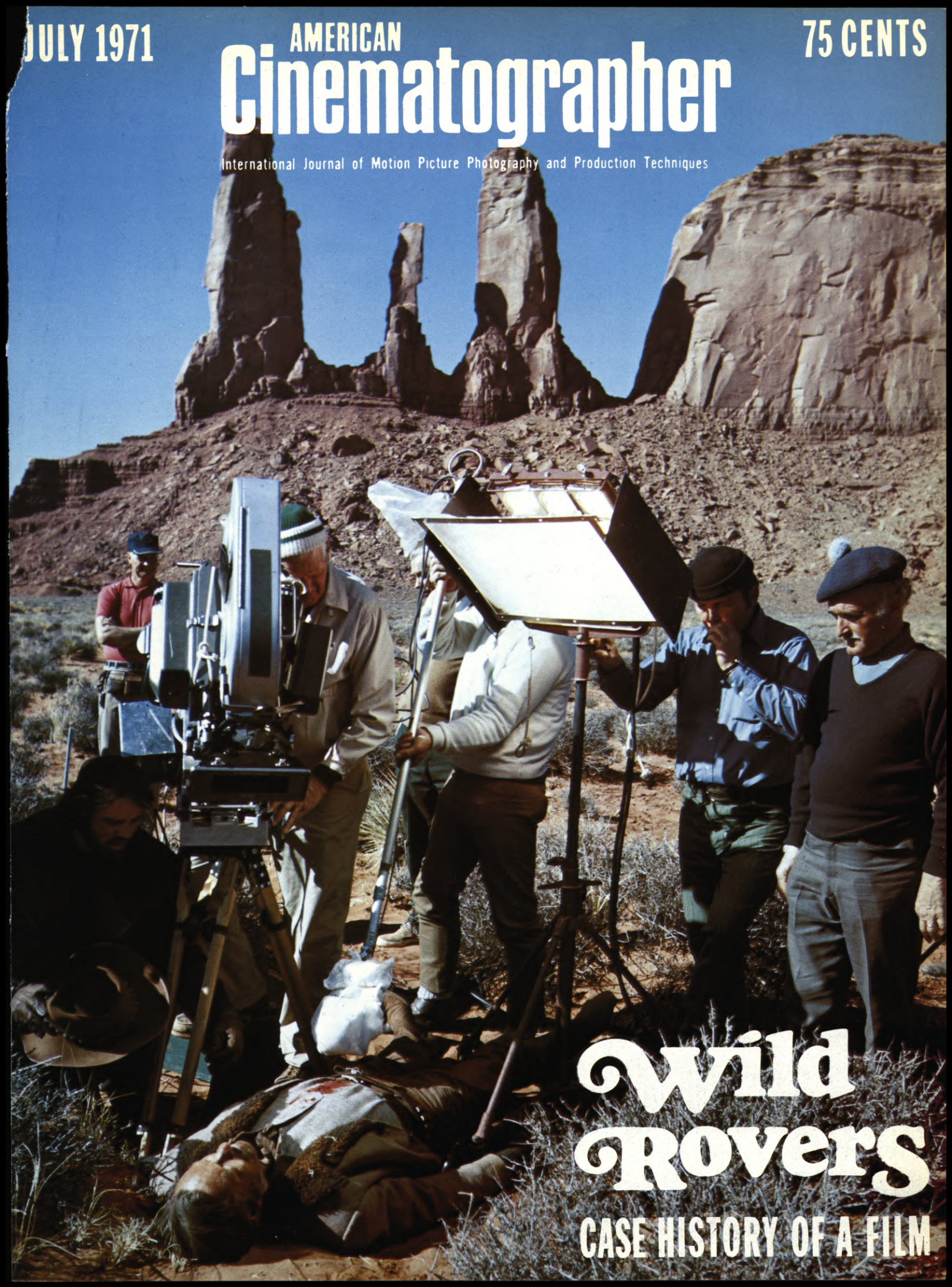


JULY 1971

AMERICAN
Cinematographer

75 CENTS

International Journal of Motion Picture Photography and Production Techniques



**Wild
Rovers**
CASE HISTORY OF A FILM

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Prime Used Equipment at Lowest Prices

35MM CAMERAS

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- MITCHELL NC**, rackover, serial #105; 40, 50, 75, 100mm Baltar lenses, Matte box, 2-1000' Mags, 220 Motor, Cable, Cases. ... \$ 3,750
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- MITCHELL R-35**, MKII serial #112, 25, 50, 75mm Super Baltar lenses, Matte box, Base plate, follow focus finder, 110 volt Variable Speed Motor, 2-1000' Mags, Cables, Cases. \$ 6,250
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- MITCHELL HIGH SPEED STANDARD**, rackover, serial #1018; 25, 30, 35, 40, 50, 75, 100mm Baltar lenses, Matte boxes, Follow focus finder, 2-1000' Mags, Variable and high speed Motors, Cables, Cases. \$ 2,975
- MITCHELL HIGH SPEED STANDARD**, rackover, serial #1019; 25, 30, 35, 40, 50, 75, 100mm Baltar lenses, Matte boxes, Follow focus finder, 2-1000' Mags, Variable and high speed Motors, Cables, Cases. \$ 2,975

- ARRIFLEX IIC HIGH SPEED**, serial #8021; 32, 50, 75mm Cooke lenses, Matte box, 2-400' Mags, High speed and Variable speed Motors, 2 Batteries, Cables, Hi hat, Case. \$ 3,250
- ARRIFLEX IIC HIGH SPEED**, serial #7431; 32, 50, 75mm Cooke lenses, Matte box, 2-400' Mags, High speed and Variable speed Motors, 2 Batteries, Cables, Hi hat, Case. \$ 3,250
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- AURICON SUPER 1200**, serial #32325, Variable Density Galvo, Optical Amplifier, Mike, Cables, 3-1200' Mags, 15, 25, 63mm lenses, Finder Door, Cases. \$ 1,725
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The Eclair NPR gives you blimp-free silent running with any lens. Any lens.

Rotating two-lens turret lets you switch *in seconds* to another lens. And you get a choice of lens mounts.

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The NPR's positive cam turret can be rotated in seconds, of course. The large-diameter Eclair bayonet mount provides the rugged and precision seating required by wide angle and zoom lenses. The other standard lens mount is the threaded "C" mount. Most lenses

are available with the Eclair bayonet mount. And you can order the NPR turret with a variety of mounts, including Nikon, Arriflex and Mitchell.

For a free NPR brochure, write to us at 7262 Melrose Ave., Los Angeles, Calif. 90046; or at 73 S. Central Ave., Valley Stream, N.Y. 11580.

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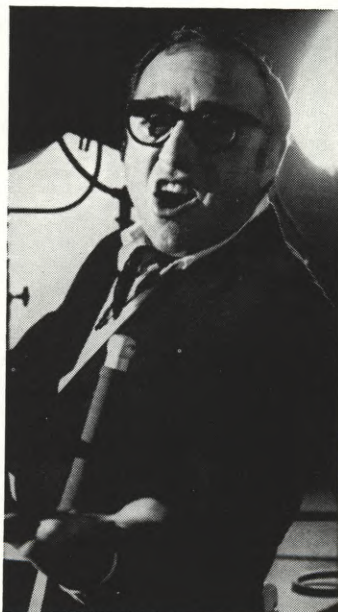
NPR: THE SUPER 16 CAMERA

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Who knows?

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your set. If there's a 0.95 lens or a high speed Milliken on your list, we don't have to scour the town looking for one. It's in our inventory.

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We don't want anyone asking us "what the hell's wrong now?"

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JULY, 1971

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Herb A. Lightman
editor

Three Tyler
editorial assistant

Milt Darnell
production control

Jan Mazza
advertising manager

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accounting

Pat Barrier
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Editorial Advisory Board
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Winton Hoch
George Mitchell
Kemp Niver
Harold Rosson
Walter Streng

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

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

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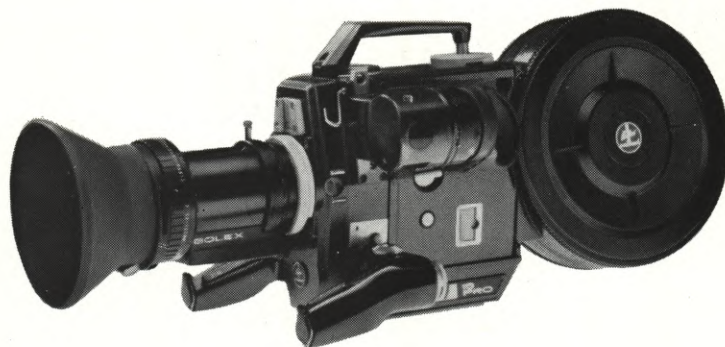
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ON THE COVER: On location in Monument Valley, Utah, for filming of Blake Edward's "WILD ROVERS", MGM camera crew, under Director of Photography Philip Lathrop, ASC, (extreme right) prepares to shoot a close shot of William Holden "dying". Photograph by Bob Willoughby

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How much do you want to know about BOLEX 16 PRO?

I'd like to know more about:

THE MAGAZINE

- Coaxial for 400' reels or cores.
- Compact light and inexpensive
- Sprocketless design for quick loading
- Footage counters for each chamber
- Rear-mounted for optimum mobility

FILM THREADING

- Fully automatically in 3 seconds
- Fully automatic film take-up in 400' magazine
- Signal light tells when camera is ready to shoot
- Light signals when empty
- Built-in cutter for removing partially exposed film

MOTOR DRIVE

- Crystal controlled for sync sound filming
- One electronically controlled motor for all filming needs
- Variable speeds 16 to 50 fps; 16-100 fps models available
- Forward and reverse
- Single frame filming
- Instant start and stop—no blank frames between scenes

SOUND

- Double system at 24 or 25 fps
- Super quiet—no blimp needed
- Wireless synch sound shooting with accuracy ± 1 frame per 1,000 feet
- Automatic slating lamp
- Single system sound model available

FILMING AUTOMATION

- Fully automatic exposure control
- Variable speed power zooming
- Variable speed power focusing
- All controls built into handgrips
- Manual over-rides on all controls
- Remote control possible for all functions

EXPOSURE CONTROL

- Automatic, through-the-lens
- Manual over-ride
- Film speeds of 12 to 1600 ASA
- Meter coupled to camera speed control
- f-number visible in viewfinder
- Audible signal when insufficient light

LENSES

- Wide range of zoom lenses
- Extreme wide angle lens
- Rugged bayonet mount
- Lens controls coupled to servo motor
- Silent operation of powered lens controls
- Shock-absorbing rubber lens shade

VIEWFINDER

- Practically flickerless mirror shutter reflex viewing
- Camera stops without mirror blackout
- Possibility of right or left-eye viewing
- 20X magnification
- Instant change from ground glass to clear glass
- TV and 16mm frame markings
- Can be rotated 45, 90, and 180 degrees
- Indicates f-stops
- Remote viewing possibility

FILM TRANSPORT

- Very low pressure required at pressure plate
- High-precision single tip claw transports and registers film
- Superb picture steadiness better than 0.1%

POWER PACK

- 12V rechargeable battery
- Plug-in electronic modules
- Plug-in crystal synch controls
- Outlets for connecting tape recorder, time lapse units and other accessories
- Choice of powerbelt or powerpack
- Signal light on camera shows condition of battery
- All of the above

BOLEX 16 PRO

If, in addition to information, you'd like a demonstration of the Bolex 16 PRO, write Pailard Incorporated, 1900 Lower Road, Linden, New Jersey 07036. We'll notify you when we'll be in your neighborhood.

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Wherever you go, whatever the shooting situation, CINE 60's exclusive Power Belt gives you the power you need to run every professional camera on the market. Plus the all-important mobility to go where the action is (how do you think recent skiing and motorcycle movies were made?).

The Power Belt is as convenient to use as it is foolproof. Available in voltages from 6 to 30V, this handsome, easy-to-wear unit features high capacity, rechargeable nickel-cadmium cells. With its built-in charging unit, the Power Belt is ready to go. And wherever you go, you'll find its sealed, trouble-free design means day-in, day-out reliability. In the event of a short circuit, a built-in automatic overload switch disconnects the batteries, resetting when normal conditions are restored.

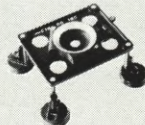
Why put up with awkward battery cases and long cables? Or bulky boxes that tug your shoulder and keep you off-balance? Especially when you can have the CINE 60 Power Belt—now the standard power supply worldwide.

For increased maneuverability, an accessory 6-foot coiled power cable (11" retracted) is available for use with Arriflex and other cameras.

CINE 60 has a number of other exclusive time- and money-saving products for the professional filmmaker, including:

The Vacu-Platform suction-actuated platform which can be posi-

tively fastened to any smooth surface (car tops, floors, etc.) without marring. Especially useful for low-angle work, it mates with standard tripod heads.



The Single Universal Shoulder Pod the "unipod" is a lightweight shoulder mount that accepts all cameras. Easily removable between takes, it keeps the camera in the ideal shooting position while offering the maneuverability of single-shoulder construction. Used with the CINE 60 Uni-Eclair Mount, this is the only practical pod for the Eclair NPR-16.



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THE HEDEN ZOOM LENS REMOTE CONTROL SYSTEM



"Officially introduced to the trade at Photokina, the Heden Electronic Remote Control System for use with zoom lenses on 35mm motion picture cameras is one of the most advanced instruments of its type and features several unique characteristics."

American Cinematographer, December 1970

"We at Samuelsons pride ourselves in having all the latest and best equipment available from anywhere in the World. The Heden Zoom Control system from Sweden is a typical case in point."

Samuelson Film Service Ltd.

American Cinematographer, February 1971

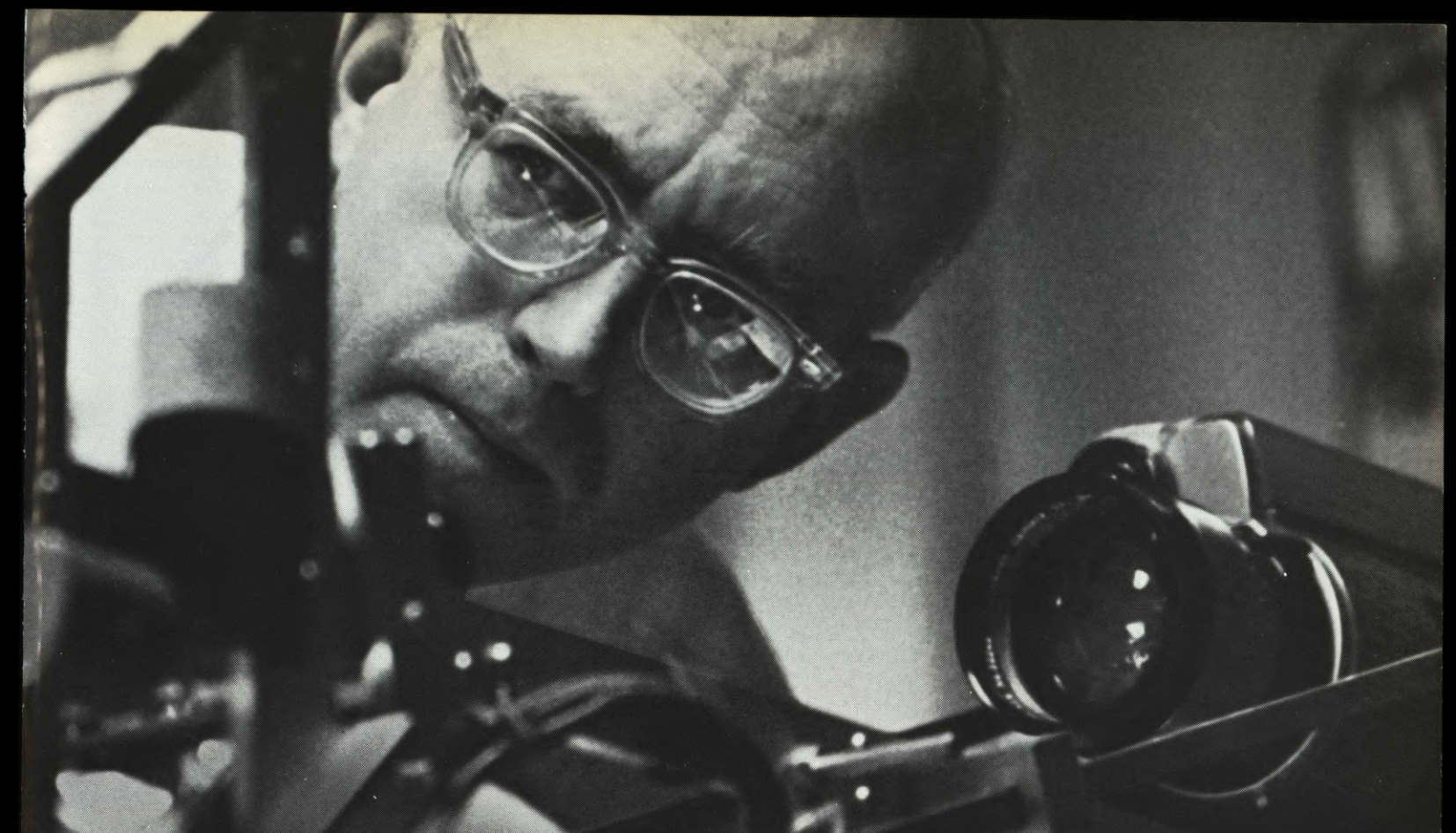
- * The Heden controls are easily mounted and without any mesh, alteration or possible damage to the lens mechanism whatsoever.
- * Smooth as silk zoom with a 2 seconds to 2 minutes zoom range.
- * Variable zoom rate to presettable maximum speed by trigger control.
- * Remote focus control at the operators fingertips.
- * Separate remote focus control for the assistant more accurate than the lens scale itself.
- * The two focus controls may be used in combination to change focus from one pre-set position to the other at the flick of a switch.
- * The zooming control and the focusing control performs two separate functions.
- * The electronics of the control unit, together with the motor unit, form a complete servo system and any potential variation in the lens torque is precisely compensated for by the electronics.
- * Available for Angénieux 12-120, 12-240 and 25-250mm zoom lenses.
- * Can be placed in Arriflex blimps, Mitchell-blimps etc.
- * "Meets high professional demands."

Swedish Film Institute, Stockholm

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Can the surgeon be the cameraman in the same place, at the same time?

He can when the surgeon is an inventive physician and educator, who photographed a cleft palate operation as he himself performed it.

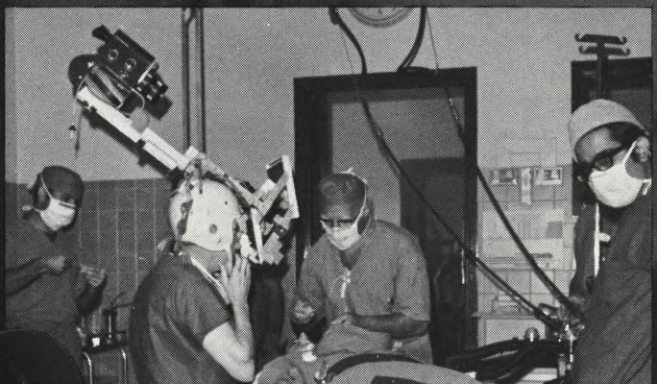
Dr. Howard W. Smith serves as Chief of Service of Otolaryngology at St. Raphael Hospital in New Haven, Conn., and is assistant clinical professor at the Yale School of Medicine. He felt the need to record on film his various specialties and in particular the cleft palate procedure. The problem was placing the camera and lights in the same position normally occupied by the physician.

After three years of dedicated and painstaking research, Dr. Smith achieved his goal. Using a football helmet and a complex system of lights and mirrors, he succeeded in photographing precisely what he is seeing and doing. The complete unit is counterbalanced by a 22 pound weight and is totally effortless in the operating room. The doctor is his own photographer.

The camera he used was the Canon Scoopic 16. Because of its zoom lens of high resolving power, excellent color rendition and total flatness at film plane. Its rechargeable nicad battery handles up

to 1000 ft. of film on a single charging. Its contoured hand grip is the finest available in 16mm cinematography today. Loading is semi-automatic. Canon salutes Dr. Smith for his achievements and dedication.

You may not need to use the Canon Scoopic 16 the way Dr. Smith did. But if you want a one-hand movie camera that lets you shoot everything, and goof nothing, you'll find the Scoopic 16 the perfect companion for leisure and vacation time film making. Only \$1250. See the Scoopic 16 at your local authorized Canon dealer, or contact us directly.



Actual operating room scene.

