind. Sometimes you can do better with what an author has in mind by abstracting it, rather than by being literal, and I don't think anybody should be criticized for choosing a different method for showing what an author had in mind. The sequence I mentioned works perfectly in the abstracted fashion, whereas, it was a very bad sequence when we attempted to do it in the conventional way — through dialogue and literalization.

One of the more spectacular parts of "LOCUST" is the battle sequence for a film within the film supposedly being made about the Battle of Waterloo. The battlefield set was gigantic. It took up the whole of one huge sound stage and it was beautifully designed by Richard MacDonald. He had gotten a magnificent, dramatic sky backing and built hills in front of it. There was a scene of the model beforehand, so that you could see what it was going to look like

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when it was built.

When that sequence was ready to be shot we found ourselves very hard pressed for time. John was trying to do two things at once. He was trying to film the Battle of Waterloo, while shooting the sensual sequence with the quail and tequila and it was very rough on him, because he wanted to see what was going on in both areas. He sent the assistant director, Tim Zinnemann, over to kind of pre-stage the action of the battle scenes, and yet he was hanging in with me, working on the visualization of the tequila sequence, and sort of going back and forth in between.

The basic lighting of the battle sequence had been designed beforehand. There were several banks of lights and we designed the levels of the parallels where the lights were going to be, so that they would be low enough in the frame when we were off the set, so to speak, to show that we were inside a motion picture studio stage. That was all done prior to the time for shooting.

However, because it was impossible for me to leave the camera on one set where shooting was going on, in order to go and light the other, I called up Ted McCord and asked him if he would come back out of retirement to light the Battle of Waterloo sequence for me. It turned out that this wasn't possible, so I contacted a gaffer who was in the slick vein and could light the way they used to in the old days and told him to rough in the basic lighting. By the time I got free to concentrate on the battle sequence it was basically lit. I had to make changes, however. It's no good for a cameraman not to be there when a set is being lit, because there is bound to be a difference in ideas.

John had originally planned this sequence to begin with an explosion. Then some people walk through the frame in backlight and the scene opens up and carries you into the battle. The battle develops into more battle and then the director (of the film within the film) appears, riding on a boom arm, and the accoutrements of movie-making become evident and finally you end up on a closeup of the character played by Bill Atherton watching all this.

This played beautifully, but it ran much too long. So I suggested starting with just a static shot of the set — no one on it — just the wind blowing — then going directly to the battle. John liked the idea and we did it that way, but I had to change the lighting completely. Basically, however, lighting that huge set was just a matter of turning on all the lights above and flooding the studio with light.

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"LOCUST" was, of course, the final sequence in which the riot develops outside Grauman's Chinese Theatre during the premiere.

All through the production we kept thinking about how to do this final sequence. We thought of a million different things and kept going to various locations at different times in order to consider them. Richard MacDonald would make drawings of how he felt the Pan Pacific Auditorium could be used, or the Shrine Auditorium. We even thought of going out of town to a place like Stockton, or shooting it in front of a great theatre like the Fox Arlington in Santa Barbara.

None of these ideas were really satisfactory. It all boiled down to the fact that John knew that the importance of this sequence depended upon the amount of control he would have in staging and shooting it. He knew that it would be impossible to shoot it on Hollywood Boulevard outside the actual Chinese Theatre. Aside from having to narrow the camera angles to try to eliminate the modern aspects of the city, there would be the even more horrendous problem of how to control as many as 1,000 extras (to say nothing of on-lookers) night after night in the middle of Hollywood Boulevard. How would you know the extras from the real people, and how could you maintain control of any kind?

Clearly, that idea was totally impractical. So, it was decided by John Schlesinger and Richard MacDonald and John Lloyd, the art director, to build a set and shoot the entire sequence *inside* studio sound stages. They did the most extraordinary job of set building that I've ever seen in my life. In three weeks they put up this enormous set on three separate sound stages connected by their huge open bay doors. On one stage was Grauman's Chinese and its foyer. This opened into the second sound stage, which was Hollywood Boulevard. This opened into the third sound stage, which enclosed the parking lot and the street opposite the theatre.

All of this was built on the three sound stages, with the 25-foot-high doors between them open and converted into streets and the foyer of the theatre. You could stand at the end of one sound stage and shoot through the three stages a distance of more than 150 yards, which was incredible. All of this was constructed within three weeks, complete with the theatre, streets, sidewalks and other buildings. There were many meetings to decide how to position the "Hollywood Boulevard" portion of the set, so that automobile traffic could move back and forth and exit through darkened

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tunnels to the studio areas beyond the stages. We all had opinions as to whether the street should be positioned horizontally or vertically, whether it was more important to shoot straight on or down the street, and which plan would afford the most freedom in shooting.

At any rate, it was all ready for us to shoot in three weeks and it turned out to be the best — and most real — set I've ever worked on. The production designer and art director did a terrific job, I must say. Looking back now, with the benefit of hindsight, I can't imagine how the sequence could have been shot any other way. For the first week there were almost 1,000 extras, but John was able to control them completely. When they weren't on the set they were off on a separate sound stage someplace else, with their own little lunch boxes and places to be, and I could light without any noise or confusion. When we needed them they all came back onto the set.