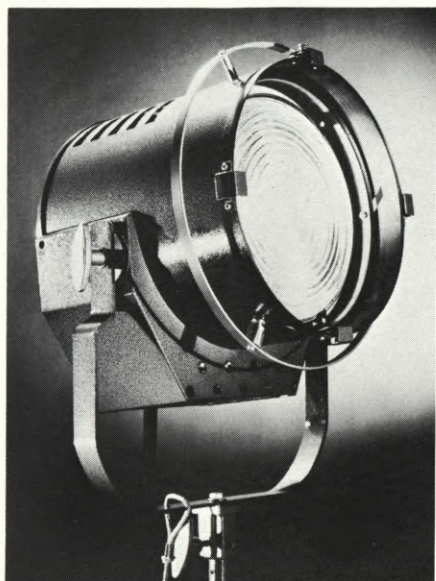


Canon SCOOPIC 16

Canon USA, Inc.
64-10 Queens Boulevard, Woodside, New York 11377

WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE



NEW QUARTZ FRESNEL SPOT

Colortran has introduced the first fresnel spotlight totally designed for the new "quartz" lamps—the 10" Ring-Focus Fresnel. This new 2000 watt light features a unique ring-focus mechanism which permits focusing from any point around the housing. The Bi-post lamp socket remains stationary; thus, no flexing of the input wiring. The new floating split-diamond socket design (patent pending) provides 4-point contact for longer lamp life and eliminates base cracking. Thrust-out relamping permits globe changes without moving the fixture or disturbing barn door adjustment. It weighs just 25 lbs. Full line of accessories available.

The light accepts either 2000 watt or 1500 watt 3200° K mogul Bi-post lamps. It is available in both the hanging model for grid use or stand model for floor operation in 1kW, 2kW, and 5kW models. For additional information write to Berkey Colortran, Inc., 1015 Chestnut Street, Burbank, California 91502, (213/843-1200).

TREISE OFFERS COMPLETE LINE OF FILM ROLLERS

Now available from Treise Engineering is a complete line of film rollers for lab processors, ranging in size from 2-1/2" O.D. to 7-3/8" O.D. and offered in 8/16mm, 16/35mm, and 70mm. According to the manufacturer, these new rollers are guaranteed to roll free and to protect the film from damage.

"Our unique ball-bearing design insures minimum film pull and provides exceptionally smooth processor performance," says Carl Treise, President. "All rollers are precision-molded entirely of durable plastic, including the core itself. Moreover, the lands in the rollers are angled so that the film 'rides' with only the outside edges touching. The film image never comes in contact with the roller and thus never receives the slightest scratch or abrasion."

In addition to standard rollers, Treise provides "Soft-Touch" Rollers for use with unperforated film, multi-perforated film, or any type of film on tendency drive processors. These new rollers feature special "soft-touch" tires composed of tiny silicon or rubber knobs that firmly grip the film and move it along so smoothly that it never receives any abrasion, no matter how high the speed.

Treise Film Rollers are provided for shaft diameters 3/8", 1/2", or 5/8". Choice of stainless steel ball bearings, nylon ball bearings, or plastic bushings. For complete information, write to Treise Engineering, Inc., 1941 First Street, San Fernando, California 91340.



HERVIC CORP INTRODUCES BEAULIEU 16MM CAMERA WITH BUILT-IN POWER ZOOM

Hervic Corporation/Cinema Beaulieu announces the introduction of the new Beaulieu R16B(PZ) 16mm camera with built-in power zoom. The new R16B(PZ) provides an integral power zoom (which is coupled to the fine Angenieux 12-120mm "auto" zoom lens) providing an infinitely variable zoom range from three (3) to fifteen (15) seconds. Zoom speeds can be

changed while running. The built-in power zoom can be manually overridden when desired. Zoom speed is continuously smooth and even, with instant (and absolute) Start-Stop. Power zoom controls are ideally located for the cameraman's convenience in operation.

An additional new exciting feature is the fully automatic Pre-Focus control. Fingertip pressure on the Pre-Focus control button instantly and automatically zooms the lens out to its maximum telephoto position, and—at the same time—automatically opens the diaphragm to its maximum aperture. The camera operator is instantly provided with the shallowest possible depth of field required for ultra critical focusing.

Some of the other features found on the new Beaulieu R16B(PZ) camera are: Fully Automatic Exposure Control System, Lens Interchangeability, Mirrored Shutter, Extremely Bright Reflex Viewfinder, Camera Body: Weight 4 1/4 lbs., plus, a full range of professional accessories, including a "sync" generator and 200 ft. daylight-load 16mm magazine.

The price of the new Beaulieu R16B(PZ) 16mm camera with built-in power zoom and Angenieux 12-120mm "auto" zoom lens is \$2,374.50.

For further information, write Hervic Corporation/Cinema Beaulieu, 14225 Ventura Boulevard, Sherman Oaks, California 91403.

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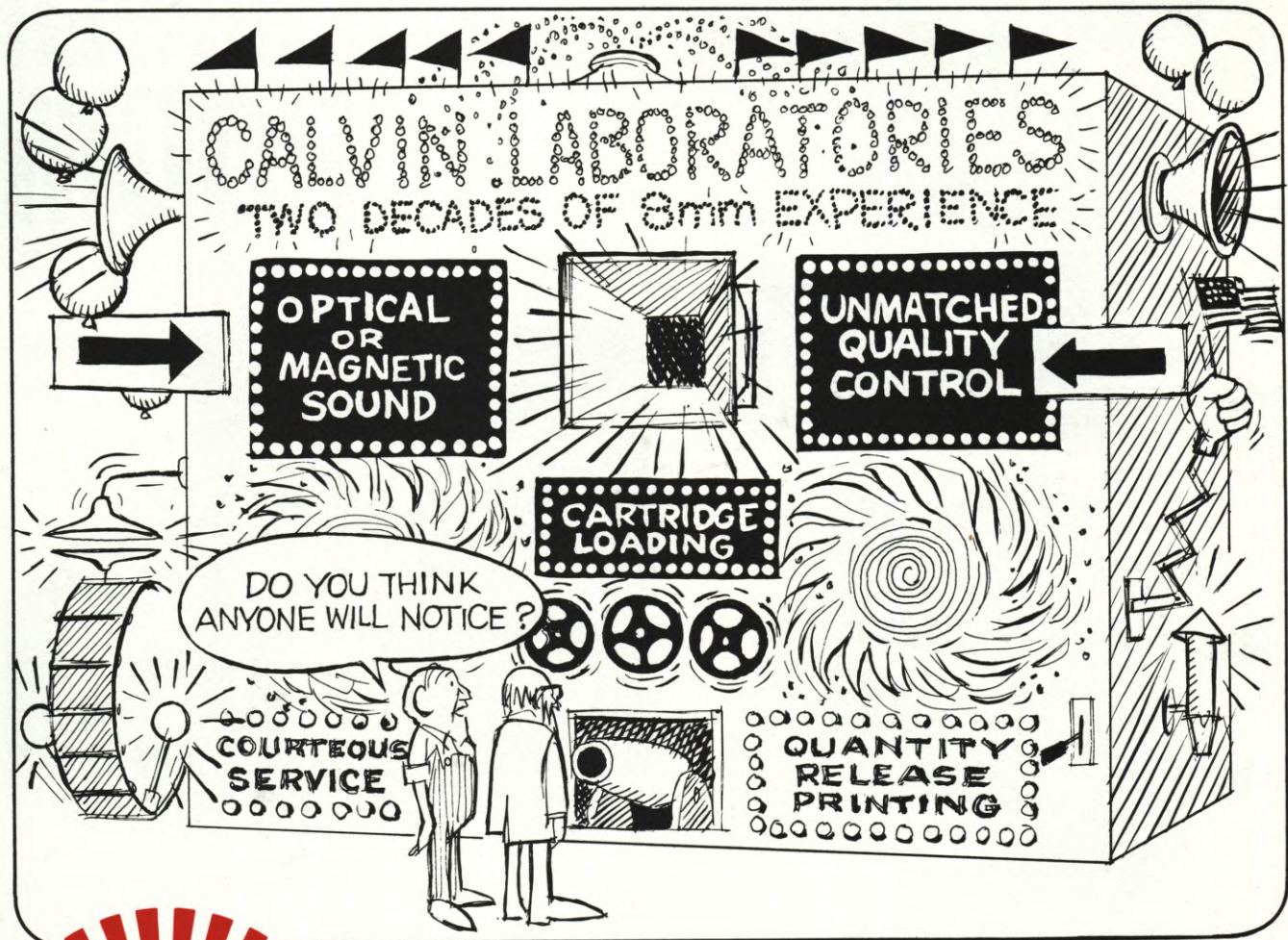
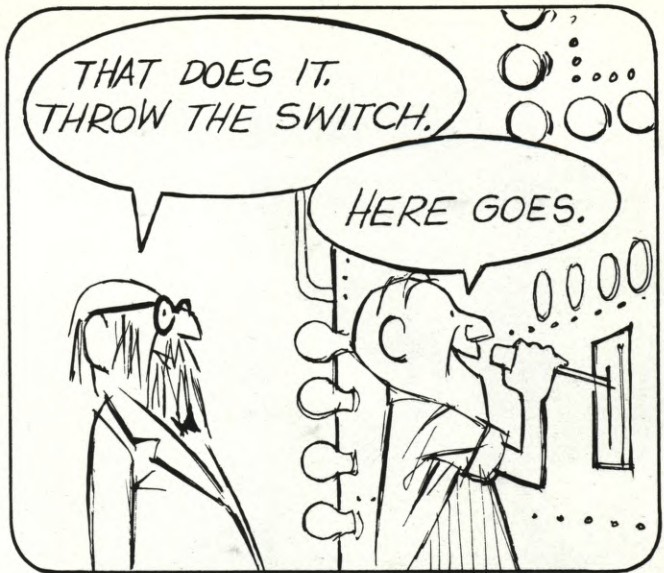
An edge identification printer for use on either printing or processing machines designated CE-EIP has been introduced by Carter Equipment Co., Inc., 232 So. Glasgow Ave., Inglewood, Calif. 90301. The CE-EIP edge identification printer enables you to print your own trade-mark, call letter, logo, or other information on the edge of any film prior to processing and achieve permanent identification on every foot of film at no increase in operating cost and at no change in present quality or reliability.

The CE-EIP edge identification printer is, in fact, a small sprocketless contact printer. Driven by the film itself, the printer uses as a negative any logo or other artwork reduced to a small film clip (cut from 35mm, 4x5, etc.).

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The CE-EIP edge identification printers sell for:

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*with BUILT-IN POWER ZOOM



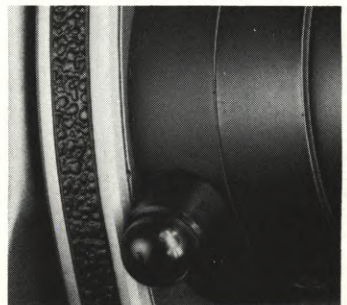
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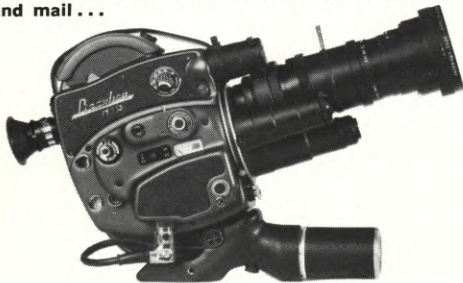


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For further information on the R16B(PZ), please fill out and mail . . .



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Collins used the most modern 16mm equipment available in turning out his eye and ear pleasing product. He had ten cameras on hand, including Arris, Eclairs, Bolexes and Photo Sonics. He used a multiple camera technique combined with crystal controlled sync sound and says that the approach to filming he used would have been impossible without this latest technique in sound and film recording. He filmed

in the summer and in the winter, with the temperature dropping to as low as 15° below and the snow piling up to his waist. He shot from hilltops and helicopters, in the outdoors under nothing but existing daylight and indoors with quartz and xenon lamps. He shot to playback tracks that were in perfect sync thanks to an exclusive Group One technique developed by soundman Bruce Bisenz. Above all, he nurtured his assignment with the careful eye of a skilled cinematographer. The results spoke for themselves and the Academy of Television Arts and Sciences replied with its highest honor.

We're happy to report that all the major equipment used by Collins and Group One was supplied by Alan Gordon Enterprises Inc. We're proud to have played a part in the success of the show.

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**ARRIFLEX
16 S/B**

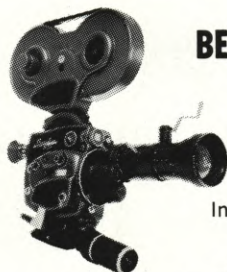
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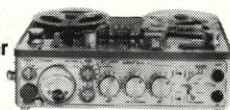
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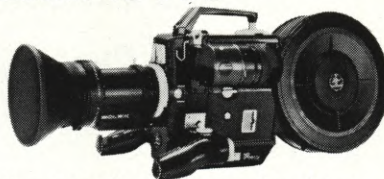
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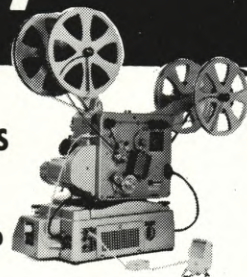
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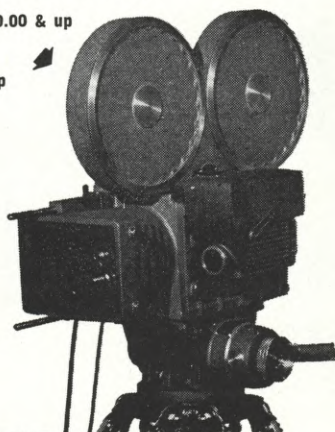
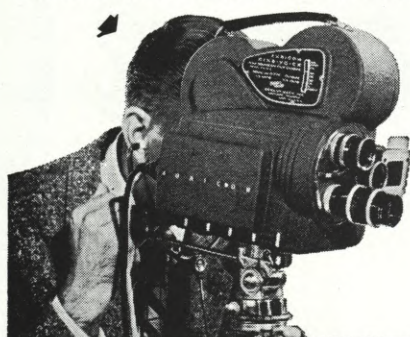


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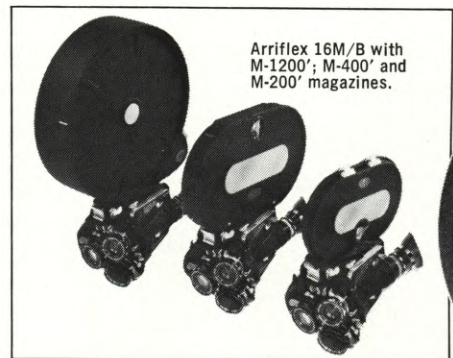
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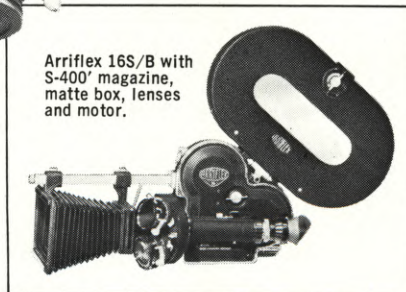
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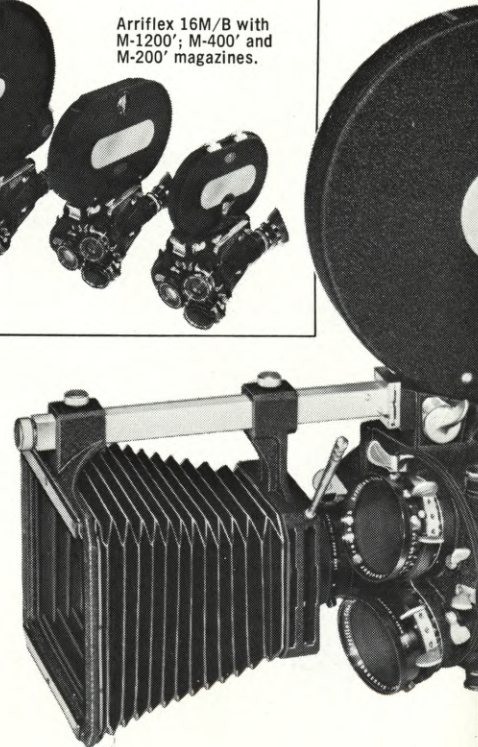
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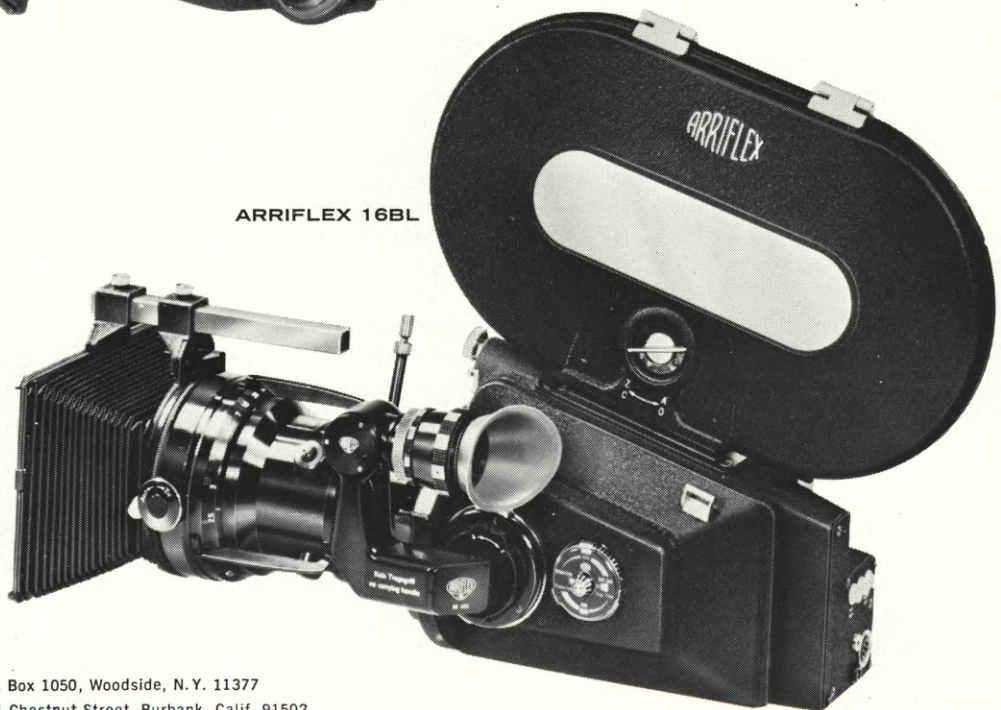


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CINEMA WORKSHOP



By ANTON WILSON

FILM REGISTRATION

Registration accuracy is one of the most important criteria of a professional motion picture camera. Poor registration causes the image to jump and vibrate on the screen and is particularly objectionable for multiple-screen or split-screen opticals and titles. It is the camera movement that is responsible for precise image steadiness. This mechanism advances each successive frame into position and accurately registers it for exposure, which is no simple task. The film has a finite mass that must be accelerated to a fantastic velocity as it is being advanced to the next frame. It then must be stopped dead, precisely in the correct aperture position. This film advance cycle must be accomplished in less than 1/50 of a second and be repeated 24 times a second with consistent accuracy.

It is difficult attempting to relate to a piece of film being advanced inside a camera. Therefore, imagine a large Mack truck accelerating down the highway to 100 mph. Upon reaching 100 mph the driver sees an egg in the middle of the road 100 yards ahead. He applies the brakes and goes into a screeching panic stop. When the truck finally comes to a halt, its front wheel is actually just touching the egg but hasn't rolled over it. Now picture the driver going back and repeating this over and over with the same precise results. This analogy may seem a bit melodramatic; however, it does present an accurate idea of the task the camera movement is designed to perform.

In non-professional and most semi-professional cameras, the movement consists of the aperture plate, pressure plate, and a pull-down claw. The pressure plate is spring-loaded and sandwiches the film against the aperture plate. An advance stroke consists of the pull-down claw entering a perforation in the film and accelerating it to the next frame; however, it is only the friction of the pressure plate and aperture plate sandwiching the film that brings it to a halt in the next position. As you can imagine, it is difficult to position the film by relying predominantly on the

plate friction for steadiness and accuracy. Surprisingly, this system functions better than its simplicity would suggest and it is quite acceptable for non-professional and even some professional applications.

Most professional cameras, however, employ some additional system for precisely registering each successive frame in exactly the identical position within the aperture. Such a system usually employs some form of pin registration. One of the earliest forms of pin registration was a system designed by A.S. Howell for the Bell & Howell 2709 studio cameras. The heart of the device was two pilot pins firmly affixed to either side of the aperture plate. One pin is dimensioned to exactly fill a film perforation, both height and width, while the other pin is dimensioned to tightly fit just the height, with some clearance in width. The film slides through a moveable guide or "shuttle" located behind the aperture plate. During an advance stroke, the shuttle swings back and a set of pull-down claws engage the film perforations and advance the film to the next position. At this point the shuttle swings forward and impales the film firmly on the two pilot pins. Because these pilot pins are part of the aperture and dimensioned to exactly the size of the perforation, the film is precisely located frame after frame. Although the 2709 camera is a thing of the past, an almost identical system is employed in the Oxberry animation and printer cameras and is considered by many to still be the most accurate method of registration. (This B & H shuttle system is capable of repeatable registration accuracy of 30 millionths of an inch.)

An equally successful system is the Mitchell Eccentric movement. In this case the film-guide channel is stationary and it is the registration pins that move. During an advance stroke, a set of claws advances the film to the next position. At this point an additional pair of pins slides into the film perforations from behind. Like the B & H pilot pins, these moveable registration pins are dimensioned to exactly the size of the film perforation and, thus, each successive

frame is rigidly "nailed" to the exact same spot.

Two things should be obvious. For the system to function properly the registration pins must be dimensioned absolutely to the size of the perforation
Continued on Page 722

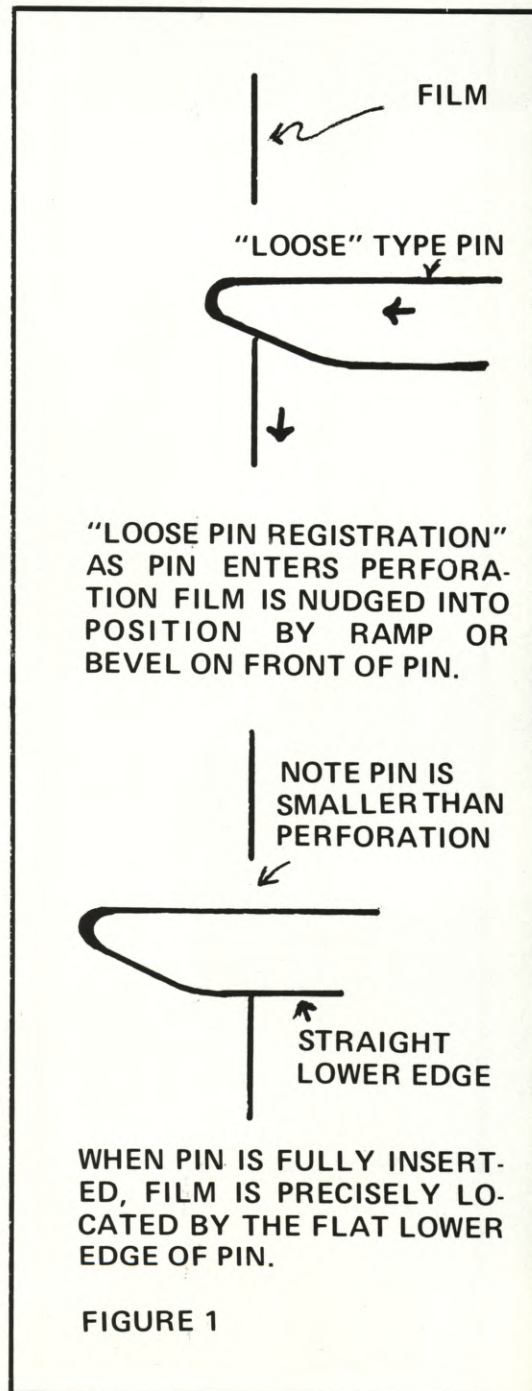


FIGURE 1

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*April 4 quote from Director of Photography Bob Jessup stating his preference for Victor Duncan package.

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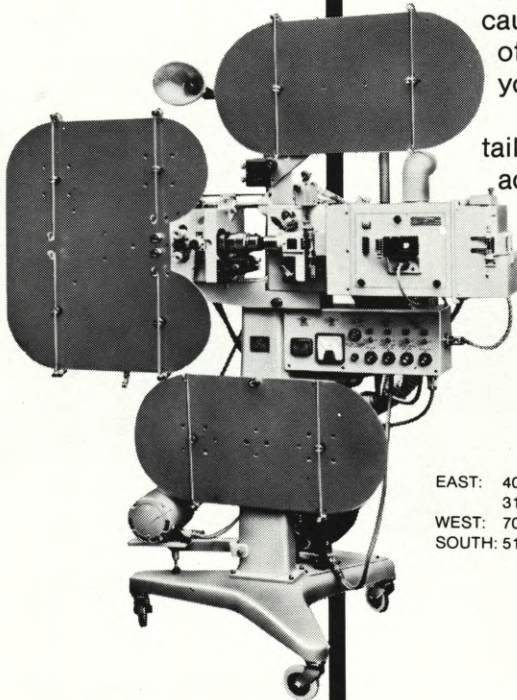
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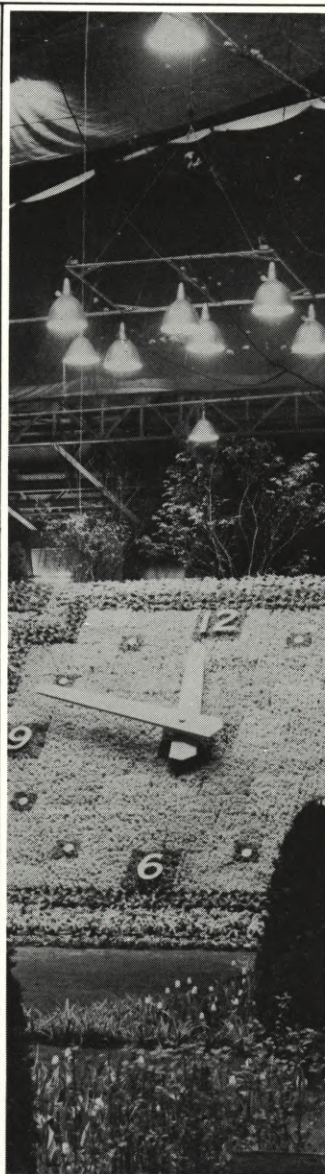
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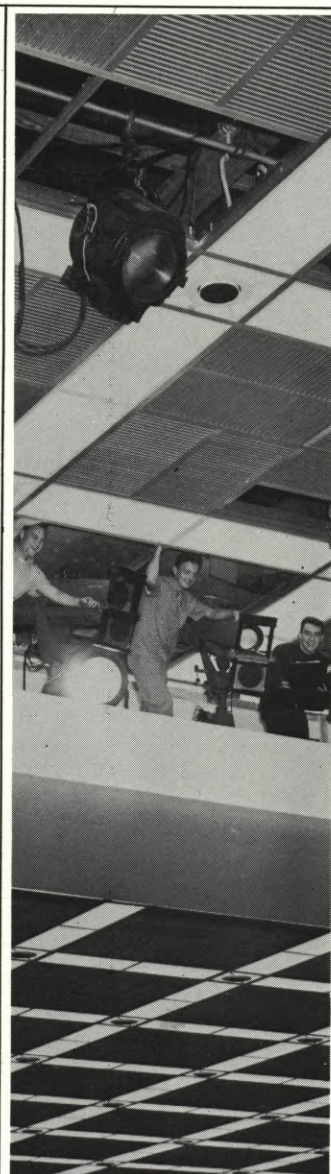
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Wild Rovers

CASE HISTORY OF A FILM

Observing production of a major studio Western feature from start to finish proves to be an inspiring and memorable experience for *Cinematographer* Editor

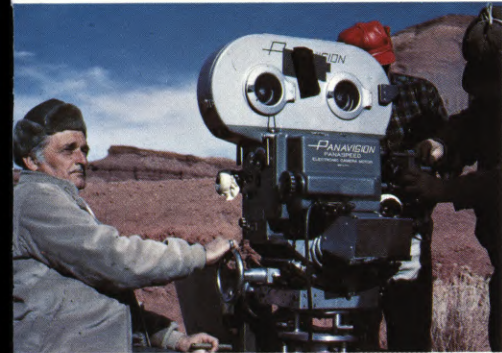
By HERB A. LIGHTMAN

The secretary buzzes to tell me that Ken Wales is calling from MGM. The friendly, be-of-good-cheer voice comes over the phone: "Hello, old friend! I just called to tell you what we're up to out here." What they're up to out there is pre-production on a Western feature called "WILD ROVERS", which will star William Holden and Ryan O'Neal. Ken is co-producing, together with Blake Edwards. Blake will direct from his own original screenplay. The film will be shot mainly on location in several picturesque areas of Arizona and Utah. The Director of Photography is to be Philip Lathrop, ASC, whom I haven't watched in action since he was doing those incredible things on "THEY SHOOT HORSES, DON'T THEY?" (See *AMERICAN CINEMATOG-*





(LEFT) Wife of writer-producer-director Blake Edwards, Julie Andrews, often visited locations during filming of "WILD ROVERS". (CENTER) Panavision Reflex camera, equipped with Dynalens, was used on Chapman crane to film long trucking shots in Monument Valley and other locations. (RIGHT) Blake Edwards quietly observes filming of a scene. (BELOW LEFT) Director of Photography Philip Lathrop, ASC, checks camera set-up. (CENTER) Authentic cook-tent of the period was erected for round-up sequence. (RIGHT) Camera crew films low-angle shot of final chase.

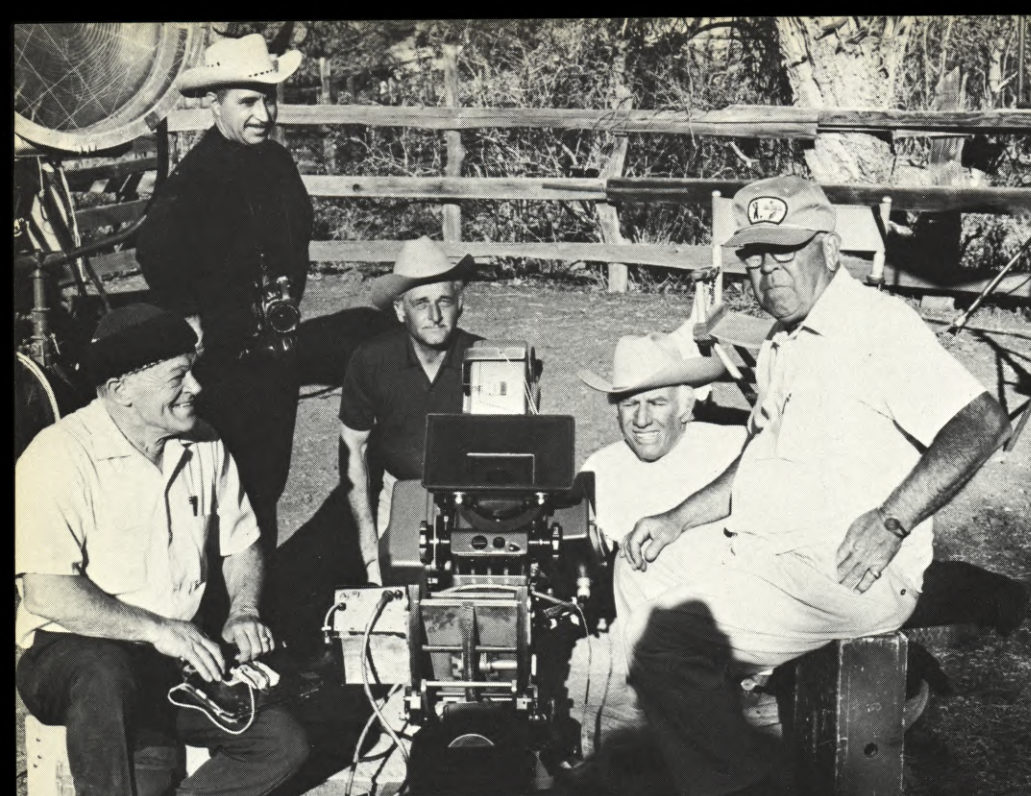


(LEFT) Brothers pursuing William Holden catch sight of him in the distance, as he rides between the soaring red buttes of Monument Valley, Utah. Cast and crew were awed by the grandeur of this classic Western locale. (CENTER) Filming of the round-up sequence near Nogales, Arizona, involved hundreds of cattle, expertly cared for by a top crew of wranglers. (RIGHT) Colortran Maxi-brutes were used for booster-fill lighting during filming of horse-breaking sequence near Flagstaff, Arizona. These units served well in areas where it was impossible to utilize Brute arcs.



(LEFT) Arcs are used for booster light alongside Panavision camera to photograph Holden and O'Neal riding in wagon. (RIGHT) Old Tucson, Arizona was used as locale where protagonists stop to rest and relax after having robbed bank. Reconstructed old town is a popular location for the filming of Westerns.





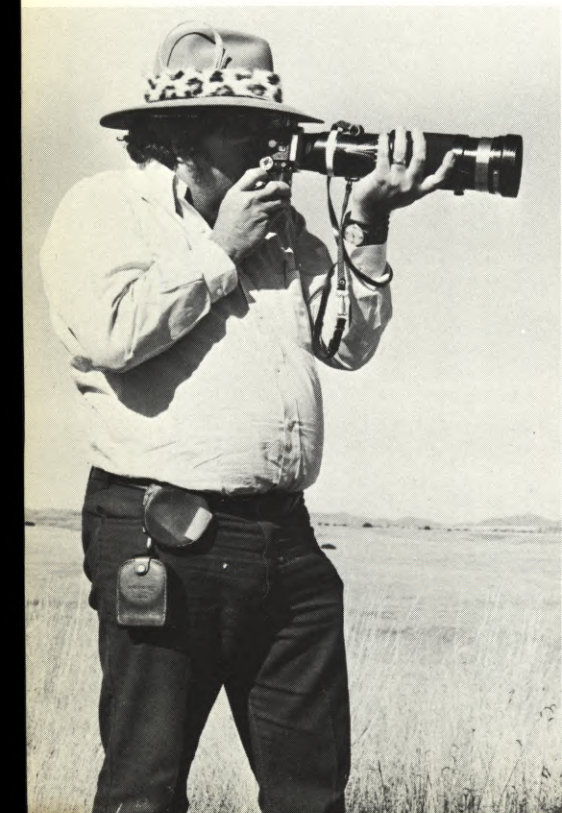
On location near Flagstaff, Arizona, the camera crew sets up for a low-angle shot, while the author looks on. The company was favored with good weather during the entire location shooting schedule, losing no time for that reason.

RAPHER, July, 1969).

"Since you're one of the family," says Ken, "Blake and I would like to extend an open invitation for you to come with us on any or all of the locations—follow the production all the way through, if you can."

It sounds intriguing. I've never followed a picture from start to finish—mainly because of the time it would

Famed still photographer, Bob Willoughby, racks out his zoom lens on location, while on special assignment by MGM to shoot magazine layouts.



take. But it might be interesting to do a kind of "case history" of this one, a script-to-screen reportage of what it takes to cobble a major motion picture together. I tell Ken that I'll tackle it on a "time available" basis—bobbing in and out to spend as much time as possible with the company when I'm not taking off to the ends of the earth in quest of other stories. So be it.

Meanwhile, out at MGM, I talk with Blake Edwards—which is always a pleasure. He's a man whom I much admire, not only as a film-maker, but as a person—a rare combination of intelligence, sensitivity, taste, style and integrity. My kind of people. In the course of his career he has tried (and proven) his versatility by tackling a wide range of vehicles, including the "PETER GUNN" TV series (and subsequent feature), "BREAKFAST AT TIFFANY'S", "DAYS OF WINE AND ROSES", "EXPERIMENT IN TERROR", "THE GREAT RACE", "THE PINK PANTHER" and "DARLING LILI". But he has never done a Western before. I ask what prompted him to tackle this particular *genre* of film just now.

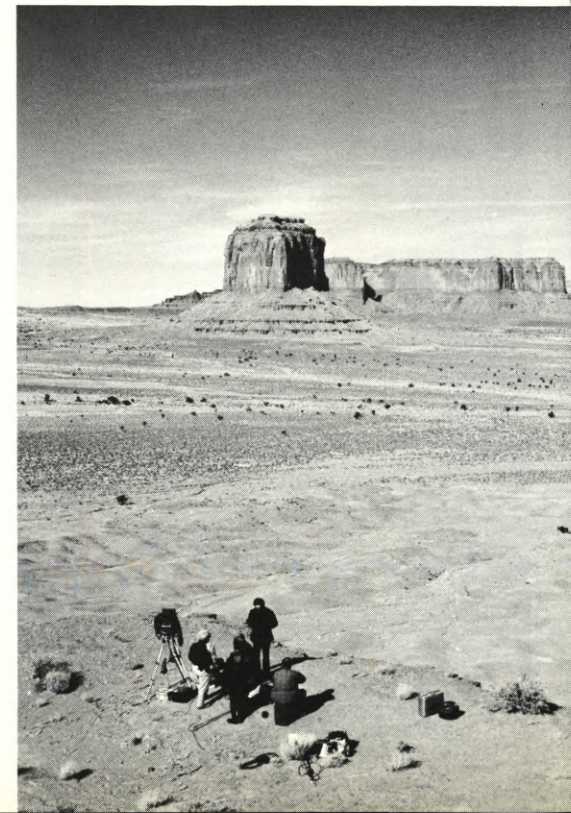
"It was because my son said, 'Why don't you write a Western, Dad?' Well, I'd often thought of doing a Western, but I've just never had the right subject matter. This one didn't start out to be a Western—it began as a contemporary idea, but I evaluated it and decided that it could be done in terms of the past instead of the present... just as well and maybe better."

He outlines the plot for me. It's the simple tale of an older cowboy (Holden) and a younger one (O'Neal)—both of them working stiffs on a large cattle ranch in the 1880's—who bust their tails in the saddle from dawn till dusk, day in and day out, with no kind of future in sight. The younger man rebels at the prospect of 25 more years of the same and he persuades the old hand to rob a bank so that they can take off for Mexico and live the good life. They pull it off, but are relentlessly pursued by the two sons of their erstwhile employer until, after a chase across several states, they meet their inexorable doom.

We talk about such things as cinematic approach, visual style and the type of photographic treatment it will take to convey to the audience the turbulent undercurrents that underlie this deceptively sketchy plot.

"I think it's very important to show the vastness, the loneliness, the boredom and natural beauty of the West during that period," Blake tells me, "because that loneliness and boredom are the main motivating factors that affect my principal characters. When I wrote the script I could imagine, particularly, the young cowboy looking at the older man, sensing his own environment, the boredom of the day-by-day, ritualistic, dull cowboy life—and longing for a way out. It's what drives him to say to his partner, after a particularly hard night: 'Hey, let's stick up a bank.' Which is exactly what happens. That's

Dwarfed by the immensity of Monument Valley, camera crew sets up on a bluff to film action against the majestic buttes seen in background.





(LEFT) Cameraman Don Morgan hand-holds Arriflex in preparation for filming a point-of-view shot from the back of a bucking mustang. (CENTER) The "family" gathers in location projection room to see dailies. (left to right) The Director's wife (Julie Andrews), Ryan O'Neal, Ryan's wife (Leigh Taylor-Young), William Holden, the Director's son (Geoffrey Edwards), who plays a small role in the picture. (RIGHT) Director of Photography Phil Lathrop, ASC, takes a light reading on William Holden.

why the 'look' of this film will be so important in terms of what my characters are motivated to do. In scouting for locations by helicopter we were able to select some areas that, heretofore, to my knowledge, have not been photographed. I looked for as much photographic uniqueness and beauty and stretches of boring landscape as I could find. Also, because they trek supposedly from Montana almost to the Mexican border, I tried to choose terrain that would indicate a change of season.

"The fact that I want to get vast expanses of terrain just naturally led me to Panavision as a choice of photographic format. I can compose better for the great outdoors with that aspect ratio. It will also make it possible, for certain first-run releases, to blow the picture up to 70mm and get that big image onto the screen. For the last ten years I've done most of my pictures in Panavision. I prefer it for many reasons, and particularly when I photograph the outdoors and want to capture the full scope of it."