There were some very special problems in shooting that sequence. What to do about the exhaust from the cars and the carbon monoxide that was filling the set, for example. There were great problems regarding how to over-shoot the set. Finally we had to paint the girders of all three stages black, so that I could overshoot and show what appeared to be a night sky, instead of lighted beams, and also so that the searchlights, when they hit the ceiling, wouldn't reflect the light back down from the padding, as if from a white card. The first time I brought one of those things onto the stage to make a test I was getting 75 foot-candles of bounce light. There were innumerable problems, but they were all worked out within three weeks and the set turned out to be the easiest and best that I've ever worked on.

As for the lighting of this sequence — there was plenty of it. The sequence depicted a motion picture premiere situation, which usually involves an immense amount of light. The huge sign advertising the picture is throwing out light; the searchlights are throwing out light; the flare from the flash bulbs and the auxiliary lighting used by the Fox-Movietone people are in evidence. It was not a darkened-street situation, but basically a well-lighted street situation. There was a certain amount of contrast involved by the very nature of the situation. For example, under the marquee there were glaring lights, but further away from the marquee it was much darker, and darker still inside the cars that were arriving.

In addition to all these practical light sources, I had "chicken coops" mounted above the stages to provide a

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basic overall light, no matter where the cameras were pointing. I duplicated the streetlights and used filters to correct the searchlights, so that their beams would be white, instead of mauve or purple. I had arcs mounted above the marquee of the theatre and they completed the lighting.

We used three cameras when we had the largest crowds of extras and two cameras when we had fewer people. Al Whitlock filled in around our longest shots with matte paintings in order to provide a context of the old Hollywood, which would have been impossible to achieve any other way.

I think it's a terrific sequence. It's so real, for one thing. It's the kind of thing you've heard about at soccer matches in South America or at dance halls in Boston — situations where a spark of something sets off a stampede of people. The sequence in the film reflects the dissatisfaction with life that comes from not being up in the front line and not getting near enough to the glory to make it worthwhile. If there are enough people in back who are not getting a good look, they will trample the people in front of them while they're rushing to get to the flame. It's what happens at a rock concert when all the tickets are sold and there are still 10,000 people outside who can't get in. You can't prevent this in people. It's what "LOCUST" is all about, and very important to the story. West's vision of a riot at a premiere that engulfs Hollywood and tears it apart is just a metaphor in which Hollywood represents all of life. It deals with people who can't get a piece of what everybody is after or who can't get close enough to the action to make their lives pay off. This becomes a seething, undulating thing in a crowd that can erupt at the slightest excuse.

I sincerely think that "THE DAY OF THE LOCUST" is a terrific picture. I really like it, and I feel that John Schlesinger has done the novel superbly in cinematic terms. To me it is very moving and, while there are inevitable shortcomings, it's still a fantastic movie. I just hope that the public will go to see it and like it.

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"MAN IN THE GLASS BOOTH"
 Continued from Page 702

sunlight got really hot outside, I'd quickly paint all of the windows, and if it got dull I'd rub the paint off. The main point I want to make is that there should be a balance between the interior and exterior portions of a scene, because balance is so important.

QUESTION: In such a situation, what do you think would be an ideal balance?

LEAVITT: If it is possible to get arcs or sufficient blue light inside, and you are able to pump enough light inside, you can expose for the interior and let the exterior go two stops hotter. For example, if you had F/5.6 inside and F/11 outside, it wouldn't be a bad balance. Anywhere from one to two stops difference would work out all right.

QUESTION: To get back to "THE MAN IN THE GLASS BOOTH" — did you use much moving camera in shooting it?

LEAVITT: Yes, we used a lot of moving camera — a lot of it. We were constantly covering the action with many camera moves in very long takes — takes that ran 300 to 500 feet.

QUESTION: I must say that you've had a lot of basic training on that sort of thing in working with Otto Preminger.

LEAVITT: Yes, in the six pictures I did with him we were always on dollies and booms, but he would always give me plenty of time to set those intricate scenes up. I'm very fond of him in that respect. He knows exactly what it's all about where moving the camera is concerned, and I always admired him for that. "THE MAN IN THE GLASS BOOTH" was made almost in the same way. Arthur Hiller did the same thing in combining what would ordinarily have been many set-ups into a single long take with many camera moves. Maximilian Schell, who plays the lead role, is such a wonderful actor that he could handle those long scenes. If he had to do one over a hundred times, he could do it the same way each time and do it well. He wouldn't get upset; he'd just do it right. He works hard as hell and does exactly what is required of him. It was great to work with him, as it was, also, with Arthur Hiller. The production unit on the picture was excellent and was made up of nice people. They were all behind me and helped me in many ways.

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INDUSTRY ACTIVITIES Continued from Page 709

of the respondents asking for films about engineering and 62% for films about building.