My discussion about the photographic treatment of "WILD ROVERS" carries over to Director of Photography Phil Lathrop, ASC, who tells me: "I intend to use a very straightforward visual approach—probably the most straightforward photography I've used on a picture in the last ten years. The object is to keep it as real and natural as possible, with no tricky gimmicks. It may be refreshing to see it that way, for a change. I'm going to be careful not to overlight it, because I don't want it to look as though we've carried lights into a place where there shouldn't be any. Many of the shots will open with set tableaux, beautiful pictures, with the action developing from there. That doesn't mean that the photography is going to be the same throughout the entire picture. I try to approach each sequence with a slightly different style of photography, if that's possible. The sequence where Holden dies I want to

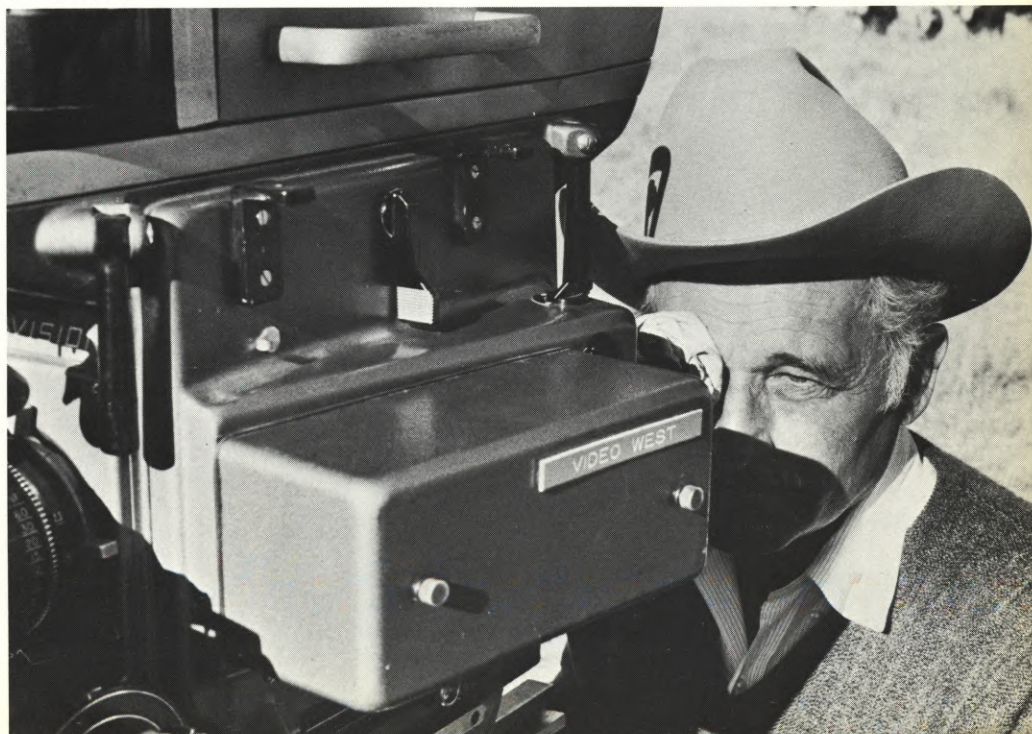
look stark and crisp, really hard. But when the young man dies I want the visual effect to be soft and gentle, because it's a very, very tender scene that takes place between these two hard-bitten cowboys. Unfortunately, in some pictures, you can't get any variation into the photography because the type of action and the areas remain the same throughout, but in this story the moods change all the way along. However, I don't think the visual style changes should jump out at the audience. They should be very subtle. One thing I do want to avoid is the slick mechanical gadgetry that we use so much in making pictures today—things like helicopters and obvious dolly shots and zoom lenses. I think that these would be very false in relation to a period Western. We will use the dolly very sparsely and only when it's necessary to keep up with the action—and so smoothly, I hope, that it won't be

noticed. I'm not against zoom lenses. I think they have a place, but not in a picture like this. I feel the same way about long focal-length lenses. We're going on location to get the full vista of the wide open spaces. Why, then, should we use an 800mm lens that shows none of the background? We'll use long lenses very rarely, but only when it isn't otherwise possible to get close enough to the subject—such as in the wild horse sequence, for example."

Co-producer Ken Wales rockets about his office as though jet-propelled, leaving a trail of exhausted secretaries in his wake. He really needs eight heads and twenty-two hands, but he's making do with what he's got, staying on top of dozens of problems, while maintaining his usual good humor.

He settles down momentarily in a cloud of dust to tell me: "I'm fortunate in that I was present at the very conception of 'WILD ROVERS' and

Lathrop lines up a scene through the viewfinder. On door of Panavision Reflex camera can be seen box containing Video West electronic camera, which picks up through-the-lens image exactly as it goes onto the film, and relays it to video tape recorder for instant playback, if desired, after scene is shot.





(LEFT) On Lot #3 of the MGM Studios in Culver City, soon to be levelled to make way for a real estate development, trainer works hard to get ferocious reaction from trained puma, who was more inclined to be playful. (CENTER) The puma finally snarls satisfactorily for the cameras of Second Unit Director of Photography Frank Stanley and his crew. (RIGHT) In the picture, the puma leaps out of the night, killing Holden's horse by slashing its throat. Holden fires at the big cat, but it escapes.



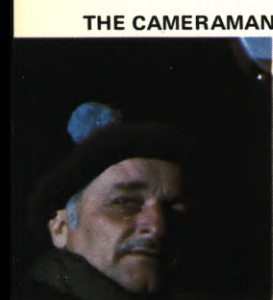
(ABOVE LEFT) Co-producer Ken Wales, Ryan O'Neal and Video West technicians Don Howard and Jim Songer, stand by inside van to watch video instant replay of scene just filmed. (CENTER) Main street of Western town on MGM Lot #3 was sparsely lighted for realistic effect of location at night. (RIGHT) A scene played outside the Sheriff's office (and jail) on Lot #3. (BELOW LEFT) The cowboys chow down at breakfast before setting off on round-up. (CENTER) Low-key sequence shows O'Neal and Holden enjoying respite after robbing bank. (RIGHT) Holden winds up a hard right during barroom brawl with sheepmen.



THE DIRECTOR



(ABOVE) Filming outside Maybell's brothel on Lot #3. (BELOW) One of the brothers shows up at Maybell's ready to cause trouble. (RIGHT) Maybell herself (Rachel Roberts) holds him at bay with shotgun, while other brother remonstrates.



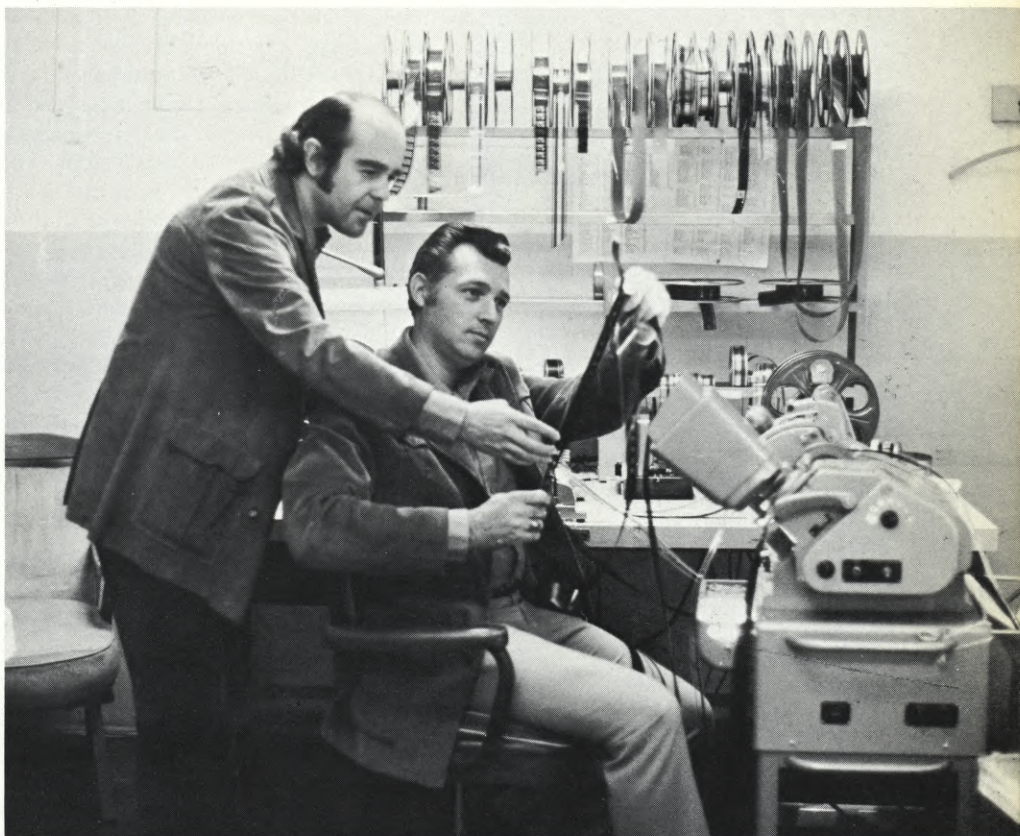
THE CAMERAMAN





(LEFT) Director Edwards and Cinematographer Lathrop, having worked together on many features, as well as the "PETER GUNN" TV series, have developed a very special working rapport which, at this point, requires very little verbal communication. (CENTER) On location in snow country near Flagstaff, a bunker is dug into the snow so that low-angle shots may be achieved. (RIGHT) White tarpaulin camouflage is placed in front of the cameras, so that they will not "spook" bucking horse in the sequence.

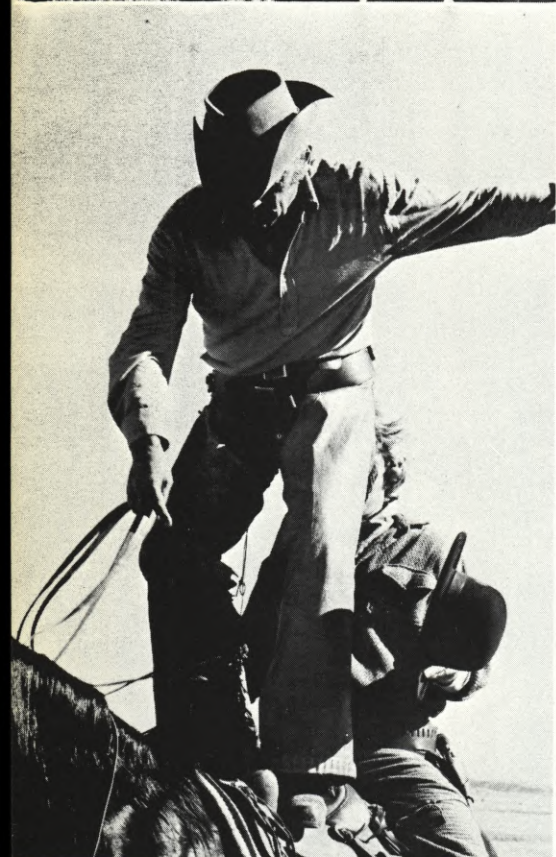
have been able to follow it through from that point. Blake wrote it at Gstaad in Switzerland, while we were there enjoying the winter season. He would crank out so many pages a day and give them to me to read. So, right from the first, I could begin to visualize how certain things would be done, which areas would be problem areas and which sequences would require a great deal of attention, such as the gathering of a large number of animals, etc. My problem was to translate what he was putting down into concrete production terms, so that he, working as the director, would have all the tools he needed right at his fingertips. A 'hyphenate' such as Blake is (in this case, writer-producer-director) can't possibly give full attention to every phase of the project. He must delegate some of the responsibility. And that's my job—to relieve him of the physical encumbrances of production, so that he will have the freedom to create, to paint his picture on the screen as he sees it in his mind's eye. The duties of a producer are somewhat vague to define, but they boil down to making all the necessary production tools appear when needed, rounding up the necessary people, pulling the team together and seeing that it functions as a total working unit.



Co-producer Ken Wales discusses cutting of sequence with Film Editor John Burnett. Burnett and his assistant were present on all locations, working in improvised cutting rooms to break down dailies and cut a rough assembly of each sequence as it was shot, a great boon to the director.

(LEFT) A documentary camera crew was on hand during the location shooting to film a behind-the-scenes record of "WILD ROVERS" in the making. The resultant 16mm film will be used for promotional purposes, especially on TV. (RIGHT) The documentary crew follows Blake Edwards around as he explores an abandoned Navajo hoogan on the floor of Monument Valley, which is a Navajo reservation.





"Horsing around" between set-ups, William Holden decides to daredevil it up. (TOP) He starts to stand up in the saddle. (CENTER) He has his moment of shaky glory. (BOTTOM) He slips and falls onto the horse's neck. (It could have been worse!)

"My relationship with Blake began back in 1961, when I worked for him as an actor in 'EXPERIMENT IN TERROR'. It developed into a production capacity with 'THE GREAT RACE', became an Associate Producership on his next four films, and has now reached the Co-producer level. Working in close association over such a long period of time, you develop a kind of shorthand, so that you can communicate a whole concept of thought without speaking as much as five words. It's almost a kind of ESP. At any rate, there's a special rapport based on understanding and mutual respect, which is essential because, without it, you have the kind of producer-director hassles that often boil down to who's going to win. There's none of that here. Blake and I work together in complete accord. I don't mean that it's a yes-man situation. We often disagree about concept or how something should be carried out—but we have a unique way of talking it over, selecting the best of the two different ideas and putting it all together into a working solution."

The phone rings and he blasts off again, shouting over his shoulder something like: "See you in Nogales."

NOGALES

Flying into Tucson from Hollywood on the same plane with me is Bob Willoughby, a jovial joker in a safari hat who also happens to be one of the world's top still photographers. He's headed for the same place I am (the Nogales, Arizona filming location of "WILD ROVERS") and he's on assignment from MGM to shoot special photographic layouts for top publications, such as (hopefully) *LIFE*, *LOOK*, and others of that ilk.

We are met at the airport by unit publicist Peter Benoit, a very hip dude, who drives us for miles and miles through the night until we arrive at the posh Rio Rico Hotel, which is location headquarters for the company. Swimming pool twinkling in the starlight, this lush hostelry stands in splendid isolation in the big middle of magnificent nowhere. I'm told we're not far from Nogales, which straddles the Mexican border, but there's no sign of a town.

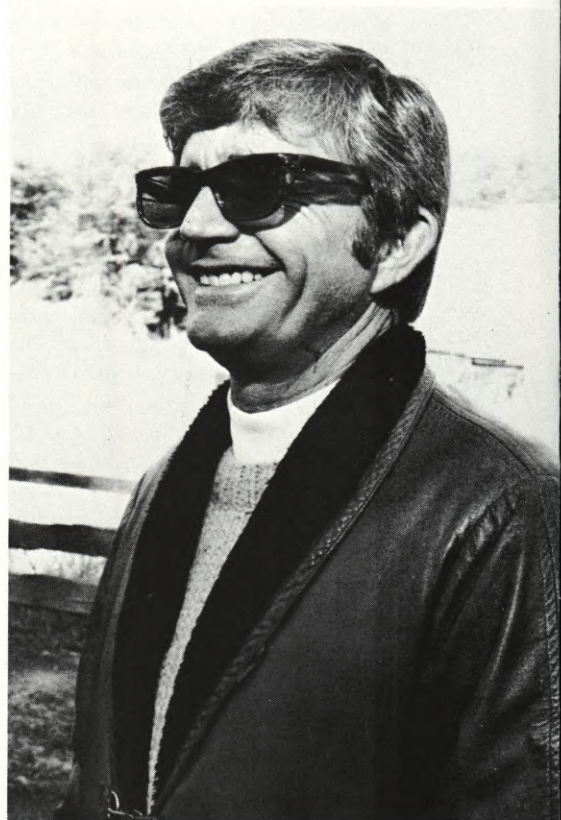
There follows a hearty back-slapping reunion with Ken and Blake and Phil Lathrop. The shooting has been going

well and everybody is in very high spirits. We're just in time to view dailies, so the whole tribe adjourns to an improvised projection room set up on the lower level of the hotel. It has a Panavision-shaped screen and a very advanced xenon arc projector that puts out a bright clear image with correct color temperature.

The house lights dim and there flashes onto the screen a series of spectacular images. Here is the American West in all its glory, captured in striking compositions by Lathrop's camera. It takes your breath away.

The photography has a peculiarly lush texture. Even though all of the scenes projected were photographed in

Portrait of a happy director. This is the way Blake Edwards looks when the actors and crew do everything right while filming a scene.



brilliant sunlight, they have a strange, brooding quality which conveys a feeling of foredoomed tragedy. When I mention this to Blake after the screening, he says: "You're completely right. The intention of the whole piece is for it to have exactly that brooding quality about it. Even though there is comedy in the opening sequences, that comedy was actually designed to set up the tragedy of the piece—because what I wrote is, essentially, tragedy. Two average, not the brightest, fun-loving cowboys decide to do something, and the



Much-honored composer Jerry Goldsmith conducts the MGM orchestra in recording the richly evocative musical score he created for "WILD ROVERS".



Tom Skerritt, who plays the "baddie" in the film, smiles amiably as he prepares to "loop" lines in MGM recording studio. Procedure was necessary to get a clear track of dialogue obscured by extraneous noise (such as the pounding of horses' hooves), while the company was on location.

moment that decision is made, they have opened Pandora's box. From then on, the inevitability of the tragedy is ever-present. You *know* that, inexorably, they are going to their doom. Hopefully, the audience will be wishing and hoping and praying against it, but I think that the audience, because of what you've described—that brooding quality—will either consciously or unconsciously feel the inevitability of what must happen to those two men. Romeo and Juliet die in the same way, and the inevitability of that was implicit—and so it was for Hamlet, also. What I've written certainly isn't Shakespeare, but it *is* tragedy—a kind of classic tragic form—and the brooding quality of the

photography is a very, very important part of it. Hopefully, even the most beautiful stuff that we shoot will have that brooding quality about it. The fact that Phil Lathrop has been able to capture it in brightly sunlit scenes is a tribute to his skill as a cameraman."

Later I talk to Phil Lathrop, congratulate him on the beautiful footage and ask him if he's been using any special filters—something like a pola-screen, perhaps.

"I haven't so far," he says. "On most of my exterior pictures I usually use a pola-screen, but I haven't on this one because we've been working in an area where the sky goes almost too blue as it is. I'm very fond of the effect of the

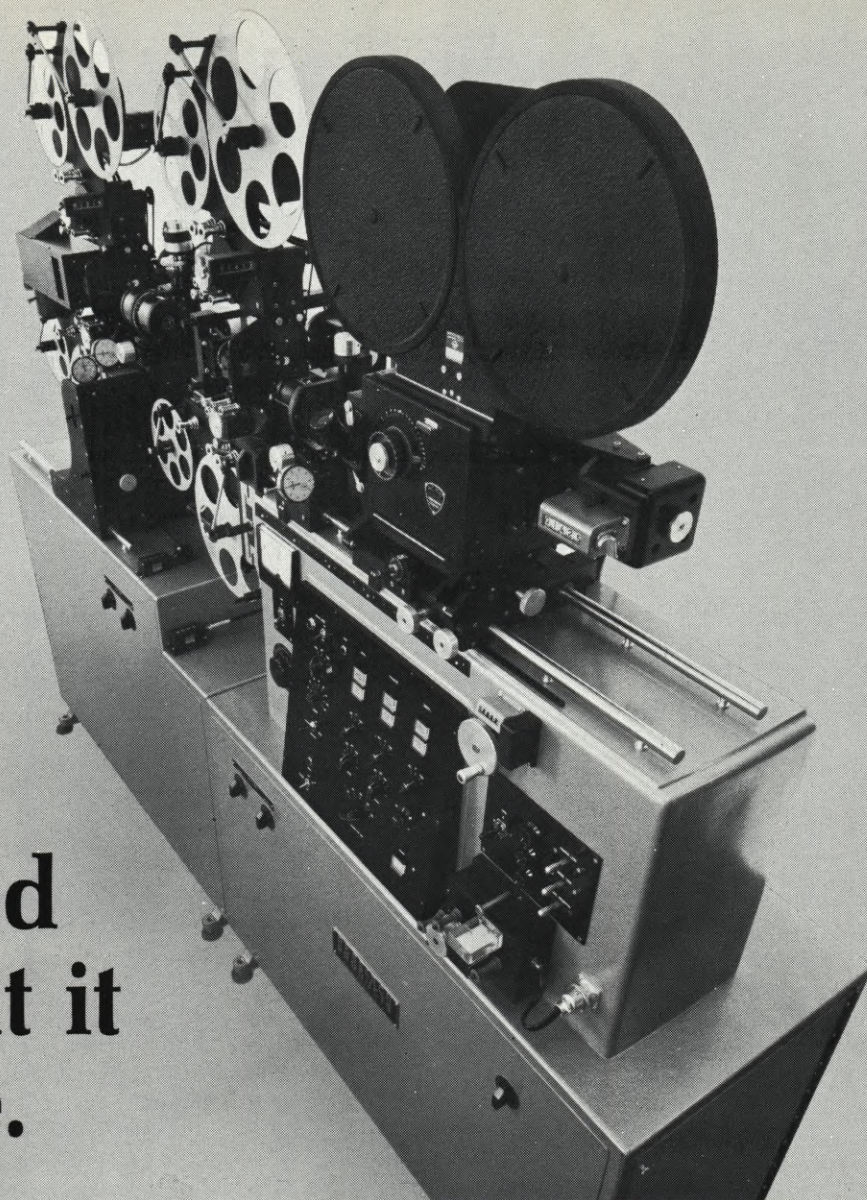
pola-screen. I've used it throughout entire exterior pictures. It softens all the colors and gives them a sort of pastel quality, in the same way that a neutral density filter will, but it goes beyond the neutral. What it actually does is flatten the highlights to a certain degree. If I had a choice, in shooting exterior pictures, I'd really like to shoot all of the exterior scenes in overcast, because you get the most beautiful colors under those conditions. I love this new fast 5254 color negative because it makes it possible to use contrast cutters in the camera that you couldn't use before because you didn't have enough light. You can use fog filters, double fog
Continued on Page 666

(LEFT) On the scoring stage, Goldsmith keeps one eye on the film projected on a screen in front of him, and the other eye on the music, as he directs orchestra in recording of the score. Film is projected to help him make certain that musical effects, synchronized to the action, hit exactly where intended. (RIGHT) Sound engineer adjusts his channels, as actor in looping studio below matches his dialogue to the scene on the screen.



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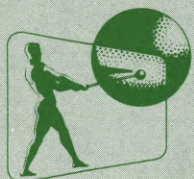
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Arriflex and Tandberg pooled their know-how and experience for the design of this new 1/4" professional tape-recorder which satisfies the highest demands for quality and performance at a price every filmmaker can afford. The Arrivox-Tandberg recorder offers features and performance found only in professional tape-recorders costing up to twice as much. Some of its standard built-in features are costly accessories on other machines.

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

The Arrivox-Tandberg is a non-compromising, professional 1/4" tape-recorder designed especially for the motion picture industry. It provides filmmakers with the ideal sound package in quality, compactness and lightweight, at a low price.

SPECIFICATIONS:

Measurements: 13" x 4" x 10" **Weight** (less batteries): 10.5 lbs. **Reel Diameter:** 5" reels with cover closed 7" reels with cover open **Tape speeds:** 7 1/2 ips and 3 3/4 ips **Wow and flutter:** .1% for 7 1/2 ips; .2% for 3 3/4 ips **Temperature range:** -4°F to +140°F (-2°C to +60°C) **Inputs:** Two balanced microphone inputs for dynamic microphone, 50 to 200 Ohm impedance, switchable to built-in power supplies for condenser microphones. One line input with control range from .775 to 7.5 V. Each input has separate gain controls and individual, switchable automatic limiters.

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

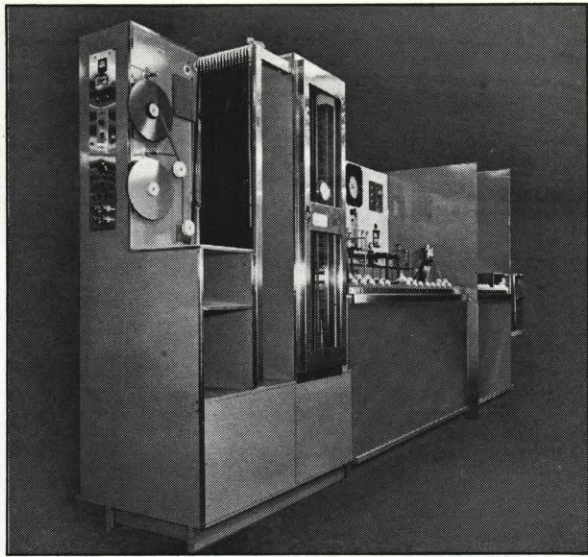
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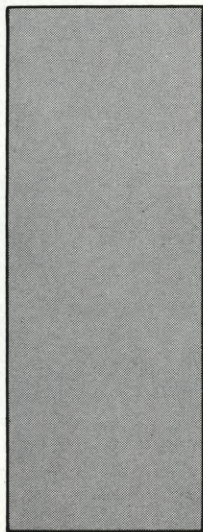
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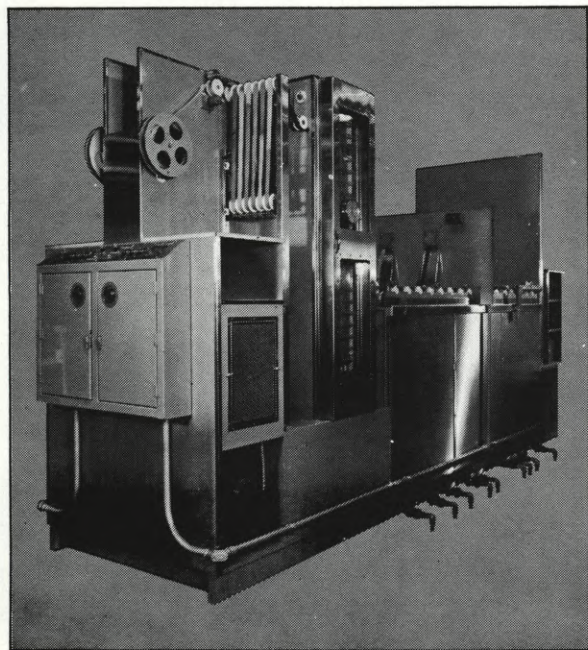
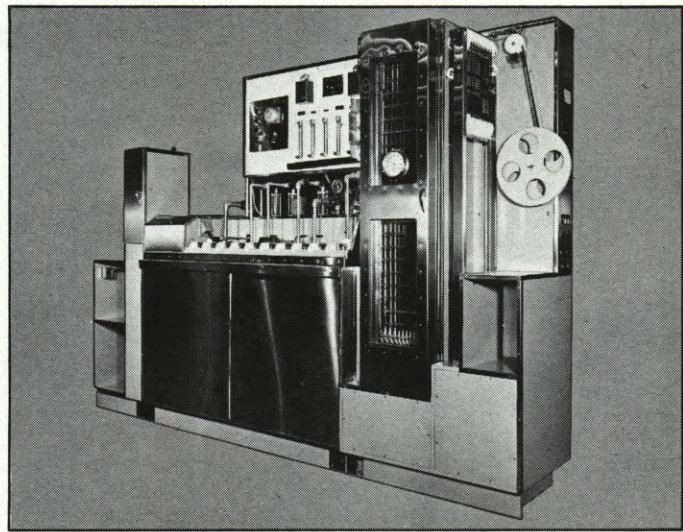


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Whatever type of motion picture film you want to process, there's a Houston machine to do the job faster, better, more economically. All achieve consistently excellent results because the film manufacturer's specifications are rigidly adhered to. Chemical solutions are constantly kept at the proper strength and temperature. Development times are precisely timed. Drying is accurately controlled. All machines incorporate exclusive features that have made Houston the standard of the world. Tell us the type of film you want to process and we'll send you brochures on the appropriate models.

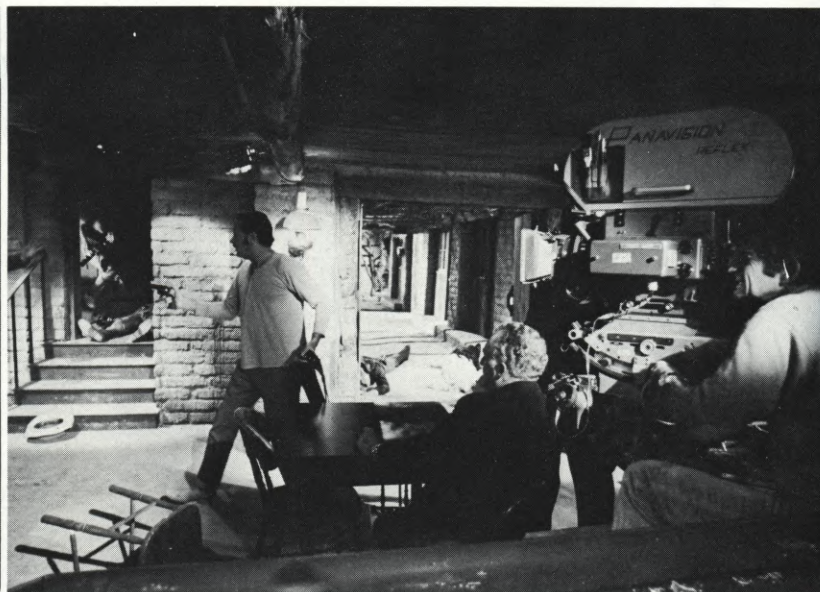
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The basic plot of "WILD ROVERS" is simple, but that of classic tragedy. (LEFT) William Holden and Ryan O'Neal, playing older and younger working cowboys, respectively, come in from a hard day on the range, bone-tired. (CENTER) A horse goes berserk in the corral, killing one of the hands and leading the protagonists to fatalistic evaluation of their lives and futures. (RIGHT) Deciding to enjoy life while they still have it, they plan to rob a bank. Holden takes the bank manager into town at night, forces him to enter the bank and turn over the money.



(LEFT) Blake Edwards directs his actors in card game sequence which ends in fatal gun fight, started by one of the players who is a bad loser. (RIGHT) Holden, hearing the shots, rushes into the main room of the bordello where the boys have decided to take a break in their long trek. Three people are already dead, and he kills the bartender who seems to threaten him. Edwards checks a rehearsal of the action through the camera viewfinder.

"WILD ROVERS"

Continued from Page 661

filters, neutrals, pola-screens—many of the things you couldn't use before because you'd have had to use an F/5.6 stop."

Later, I'm given a copy of the shooting script for "bedside reading". I scan the first page and I'm hooked. Tucked up in my trundle bed, I read it all the way through in one fell swoop—from

initial fade-in to final fade-out. Blake has written a marvelously "visual" script—so rich in descriptive detail that, simply by cutting out the technical directions and adding a few segues, it could be transformed into a fascinating novel. The plot line is sparse, to be sure, but the depth of the description fleshes out the characters; making them seem to burst full-blown from the pages. The script is full of appealing touches that keep me totally involved. It is funny,

bawdy, gutsy, wistful, touching, tragic and very, very human. The relationship of these two beat-up cowhands—the older and the younger—two loners with no one to care about them but each other, has overtones of "MIDNIGHT COWBOY" and, from an earlier time, "OF MICE AND MEN". In its intensely masculine way it expresses the universal longing of beings in an alienated world to be cared about by *somebody*.

Continued on Page 700

Frame blow-ups from a violent, but hilarious barroom brawl which takes place after Holden has insulted some sheepmen who walked in. (LEFT) Ryan O'Neal doubles up, as he receives a painful low blow. (CENTER) He scoots down the bar top on all fours, as the bartender chases him with a club. (RIGHT) Bartender prepares to knock out sheepman who is grappling with Holden. Sequence is beautifully staged, but was hard to photograph because actors ended up in unplanned, unlighted areas.





(LEFT) Cowboys of the R-Bar Ranch return to corral after a hard day in the saddle during round-up. Sharp Ranch, near Nogales, was location authentic to the period used as location. (CENTER) Bill Holden cheers his stunt-double on during shooting of spectacular long shots for horse-breaking sequence. (RIGHT) Holden and O'Neal silhouetted against yellow sky during lyrical opening montage of the picture.

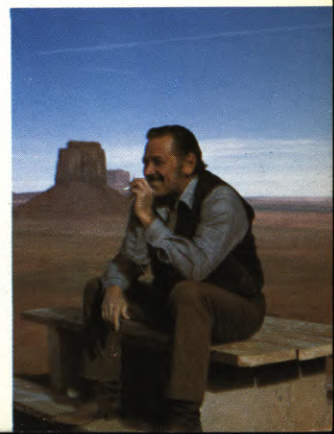
(LEFT) Chapman crane soars into the incredibly blue sky above Monument Valley for photography of the film's final sequence. (CENTER) Camera records low reverse angle of Holden riding full tilt across floor of the valley, as he is pursued by vengeful brothers intent on killing or capturing him. (RIGHT) Don Morgan films scene from helicopter. Helicopter was very sparsely used for shooting, because it was felt that this modern technique might strike audiences as anachronistic to period of the picture.



(LEFT) Second Unit Director of Photography Frank Stanley lines up his camera to shoot scene for round-up sequence. (CENTER) Riders silhouetted against sunrise sky during opening montage. (RIGHT) Tracks are laid for a complicated dolly shot on location. Moving camera shots were held to a minimum and were used only when necessary to follow action, in keeping with aim of director and cameraman to have mechanics of photography remain as unobtrusive as possible.



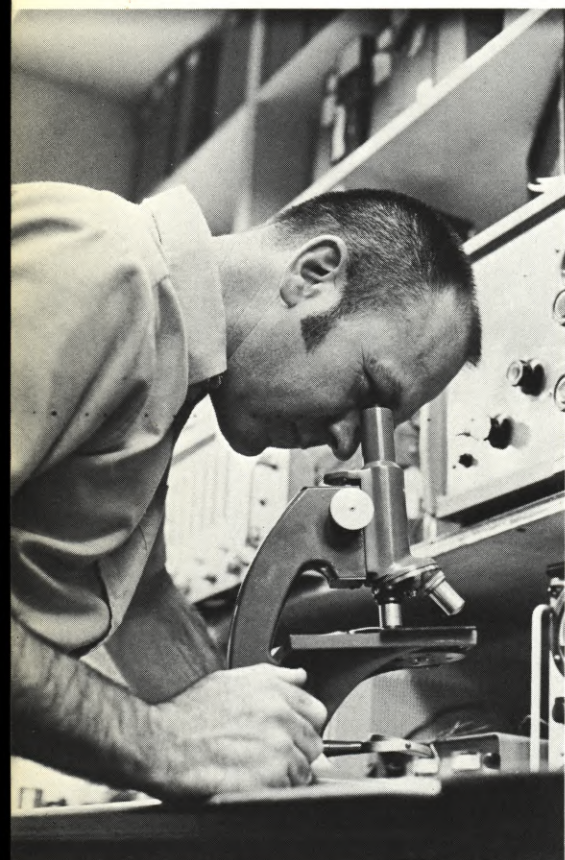
(LEFT) Broken-down old ranch corral near Flagstaff was used as location for filming of sequence in which Rovers barter for mule, after puma has killed horse. (CENTER) Multiple cameras, some overcranked, were used for photography of horse-breaking sequence shot in snowfield. (RIGHT) William Holden relaxes between set-ups during location filming in Monument Valley.



NEW VIDEO WEST INSTANT REPLAY SYSTEM IS REFLEX AND WIRELESS

Shooting through the lens of the film camera, free of cable umbilical cord, and with a portable recorder, latest model adds up to an invaluable tool for film production

By JIM SONGER



Jim Songer, designer and developer of the Video West Instant Replay System. New model, small enough to fit into door of Panavision Reflex Camera, was made possible through use of space technology micro-circuits so tiny that he has to trace them with the aid of a microscope.

The Video West Instant Replay System, which permits the film-maker to record and immediately play back an extremely high-quality video "duplicate" of a scene just filmed, has gone through several stages of evolution to arrive at its current highly-sophisticated state, which includes recording directly through the lens of the film camera, wireless operation (with no connection between camera and recorder) and a new light-weight portable videotape recorder that can be carried by means of a shoulder strap, if necessary.

However, in order to fit these latest developments into their proper perspective as aids in film production, it would be helpful to briefly trace the system through its major stages of development.

Seven or eight years ago, when I was working for Gordon Sawyer in the Sound Department of the Samuel Goldwyn Studios, Stan Freberg came to us and asked if it would be possible to piggy-back a TV camera with a film camera, so that he could have instant replay of the footage that he was planning to shoot for some commercials. He said that if he had a way of timing footage frame-for-frame immediately after it had been shot, he would be able to mentally put together a 50-second commercial before the editor ever got hold of a piece of film. It would not only save tremendous amounts of time,

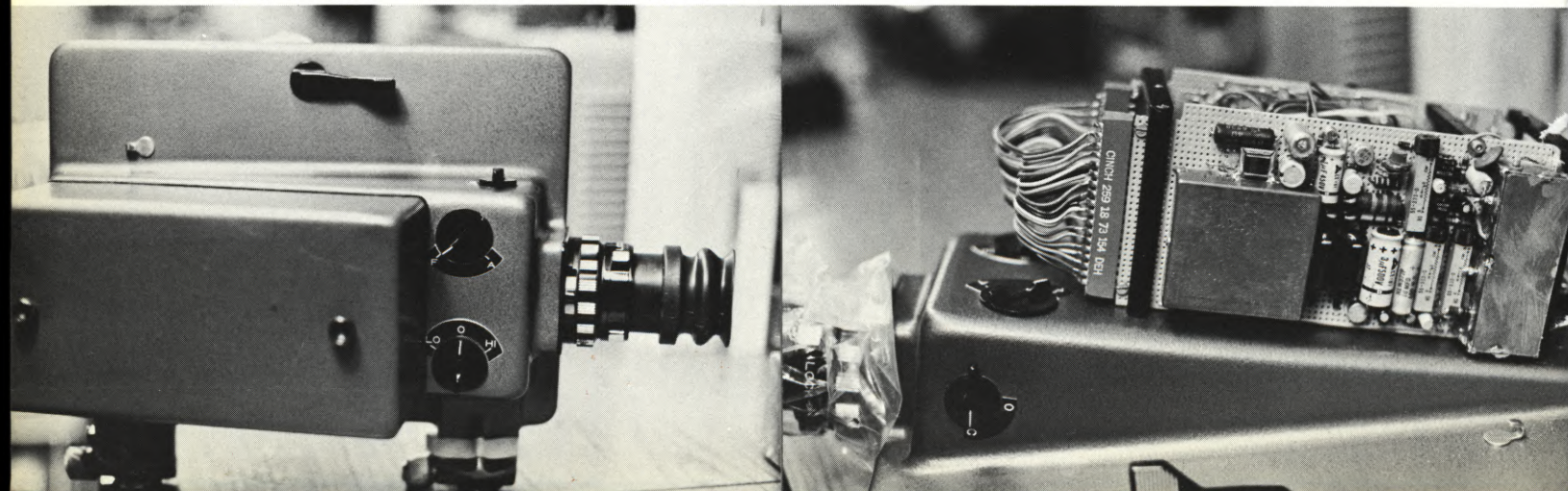
but he would know instantly exactly what he was getting.

I discussed this with Gordon Sawyer, who is one of the finest engineers in the film industry, and we came up with some ideas. As we started to put the system together we encountered situations that gave us even better ideas, and within six or eight months we had completed a system that Mr. Freberg could use. This was before Jerry Lewis or anyone else had rigged such a combination, and it was the only system of its kind available at the time.

Mr. Freberg was able to use it with 100% success right from the beginning and, since that time, he has refused to make a commercial without it.

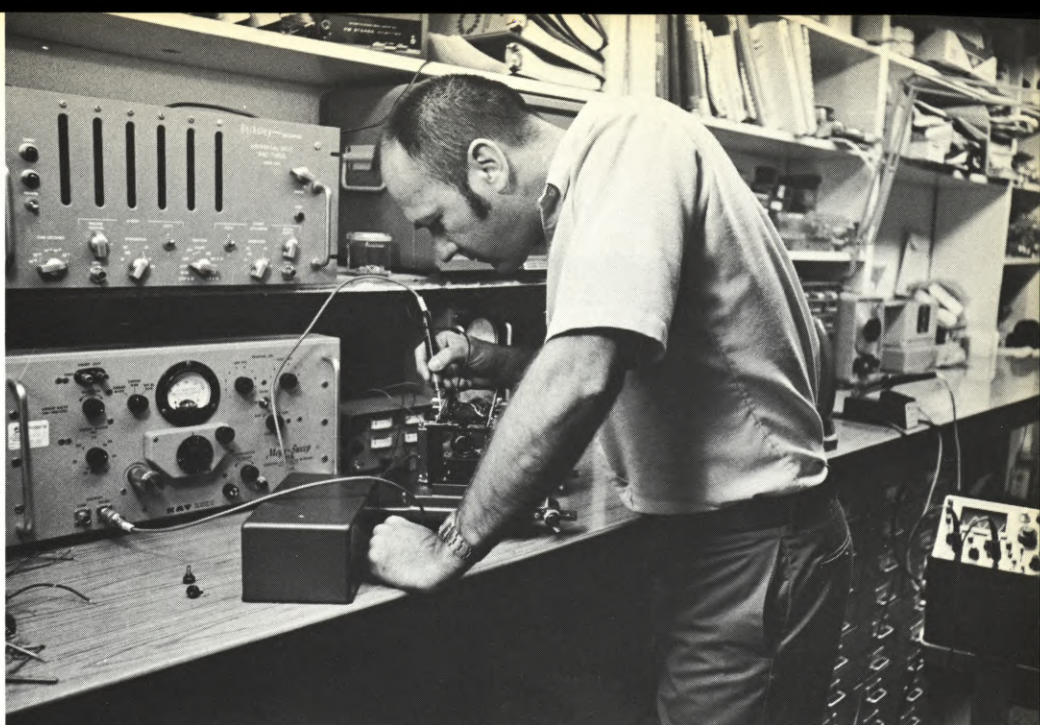
A couple of years later Blake Edwards was getting ready to shoot a picture called "THE PARTY" at the Goldwyn Studios. It was a very complicated type of picture with a lot of ad lib action, and it was necessary to know from one scene to the other exactly what had happened in the previous scene. It would have been mental chaos for a director to try to remember all of this, because it was not filmed according to a script. He could not wait to view dailies before shooting the next scene, so that meant he wouldn't know from day to day what he was getting unless he had some means for instant re-viewing.