But the strongest concern of all was "attitudes about work." Asked about guidance subjects other than occupational information, 73% of the respondents said they wanted to see effective film coverage of that aspect. 60% asked for information on "job interviews and resumes," 49% for material on "knowing interests and aptitudes" and 48% for explorations of "the impact of technological change."

The nationwide survey was conducted by Modern Talking Picture Service, a distributor specializing in sponsored films. The survey showed that educators welcome free-loan films from sponsoring sources like business and industry, with some write-ins expressing a preference for this type of film as being more relevant, factual and up-to-date than the films that schools must pay for.

Career guidance films are used almost as heavily at the 7-9 grade level — 52% said that's where they use them — as in the senior year — 59%. Nearly unanimously, the educators said they use guidance films throughout the school year.

The best running time for a film is 25-30 minutes, according to 41% of the respondents, while 28% prefer 30-40 minutes.

75% said they would like to have teacher's guides or other collateral material such as wall charts or posters, student take-home literature or tests, provided with more films than now have it.

Copies of the survey report, "What High Schools Want from Sponsored Career Guidance Films", are available free from Modern Talking Picture Service, 2323 New Hyde Park Road, New Hyde Park, New York 11040. ■

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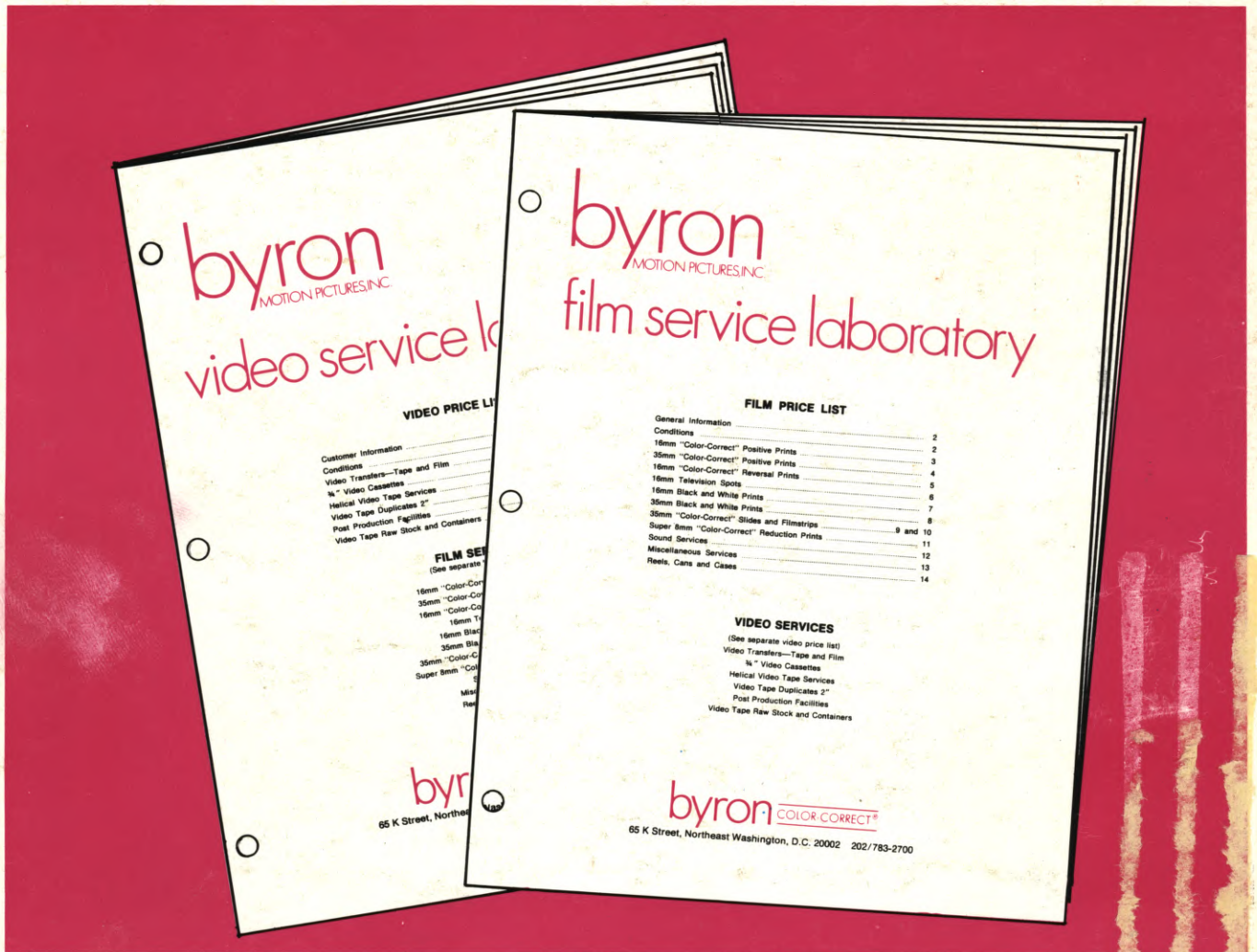
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