(LEFT) Video camera component of the latest wireless model fits snugly into door of Panavision Reflex Camera and shoots through its taking lens for recording an image identical to that photographed on the film. Door can be switched onto any existing Panavision camera within minutes. (RIGHT) Cover of video camera removed to give partial view of its complex micro-circuitry. New model was developed with complete cooperation of Panavision engineers, who designed mounts and mechanical features.



So, an instant replay system was put together for Blake Edwards to use in filming "THE PARTY" and that was the first time, to my knowledge, that such a system was used to film a feature.

The state of the art at that time left quite a lot to be desired in terms of the video picture quality, so we formed a corporation, Video West, for the purpose of developing a really top-quality system that would be a valuable aid in the production of motion pictures. The research and development that has taken place since then has produced just such a system and Blake Edwards deserves full credit for it, because he not only provided the material basis that



The author, shown testing components in his research laboratory, worked with Goldwyn Sound Dept. chief Gordon Sawyer to rig first video camera-film camera combination for Stan Freberg. First feature use was on Blake Edward's "THE PARTY". He gives Edwards full credit for material and moral support in developing latest, highly-sophisticated models.

made it possible, but he lent it his all-out moral support, as well.

The first professional model of the Video West Instant Replay System involved a thoroughly reworked vidicon camera system and an Ampex 660 recording console to which more than 200 modifications had been made by Video West. This model was extensively reviewed in the February 1970 issue of *American Cinematographer*, so I won't say too much more about it, except that it was a piggy-back model that had a vidicon camera mounted directly above the taking lens of the film camera, with a 45-degree mirror picking up the same (or almost the same) picture as the film camera.

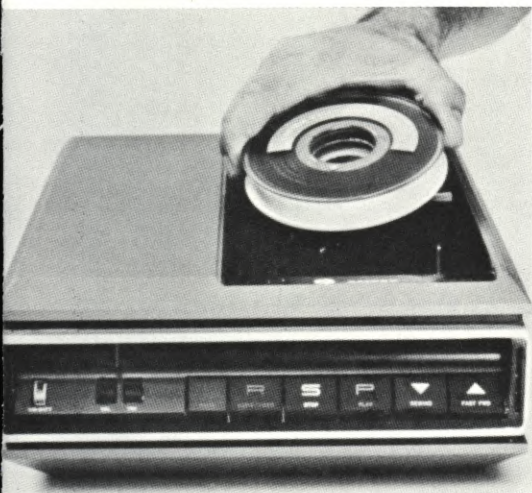
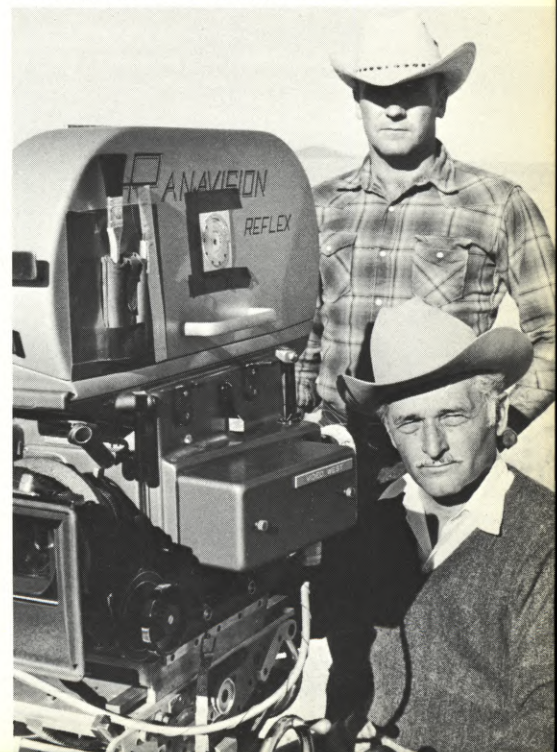
Picture quality was excellent, but this particular model had certain drawbacks. First, there was a certain amount of vertical parallax—a very small amount, but it was there. Second, the vidicon camera would have to be fitted with one of five lenses that most closely matched the focal-length of the lens being used on the film camera, after which the picture had to be electronically regulated to exactly match the field covered by the film lens. This worked fine, but it took time. Third, the system was useless when a zoom shot was being made with the film camera. Fourth, the camera was tied by a cable "umbilical cord" to the huge Ampex 660 console and monitoring system installed in a van.

Even with all these drawbacks, however, the system proved such a boon to film production that it was used on quite a few ambitious feature films, including "... TICK ... TICK

... TICK ...", "THE MOONSHINE WAR" and "DARLING LILI".

In working toward a more sophisticated version of the system, we recognized the fact that the television camera, as we had been using it, was a parasite on the film camera. It became our aim to design a system that would not in any way interfere with the functioning or mobility of the film camera. We wanted to be able to "hide" it so effectively that the cinematograph-
Continued on Page 718

Songer stands behind cinematographer Phil Lathrop, ASC, shown with Video West-equipped Panavision Reflex camera during filming of "WILD ROVERS". Lathrop will use new wireless model for first time in shooting "PORTNOY'S COMPLAINT".



(ABOVE) New Ampex Instavideo videotape record/playback unit is 11" wide x 13" deep x 4½" high and weighs less than 13 lbs. (minus batteries). When extensively modified by Video West, it will eliminate recording van. (BELOW) Unit is small and light enough to be carried on shoulder strap, if desired.



A SURVEY OF MOTION PICTURE FILM STOCKS AND LABORATORY PROCEDURES

(PART II)

By RICHARD PATTERSON

An up-to-date state-of-the-art report on the various options available in basic raw materials and the alternative methods of processing them

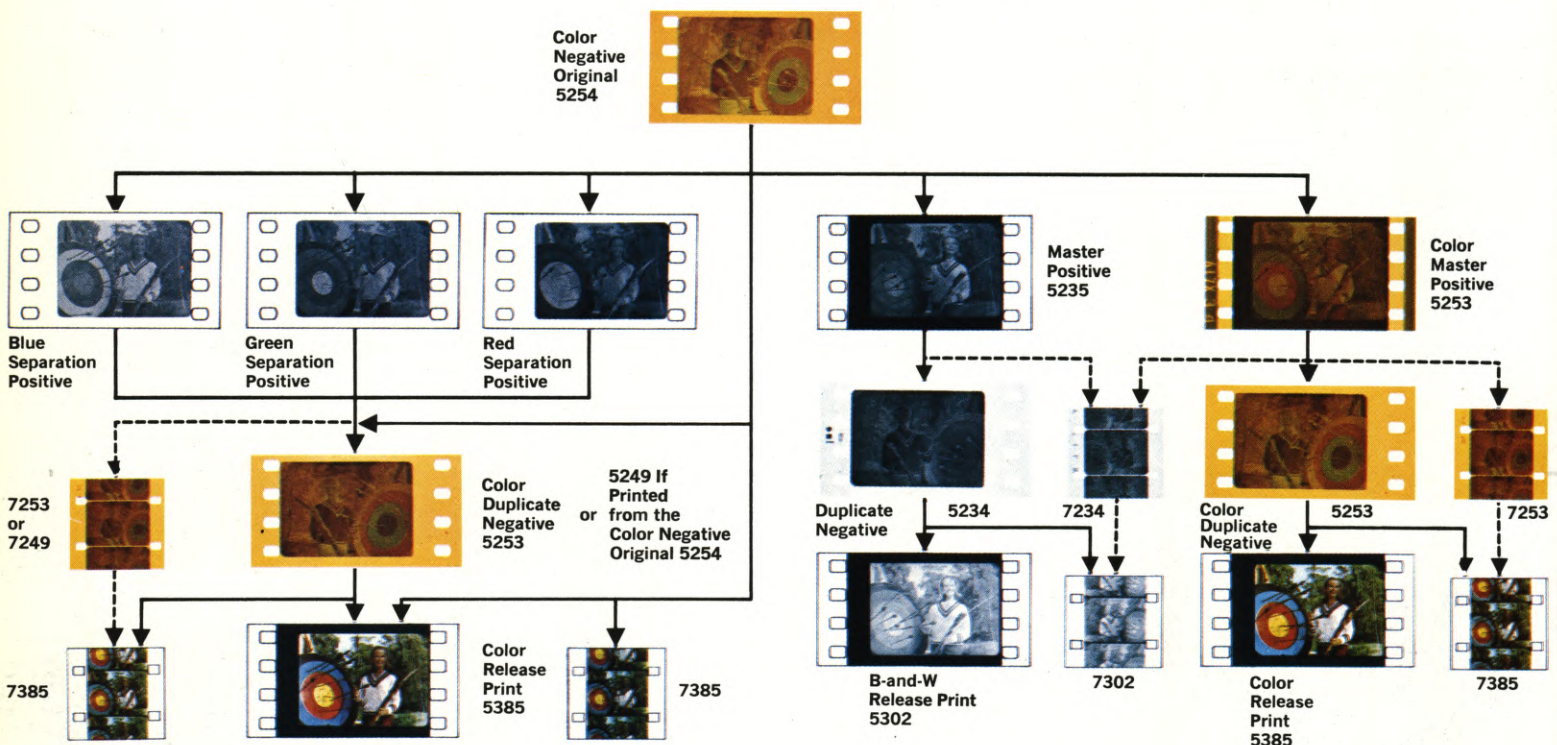
The daily prints which are made from the camera film are edited to make the workprint. The edited workprint can then be used as a guide in cutting the original, and a number of release prints can be made directly from the edited original. If only a very limited number of prints of the film are required, this may be the extent of the lab procedures involved in the production

except for the sound track (see below).

If more than four or five prints are required, other procedures become advisable. First of all, some thought should be given to the need for protection. Once the original film is edited, the whole cost of the production is tied up in a few rolls of irreplaceable film. If this film is damaged in handling, it can only be repaired by changing the con-

tent of the picture through the use of alternate footage. If it is lost by fire or theft, no further prints of the film can be made at all. If it is scratched, all subsequent prints of the film will be marred. There are two ways in which a producer can protect himself against such possibilities. The first is by making a special print of the film, for protection only, which is stored in a safe place

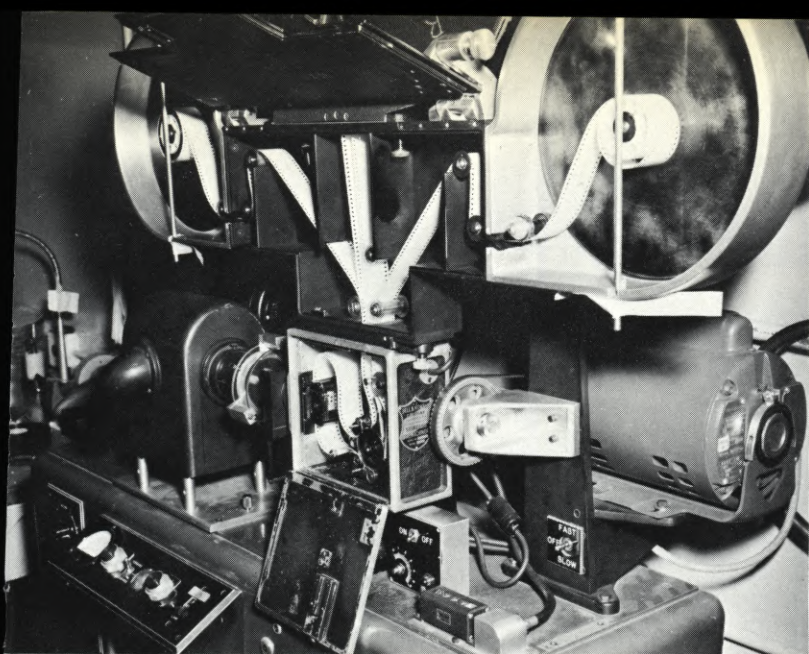
METHODS OF PRINTING 35mm AND 16mm PRINTS FROM 35mm NEGATIVES



- 7234 EASTMAN Fine Grain Duplicating Panchromatic Negative Film
- 7249 EASTMAN Color Reversal Intermediate Film
- 7253 EASTMAN Color Intermediate Film
- 7302 EASTMAN Fine Grain Release Positive Film
- 7385 EASTMAN Color Print Film
- 5234 EASTMAN Fine Grain Duplicating Panchromatic Negative Film
- 5235 EASTMAN Panchromatic Separation Film
- 5249 EASTMAN Color Reversal Intermediate Film
- 5253 EASTMAN Color Intermediate Film
- 5254 EASTMAN Color Negative Film
- 5302 EASTMAN Fine Grain Release Positive Film
- 5385 EASTMAN Color Print Film

NOTES

- 1 The edited negative generally consists of both original camera negative and duplicate negative in which special effects have been incorporated. The original and duplicate negative footage may also be edited, in some instances, in "A" and "B" rolls in order to introduce special effects.
- 2 The choice of printing system depends on a number of factors, including the types of printing and processing equipment available, the physical and chemical processing requirements for each film, and certain economic considerations. As a result, certain compromises may have to be accepted.
- 3 An image size change indicates optical reduction printing. Where reduction stages are called for it is best (in the interest of obtaining the highest definition in the final print) to postpone reduction until the latest practicable stage. Dotted lines show alternate, and usually less desirable, methods.



(LEFT) Versatile color printers offer a variety of options, depending upon the requirements of the particular film and the preferences of the producer. (RIGHT) Optical printers are used to make blow-ups and reduction prints, as well as a wide variety of special effects. Liquid-gate optical printing now makes possible a degree of quality which was never possible in the past. (Photographs courtesy of Consolidated Film Industries, Hollywood.)

and can be used to make replacement footage for damaged original. Such a print is made on a duplicating stock designed specifically for this type of work. The second method of protection is to use the original only to make negatives which will, in turn, be used to make all the release prints. In this way, the original itself provides the protection material. Both of these approaches are commonly used and each has its own advantages.

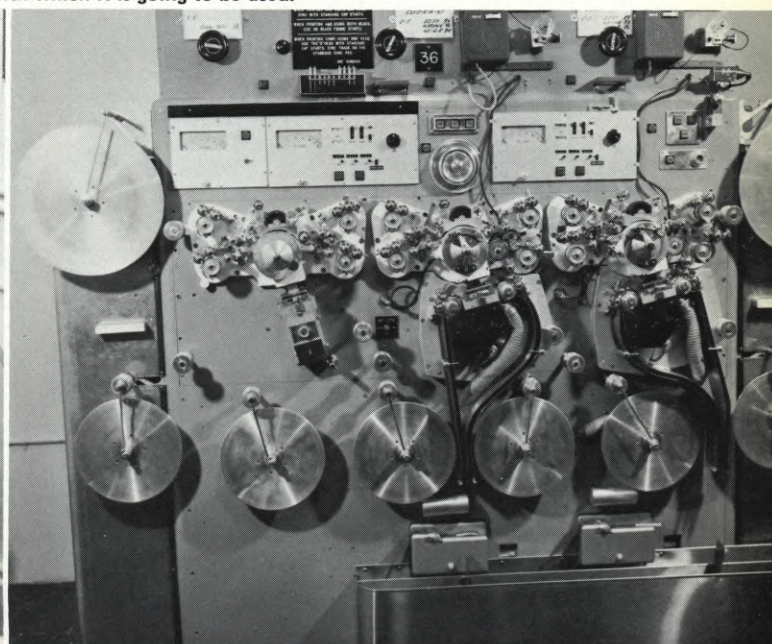
If the original is a black and white

negative, the traditional means of providing protection or of making duplicate negatives is to make a "master positive" or "fine grain" on Eastman Fine Grain Duplicating Positive film #5366 (35mm) or #7366 (16mm). This master positive can be used for making replacement footage for the original negative or for making dupe negatives for the entire picture by printing it onto Eastman Fine Grain Panchromatic Duplicating Negative film #5234 (35mm) or #7234 (16mm).

It is also possible to make a dupe negative directly from the original by means of Eastman Direct MP film #5360 (35mm) or #7360 (16mm), but it is necessary to make this dupe negative on an optical printer in order to maintain the proper emulsion orientation (see below). In the case of theatrical pictures the best procedure is probably to make a master positive first and then use the original negative to make a limited number of release prints in order

Continued on Page 688

(LEFT) Most modern film laboratories utilize highly sophisticated video color analyzers in the "timing" process. This not only speeds up the procedure markedly, but eliminates a high percentage of possible human error. (RIGHT) Printing of the sound track is a critical step affecting the overall quality of release prints. When a sound track negative is ordered, it is necessary to specify whether the track should be A-wind or B-wind, since the emulsion orientation of the track must match that of the picture with which it is going to be used.



A NEW EXPERIENCE IN CINEMATOGRAPHY

A veteran documentary cameraman, long accustomed to figuring it out for himself, discovers the joys and advantages of new ARRI exposure control system

By EDMUND BERT GERARD

There was a time when cameramen were not yet called cinematographers, and the motion picture camera was not respected as an artist's tool. They were days before there was any such thing as an exposure meter, and the cameraman had to judge his exposure through the back of the film emulsion. "I'd rather have a heavy negative than be underexposed", was the rule of the day. Those days are gone as surely as the highly-explosive nitrate film base.

Luckily, cinematography is one of the few art forms which can benefit from technological advances. Coated lenses, battery-powered motors, and many technologically sophisticated aids have helped the cinematographer devote more of his efforts to the esthetics of his art.

Now the Arriflex Company, which has long pioneered in the field of cinematography, has introduced a new device which promises to be one of the most important innovations in filmmaking. The device is a fully professional,

behind-the-lens, exposure control system known as the Arriflex Precision Exposure Control (APEC).

The APEC is built into the door of the Arriflex BL, and measures light through the reflex system. This enables it to take into account all of the influencing factors, such as filters, diopters, lens transmission, etc. It uses circular density wedges for the film sensitivity and camera speed input, thus circumventing all the troublesome, inaccurate compromises inherent in the electronic circuitry of a conventional exposure meter.

Naturally, the system is not automatic. It simply reads the scene and provides the cinematographer with the most accurate reflected light measurement possible. This information is placed right in front of the cinematographer's eye on an expanded scale below the ground glass. As the light levels change, the reading on the scale changes accordingly.

After first being introduced to the

APEC, I hesitated for some time before having the "gadget" installed into my BL camera. Some "gadget!" It is probably the most sensitive precision instrument I have ever used. After working with it for almost one year, I cannot understand how I was ever able to get along without it.

Today, more than ever before, an exposure control system like this is virtually invaluable to the cinematographer. Much of contemporary filmmaking requires heavy location work, where lighting conditions are not easily controllable. It soon became apparent how much time I was saving by not having to walk into the set, with my hand-held meter, to measure all the delicate lighting balances.

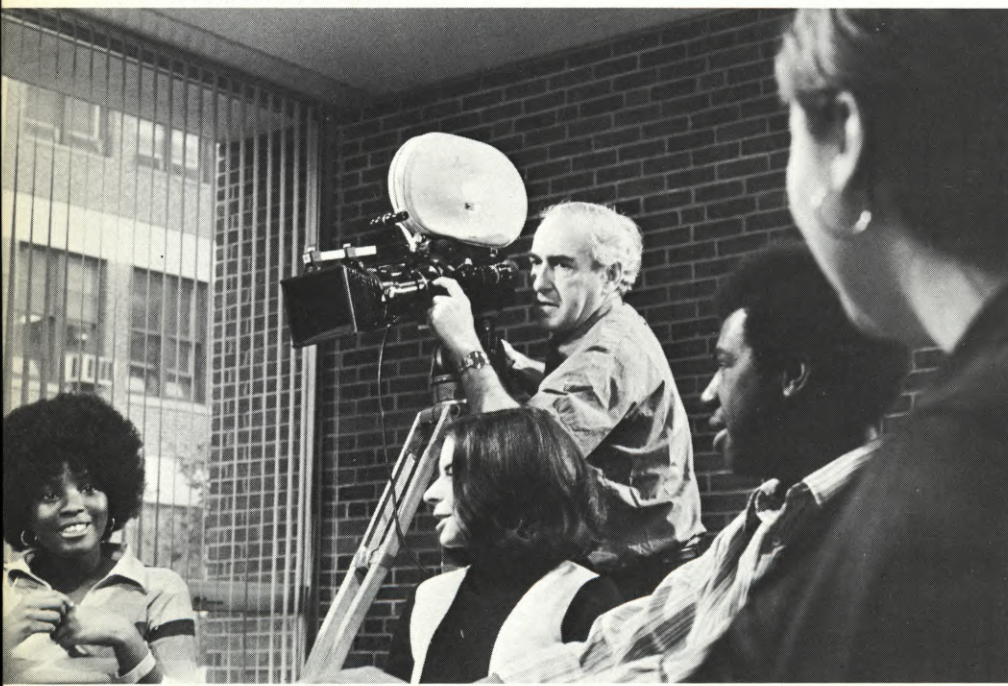
At first, of course, I carefully compared my "old meter" readings with my new APEC until I got the idea. Since then, I have lived dangerously with my lighting, yet the exposures are always in the middle of the printing scale. In a recent documentary set-up of a therapeutic situation, I had a group of about ten males and females. The group was racially integrated, and I had no idea beforehand where any specific individual would be seated. This meant, of course, that the lighting could not be set to accommodate the tremendous differences in skin colors.

In this particular set-up, I purposely kept one side of the room dark, because "nothing was going to happen on that side", and because I wanted some silhouette effects. Suddenly, the unexpected happened! One of the group members on the "dark side" broke down and two of the therapists rushed over to comfort him.

This was undoubtedly the most dramatic sequence of the entire session, and it was saved by the APEC meter. It immediately registered the change and allowed me to instantly compensate for the lower light level. As it developed, this scene was the most moving of the entire film.

On another documentary set-up, I again had a circle of young people, and again the lighting had to be ready

The author trains lens of his Arriflex BL, equipped with new behind-the-lens precision exposure control (APEC), on subjects during filming of documentary concerning a group therapy situation. Skeptical at first, he is now sold on the "gadget" that allows him to work faster with more accurate control of exposure.



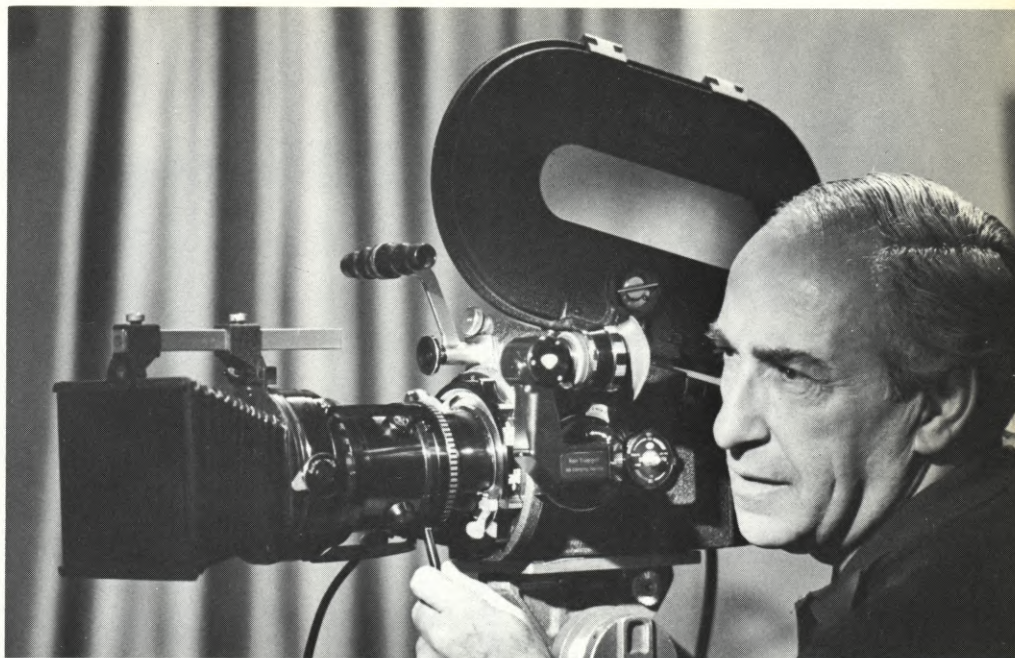
beforehand. With careful light readings, I had balanced the light for an F/6.3 stop. As it turned out (of course) six of the kids on one side of the circle had long, disheveled hair, which shaded their faces and eyes completely. Since I had not been able to use fill lights, the exposure changed to F/2.5. Had it not been for the APEC meter, I could not have controlled, so accurately, this subtle exposure change.

Incidentally, this happened while my assistant was reloading film—he is now expendable for such tasks during shooting. When he returned to the camera and looked at the F/stop, he became frantic and whispered excitedly in my ear, "You're wide open at 2.5!" And some time later, when I panned to the other side of the group: "You're way down at 8!"

His frustration over not knowing what was going on inside the camera is perhaps the most illuminating example of the independence the cinematographer has gained with this new marvel, and the fluid, uninterrupted shooting it allows for.

There is no longer any such calamity as "the assistant forgot to stop down!" When the needle is not on the center mark, I can see that something is wrong.

By now, it should become apparent that the APEC is the ideal innovation for the *verite* cinematographer. It takes



Edmund Bert Gerard, three-time "Emmy" Award-winning cinematographer, has also received an Academy nomination for his photography of "REMBRANDT". His credits include: "EYE ON NEW YORK" (CBS), "VICTOR BERGE AND HIS FAMILY" (ABC), "DAVID BRINKLEY'S JOURNAL" (NBC), "HIGH ADVENTURE" for CBS-TV with Lowell Thomas, and many other top-rated documentaries.

a fine degree of professional discretion and finesse to change your F/stop while shooting the same scene. When the entire scene must be used in the picture, it often becomes necessary for the editor to cut away to another insert in order to cover up for an abrupt expo-

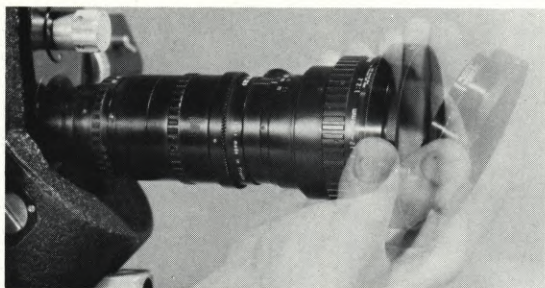
sure change in the middle of a take. The APEC is most helpful in letting you make these changes as smoothly as possible.

I have walked into previously unscouted locations—with my Arriflex BL
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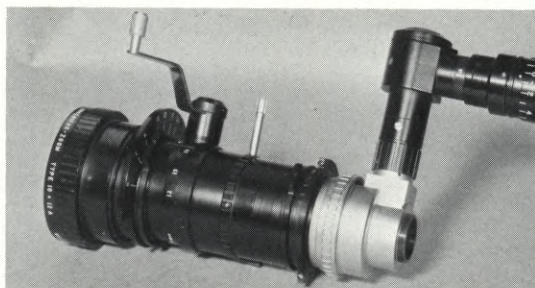
Frame blow-ups from recent documentary about a teenage group therapy encounter, filmed by the author. He had no idea in advance of the seating arrangement and, therefore, could not pre-set lights ideally. Yet, his exposures were consistently in the middle of the printing scale. The APEC system is not automatic, but reads the scene accurately and provides cameraman with information on scale just below the ground glass.



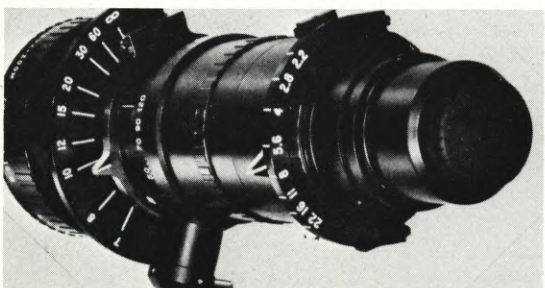
CENTURY exclusive products for professional, news & documentary filmmakers



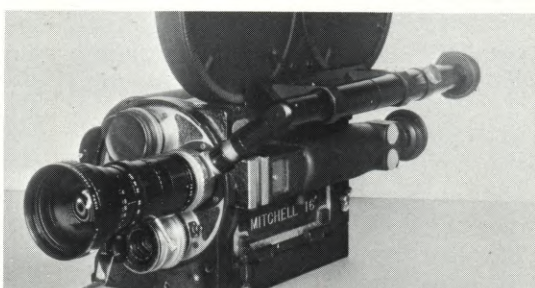
Century quick slip-on filter adapter for 12-120mm Angenieux zoom lens. Allows instant change to 85 or 85B when going outdoors to follow action or vice versa. Price only 19.50.



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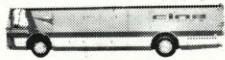


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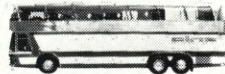
NOW FILMING



NEW YORK

THE GODFATHER

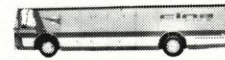
GORDON WILLIS — CINEMATOGRAPHER
PARAMOUNT PICTURES
ALFRAN PRODUCTION



NEW MEXICO

THE HONKERS

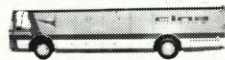
JAMES CRABE — CINEMATOGRAPHER
UNITED ARTISTS
LEVY-GARDNER-LAVEN PRODUCTION



ARIZONA

DIRTY LITTLE BILLY

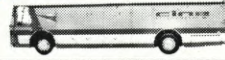
RALPH WOOLSEY — CINEMATOGRAPHER
A JACK L. WARNER PRODUCTION



NEW MEXICO

POCKET MONEY

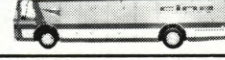
LESLIE KOVACS — CINEMATOGRAPHER
STARRING PAUL NEWMAN
A FIRST ARTISTS PRODUCTION



MEXICO

HAMMERSMITH IS OUT

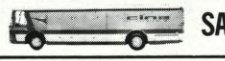
RICHARD KLINE — CINEMATOGRAPHER
STARRING LIZ TAYLOR & RICHARD BURTON
A J. CORNELIUS CREAN PRODUCTION



NEW YORK

THE GANG THAT COULDN'T SHOOT STRAIGHT

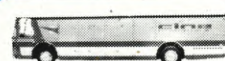
OWEN ROIZMAN — CINEMATOGRAPHER
(M.G.M.) CHARTOFF-WINKLER PRODUCTION



SAN FRANCISCO

THE ORGANIZATION

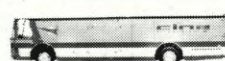
JOE BIROCK — CINEMATOGRAPHER
UNITED ARTISTS
MIRISCH PRODUCTIONS, INC.



HOLLYWOOD

LAPIN 360

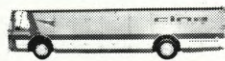
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HERBERT MARGOLIS
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MONTANA

EVEL KNEIVEL

DAVID WALSH — CINEMATOGRAPHER
GEORGE HAMILTON
FANFARE FILMS PRODUCTION



HOLLYWOOD

MINNIE AND MOSKOWITZ

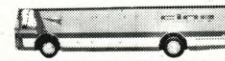
JORDON CRONENWETH — CINEMATOGRAPHER
UNIVERSAL STUDIOS PRODUCTION



HOLLYWOOD

ANOTHER NICE MESS

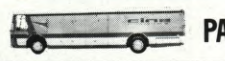
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ANOTHER NICE MESS CO.
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HOLLYWOOD

THE MAN

EDWARD C. ROSSON — CINEMATOGRAPHER
A.B.C. CIRCLE ENTERTAINMENT
LORIMAR PRODUCTION



PARADISE COVE

THE LATE LIZ

HARRY STRADLING, JR. — CINEMATOGRAPHER
DICK ROSS & ASSOCIATES PRODUCTION



SO. CALIF.

S R O

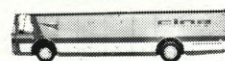
JOHN KOESTER — CINEMATOGRAPHER
BILL REDLIN — PRODUCTION



SANTA ROSA

A TIME TO EVERY PURPOSE

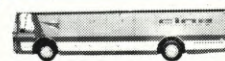
CARL MARQUARD — CINEMATOGRAPHER
CHRIS WHITTAKER
ED GARNER PRODUCTION



TUCSON

POWDER KEG

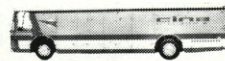
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DAVID FRIEDKIN/MORT FINE
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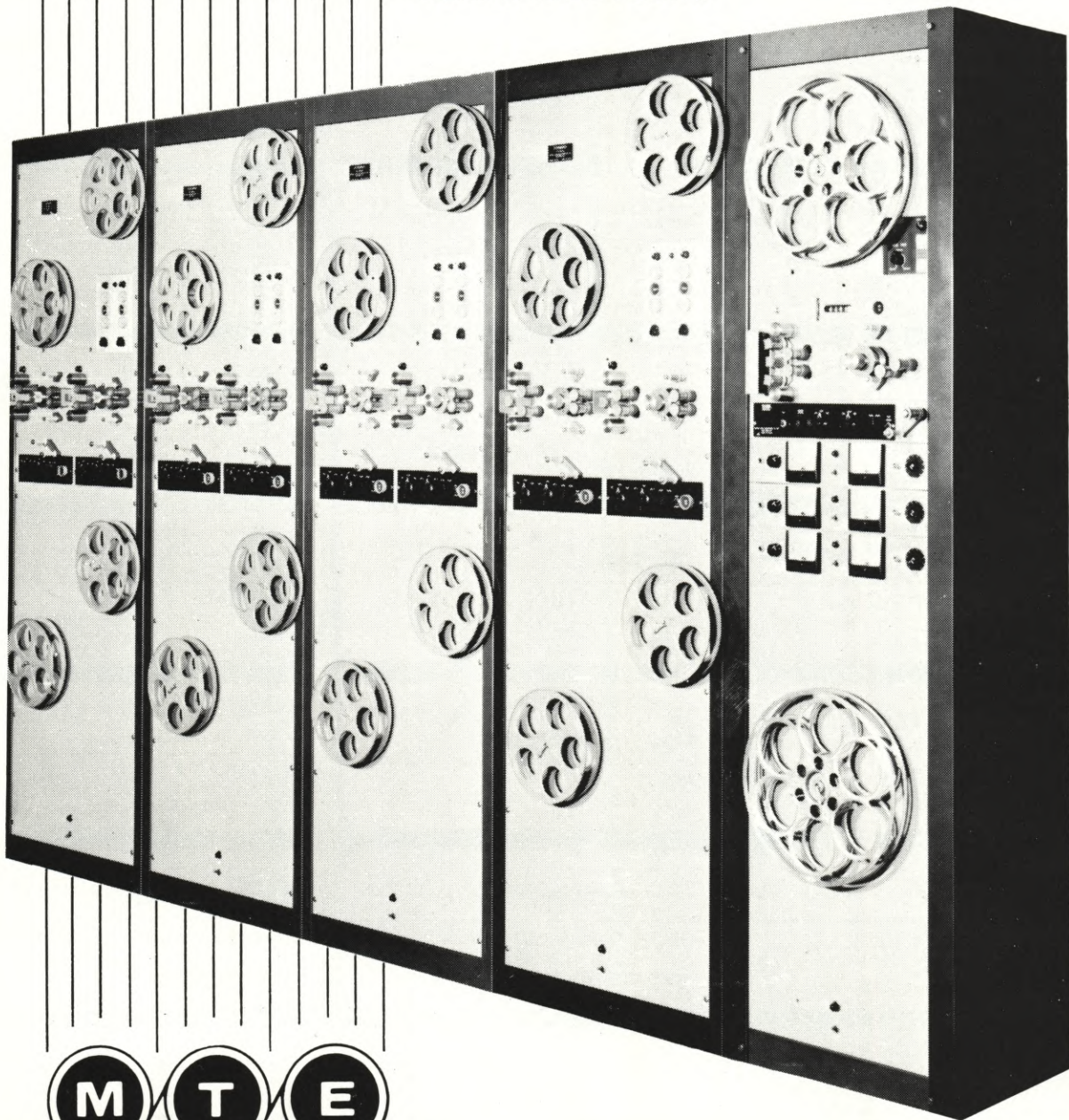
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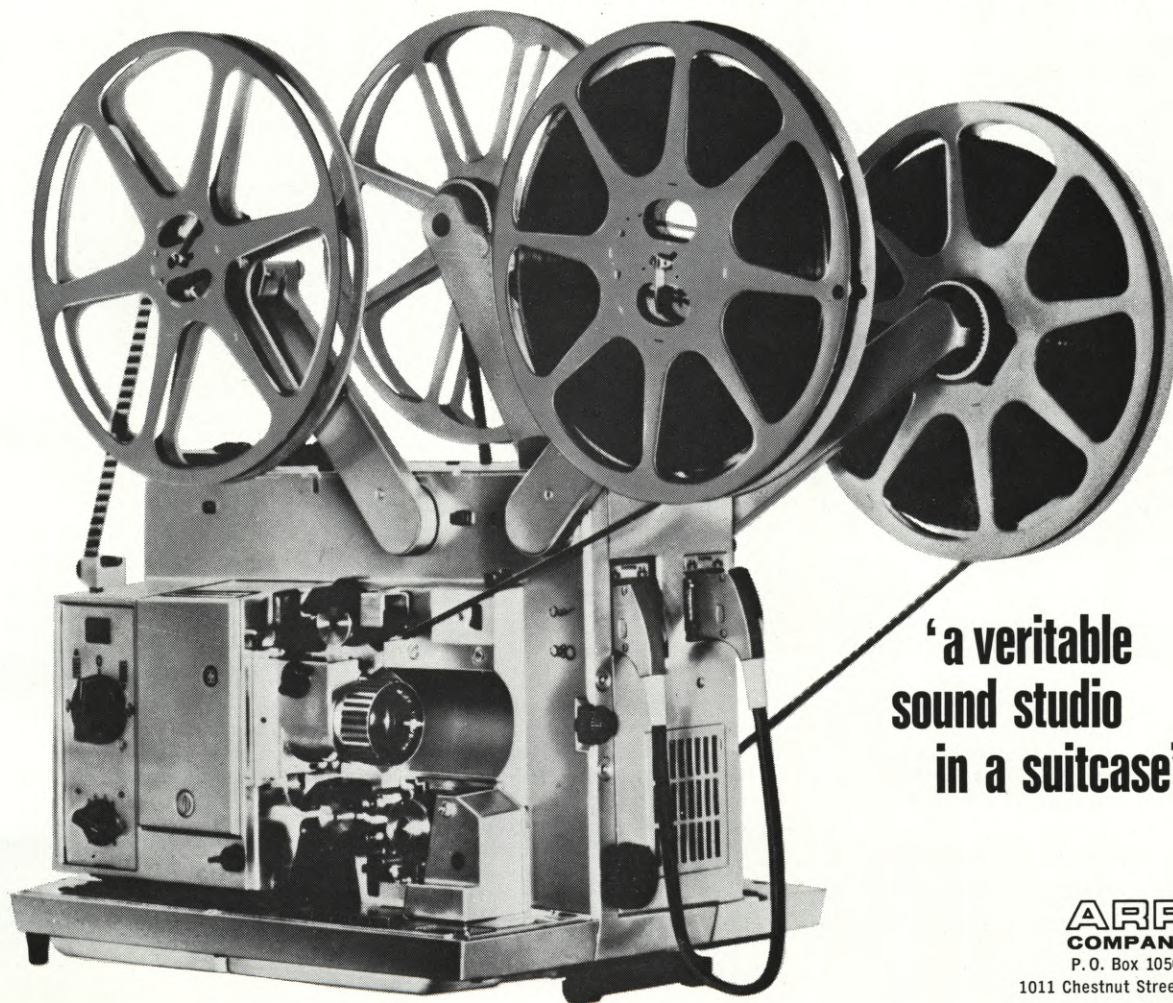
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FILMING "THE GOLDSEEKERS" IN THE PHILIPPINES

His first time out as Director of Photography on a feature film, intrepid cameraman finds the conditions less than ideal, but rises to the exhilarating challenge

How much of low-budget location production means hostile-environment filming? Quickie westerns seem always to shoot in a god-forsaken patch of desert in the dead of winter; adventure epics inevitably find themselves being made wherever 97% humidity prevails; or a dust storm is added to an otherwise benign setting. Well, it really isn't all that bad, but what luck, I felt, to direct photography my first time out, in the soft, embracing atmosphere of the Philippine Islands, one of the unique places in the world where the people, at least at the time of our filming, enjoyed contact with Americans and did everything within their power to help or cooperate. A place, too, where the light seems to envelope the myriad and variegated forms of life with a pervasive softness. The warmth of the air and this diffuseness of the light were the first things that impressed me during my first morning in Manila after deplaning at dawn and losing a day during the 16-hour all-night flight.

It was right then that I formulated my plan to restate the soft luminescence of the natural light in my interior lighting for "THE GOLDSEEKERS"—at least as far as the script requirements and equipment at my disposal would allow. Luckily, I had brought a roll of Marlox material and two of spun glass from the States.

The initial period was, for me, a matter of reconciling all the cinematographic possibilities the location suggested with the physical and budgetary limitations, such as the sobering reality

that I would have the use of one 10K lamp and two seniors only two times throughout the production. I was to light more than 90% of the interior and night scenes with 10 Colortran units and a few FAY lights. With the Panavision sidelines, this portended certain problems.

On one of the two occasions when we had the larger units, we were out in the back country for a night ambush sequence. For the master scene we employed every light we had—even the work light—every bit of extension cable, including some house wire someone found in the prop truck. We opened the lens all the way to F/2.8 and had to push the Eastman Color film to 400 ASA! If we didn't get a bad lab report on that one, I figured we were over the hill.

Some people in the industry might well ponder the advisability of attempting the sort of things we did with the limitations we had, but I think one of the rewards of making films comes from the reaching out and attempting you can do in almost every situation. Sure, it's agreeable to have all the light, production facilities and time you could possibly use, but there's a great deal to be said for the challenges inherent in filming at the other end of the budget scale. Anyone who has seen a collection of student films will know what I mean. How many times does the need to be resourceful culminate in a totally new way of seeing—and filming—a totally familiar subject?

After checking all the equipment,

welding and adapting some alien parts in the FAY units (called "clusters" by the Filipinos) and getting acquainted with each other across the barrier of language, we were almost ready to go. Now, I don't want to deride the internal workings of any foreign country, or the mysteries of the oriental mind, for that matter, but I must say the Philippine customs gave us some anxious moments. In fact, they were to create the only real problem in our filming experience.

With all the risks of scratched emulsion, unwanted flares, damage or accidents, the only loss of footage was accountable to some unnamed Filipino customs agent who didn't believe there was film in the cans of the very last shipment to be sent to the States for processing. So he opened one of them to see. Great. We can only conclude that he was satisfied, since the shipment arrived in Hollywood—only with a good solid edge fog into ¼ of the picture area throughout 300 feet of negative. Perhaps that was a small price to pay for the opportunity to film in the Philippines, but the feeling nags me that we could have gotten on quite well without it.

I cannot speak too highly of the crew. One hears a lot in the States about the language barrier. But a good technician is a good technician even if his native tongue is different from ours. After all, when we are in another country, the language limitation is ours. One can only hope that the language of motion picture technology is universal enough to make communication possi-

(LEFT) The author, discussing optical characteristics of the Panazoom lens with Paul Salcedo, top Filipino actor who had important role in "THE GOLDSEEKERS". At right is assistant cameraman Marcos "June" Rasca. (CENTER) Colortran units lined up behind a capiz shell screen for a "daylight" sequence shot around 10 p.m. at the Savoy-Philippines Hotel. Technician Juanito Valdez awaits instructions to "boost" lights to 3300° Kelvin. (RIGHT) "Night-for-day" lighting through shell screen produced this effect, as actress Barbara Bouchet studies map of palace grounds.





(LEFT) Production Manager Vance Skarstedt organizes cast and crew for sequence to be shot against reflecting pool in front of the presidential mansion. (CENTER) Preparing to shoot a point-of-view shot from the hood of a car, cinematographer Brenner passes on pertinent information to Filipino Assistant Director Hernan Robles. The motorcycle riders are, in real life, escorts for the mayor of a local township near Manila. (RIGHT) Cameraman Jules Brenner discusses line-up of a shot with camera assistant George Rosales aboard a freighter in Manila Harbor, while crew boss Julian Baltonado looks on.

ble. As it turned out, the members of my crew were almost all capable of speaking some English. The hazard was in the fact that not all had an equal ability to understand it. It became necessary to rely on the few whose command of English was wide enough to ensure that instructions were understood by the necessary people and properly carried out. Beyond that, it was apparent that the capabilities of the key technicians paralleled the best in Hollywood.

There is no way to ignore the great need for patience in filming in the Philippines. It's not so much because of the language barrier as it is in the differing techniques and the absence of equipment we consider basic. How many times I stood and watched the grips and electricians wire and tape a lamp to the ceiling or wall when a simple plate and some nails, or a modified C-clamp would have accomplished the job faster and easier, eliminating the light stand as well.

But a word of caution to cameramen who may film there: though the Filipinos may have some methods of problem-solving alien to your own, demanding that a thing be done a different way, or faster, will usually have an effect opposite to the one desired. At best it will frustrate their natural desire to do what you have asked in the first place. For sheer determination to work and to please, the Filipinos cannot be beat. I found the best results were obtained from my crew by making sure they knew what I needed and then allowing them to do their best.

Real places were used as sets throughout the picture, which gave us a built-in authenticity. In the Philippines, anything less than authenticity would be tantamount to losing a great opportunity. We also had a formidable per-

centage of interiors and night sequences, which, for a low-budget picture, was somewhat unorthodox. On more than one occasion we even shot "night-for-day."

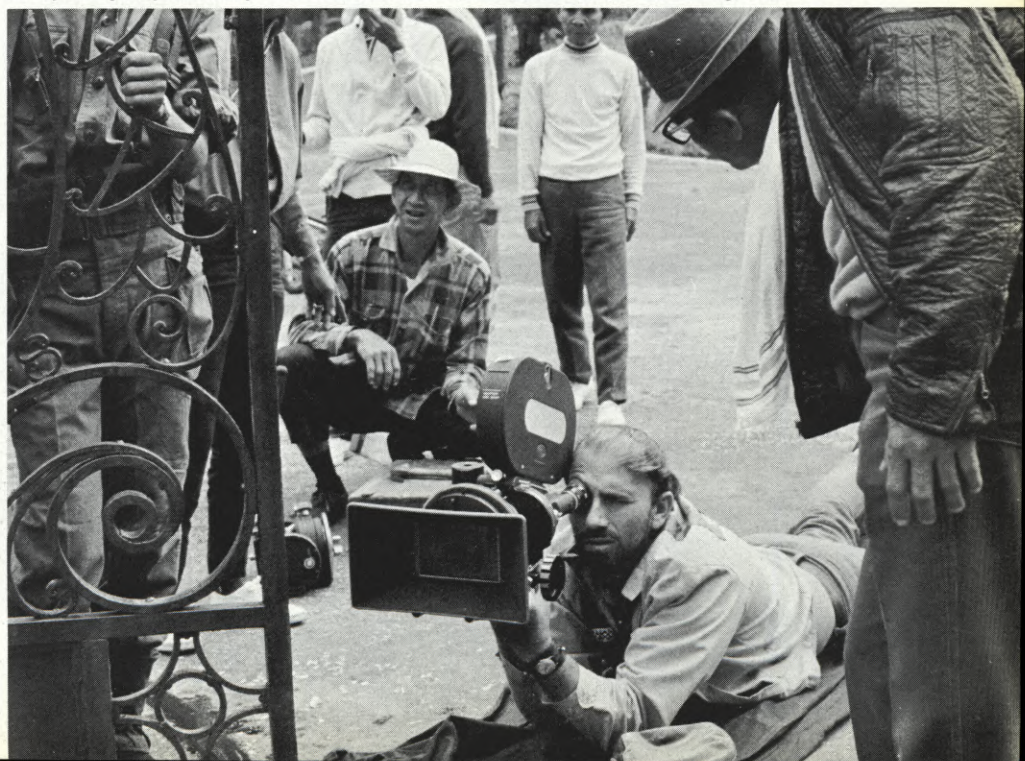
We were shooting in one of the rooms of the Savoy-Philippines, our own hotel. I have never seen cooperation to the extent that we received from the management there. After shooting all day in this room we found that we had the actors, the set and the wardrobe for another day sequence. The only trouble was, it was no longer day. The director, Wray Davis, looked at me, I looked at it, and away we went. It wasn't often that all the elements came together so conveniently, so we had to take advantage of it.

The problem was to find a logical

light source, a window through which daylight *could* pour, given the right conditions. At the same time we had to assiduously avoid seeing any of the windows since nothing was behind them except Manila starlight. The solution was a large Capiz shell screen which we had amply established in the background of a number of preceding scenes. In actuality, though it appeared to be there to filter the outside light in a decorative way, it was covering a rather unsettling view of a section of Savoy roof. But there was no one who could say daylight *couldn't* make it through that screen, and so daylight *did*, at around 10 P.M.—except that the "daylight" was actually the combined illumination of 10 Colortran units lined up

Continued on Page 698

A reverse low angle has cameraman Brenner sprawled on the ground to shoot through gate as it swings open to just barely miss the camera and allow entourage of cars to enter grounds of "Indonesian Palace" (in reality, the Savoy-Philippines Hotel). An eyewitness claimed that this set-up was just yards away from one shot some years before by Arthur Arling, ASC.





WORLD COLLOQUIUM

THEATRE/TELEVISION/FILM
LIGHTING

The LIGHTING 2000 World Colloquium on Theatre, Television and Film Lighting, held at New York's Hotel Roosevelt, May 23-27, under the sponsorship of the Illuminating Engineering Society, brought together lighting designers, engineers and production people from all over the United States and several foreign countries.

Though some of the visitors were not quite sure what the term "colloquium" meant, they assumed (correctly) that it was a fancy word for "conference". It was hoped, however, that the thrust of the meeting would go substantially beyond that and become an in-depth, incisive appraisal of the trends and challenges that will concern people engaged in lighting for the entertainment media during the next few decades.

Since no one present seemed to be equipped with a functional crystal ball, it was not really possible for anybody to speak authoritatively about the character of lighting one might dependably expect to prevail in the year 2000. Therefore, what actually occurred were

discussions of lighting systems *now* operable in the various media, plus those under development for the *near* future. In the panel discussions there was a certain amount of vague conjecture about lighting "in the distant future", but nobody seemed able, in any concrete way, to define the technology that is likely to pertain in the year 2000.

Disappointing to those attending whose interests lie in the field of motion pictures was the fact that almost the total emphasis of the conference was directed toward Television and Stage Lighting, with Film Lighting left out in the cold. Token recognition of this important area of lighting was made in designations of the panels, but not one major paper was devoted exclusively to the subject. If the brain trust of the Illuminating Engineering Society expects film people to travel halfway around the world to attend future conferences, they had better make sure that a fair share of the program is devoted to this area of lighting.

A panel entitled: "An Overview of World-Wide Lighting Techniques in Stage, Film and Television", boasting a group of distinguished panelists, dwelt mainly on what was now being done and the fact that most of it was already obsolete.

Acting as a kind of Devil's Advocate from the floor was Tom Lemons, who bedevilled the panel with the pronouncement that nothing the panelists were discussing was "where it's at" and that one must think along those lines. Asked to be more specific as to what "where it's at" meant in reference to lighting, he failed to give examples. However, he was certain that high-wattage tungsten-halogen lamps were one thing that definitely wasn't "where it's at"—a rather surprising statement coming from Tom, since he was one of those most instrumental in developing these Academy Award-winning lamps during his tenure at Sylvania.

A paper entitled "New Discharge Lamps for Television and Film Lighting", by Dr. B. Kuhl was eagerly awaited by those who have been following the development of these metal halide lamps with very high lumens-per-watt characteristics, but the paper turned out to be a scholarly engineering report which completely skirted the all-important factor of practical application. It was only in response to a question from the floor that this subject was dealt with at all. Dr. Kuhl responded by saying that these lamps had not as yet been used in motion picture production, the drawbacks being the need for high-voltage ignitors to restart them, their flicker characteristic and the fact that they put out light with a greenshade cast.

Thomas-Earle Knight, of the Rank Organization, a self-admitted "film man" got more directly down to cases with his paper on "The Era of Remote Control of Lighting for Films, Television and Theatre".

Speaking from his years of experience at Pinewood Studios, and on the basis of expertise gained from working contact with the four newest stages at that studio, which are equipped with a grid system and monopole lighting, Mr. Knight spoke optimistically of motorizing existing luminaires and designing new, more highly functional automated units.

This subject was kicked around more generally during the course of a later panel entitled "The Need and Feasibility of Automated Dimming and Rigging Systems". The burning question at this point, at least in regard to film production, was whether, in the future, any films at all would be shot in studios, considering the growing trend toward filming in actual locations.

Herb Lightman, Chairman of the IES Film Lighting Committee, fully acknowledged the location filming trend, but added that, in his opinion, there

(LEFT) Lighting engineers, designers and production personnel from all over the United States and several foreign countries gather in ballroom of New York's Roosevelt Hotel for Lighting 2000 World Colloquium, sponsored by the Illuminating Engineering Society. (RIGHT) Panels composed of authorities in various fields of lighting were a mainstay of the conference.





(LEFT) A highpoint of the Colloquium program was a "backstage" tour of the facilities available in the various auditoriums of Lincoln Center. Here the conferees gather in the sumptuous new Metropolitan Opera House to begin the tour. (RIGHT) The Lighting Designer for the Stuttgart Ballet explains operation of the enormously complex dimmer system for lighting the Metropolitan's huge stage.

would always be a certain amount of filming done in studios "because location shooting is a mixed blessing. It costs a great deal to maintain crews on location and you rarely have full control of all of the elements, weather included. Also, certain pictures, such as period vehicles, musicals and large-scale spectacles will require sophisticated facilities that only a studio can provide—to say nothing of filmed TV series that rely upon standing sets."

He stressed the fact, however, that the archaic stages available in present-day major studios would not serve the purpose. There would be a need for new ultra-modern studio complexes incorporating the most advanced production facilities, including a certain degree of automation.

The social side of the LIGHTING 2000 World Colloquium was perhaps, a greater success than its academic side. Almost a full day was devoted to a tour of the facilities at Lincoln Center, with special emphasis on the Metropolitan Opera House and its lighting facilities.

A small group, comprised of those particularly interested in film production, also paid a visit to the Filmways Studios in the Bronx to watch shooting on the set of "THE GODFATHER".

Following is the program of the LIGHTING 2000 World Colloquium:

I.E.S. LIGHTING 2000 — 1971

Sunday, May 23rd **Hotel Roosevelt**
5 p.m. — 8 p.m. Registration
*Cocktails and Hors d'Oeuvres

Monday, May 24th **Hotel Roosevelt**
8:30 a.m. — 9 a.m. *Coffee
Session Chairman — Philip Rose
9 a.m. — 9:30 a.m. Welcome — S.J. Bonsignore
Lighting 2000 — K.R. Ackerman

9:30 a.m. — Noon Round Table Discussion
Subject: "How Does New Technology Affect the Future of Theatre, T.V. and Film with Regard to Employment and New Facilities"
Panel: K.R. Ackerman, S.J. Bonsignore, F.P. Bentham, T. De Gaetani, C. R. Gibbs, J. Tawil
Noon — 2 p.m. Lunch (Open)

2 p.m. — 2:30 p.m. Paper
Subject: "Lighting 2000 — A Darkling View", Frederick Bentham
2:30 p.m. — 2:45 p.m. Paper Summary
Subject: "Trends in Modern Stage and Studio Lighting in Europe", Wolfgang Bergfield
2:45 p.m. — 3 p.m. Paper Summary
Subject: "RDS Lumiscope Lens Screen Systems for Colour Television", Keiichiro Ryu (Ryudensha-Japan)
3 p.m. — 3:15 p.m. Break
3:15 p.m. — 5 p.m. Panel Discussion
Subject: "An Overview of World-Wide Lighting Techniques in Stage, Film and Television"
Panel: Panel Chairman — Frank Ozburn
T. Earl Knight (England), Wolfgang Bergfield (Germany), T.C. Nutt (Canada), Edward Kook (U.S.A.), Keiichiro Ryu (Japan), C. Ryle Gibbs (France)
6:30 p.m. — 7:30 p.m. *Cocktails
7:30 p.m. — 9:30 p.m. *Dinner
Chairman: S.J. Bonsignore
Guest Speaker to be announced

Tuesday, May 25th **Lincoln Center Complex**
Session Chairman—Bob Brannigan
9 a.m. — 11 a.m. Tour of Metropolitan Opera House
11:15 a.m. — Noon Liszt Hall
Paper and Demonstration
Subject: "Fast-Response, Full-Colour Stage Lighting Systems", Dr. Richard Iacobucci

Noon — 2 p.m. *Lunch at Lincoln Center
Session Chairman—Jim Connolly
2 p.m. — 2:45 p.m. Tour of Vivian Beaumont Theatre
2:45 p.m. — 3:15 p.m. Paper
Subject: "Coordinated System of Multi-Screen Projections — Scenery Projected with Light", Dr. Elmer Nagy
3:15 p.m. — 3:30 p.m. Break
3:30 p.m. — 4:30 p.m. *Tour of New York State Theatre
4:30 p.m. — 4:45 p.m. Paper
Subject: "A Practical Xenon Follow Spot", Frank A. Eder
5 p.m. — 5:30 p.m. Brief look into Philharmonic and Julliard Halls
5:30 p.m. — 7 p.m. *Cocktails at Philharmonic Cafe

Wednesday, May 26th **Hotel Roosevelt**
8:30 a.m. — 9 a.m. *Coffee
Session Chairman—Charles Neenan
9 a.m. — 9:30 a.m. Paper
Subject: "Memory Systems Available Today, Their Functions and Future", Tim Loomis
9:30 a.m. — 10 a.m. Paper
Subject: "The Era of Remote Control of Lighting for Films, Television and Theatre", T. Earl Knight

10 a.m. — 10:30 a.m. Paper
Subject: "Light Control Equipment with Memory Elements", Tadayoshi Fukuda
10:30 a.m. — 11 a.m. Paper
Subject: "A Memory Lighting Control System", Dr. Joel Rubin
11 a.m. — 11:30 a.m. Paper
Subject: "CBS Electronic Memory Lighting Control System", Salvatore J. Bonsignore
11:30 a.m. — Noon Paper
Subject: "A Television Lighting 2000", K. R. Ackerman
Noon — 2 p.m. Lunch (Open)
Session Chairman and Panel Moderator — Richard Glickman
2 p.m. — 4 p.m. Round Table Discussion
Subject: "The Need and Feasibility of Automated Dimming and Rigging Systems"
Panel: Bill Klages (Television), Ross Lowell (Film), Ron Olson (Theatre), Herb Lightman (Film), Bob Brannigan (Theatre), T. Earl Knight (Film), Laird Davis (Television)
4 p.m. — Open ended Discussion
Session Chairman and Panel Moderator — Imero Fiorentino
Subject: "Professional Responsibility", A discussion of the roles of: Manufacturers, Consultants, Unions, Lighting Designers and Management
Panel: (Rotating)

Thursday, May 27th **Hotel Roosevelt**
8:30 a.m. — 9 a.m. *Coffee
Session Chairman — Nick Rainone
9 a.m. — 9:30 a.m. Paper
Subject: "New Xenon Compact Arc Projection Lamps for Horizontal Operation", John K. Michel
9:30 a.m. — 10 a.m. Paper
Subject: "The Characteristics of Molecular Arc Lamps", Charles Clark
10 a.m. — 10:30 a.m. Paper
Subject: "New Discharge Lamps for Television and Film Lighting", Dr. Kuhl
10:30 a.m. — 10:45 a.m. Break
10:45 a.m. — 11:15 a.m. Paper
Subject: "Hard Glass Halogen Lamps — A Breakthrough for Studio Lighting", Robert Griffin
11:15 a.m. — 11:30 a.m. Paper
Subject: "Flexibility Through Modularization in Lighting Control", Robert A. Slutské
11:30 a.m. — Noon Paper
Subject: "Dimmer Curve Tests for Theatre & Television", William Shearer — C.B.C., Canada
Noon — 12:30 p.m. Paper
Subject: "Lighting 1970 — On A Budget", William Little

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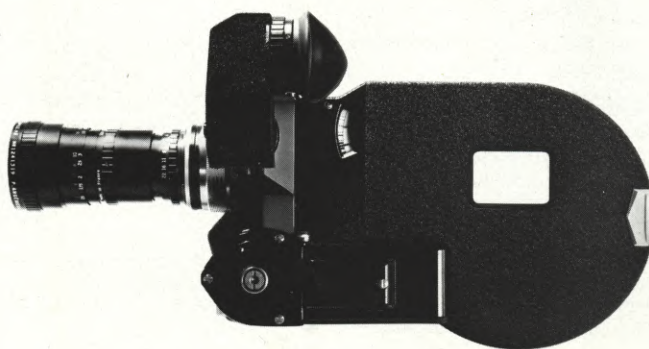
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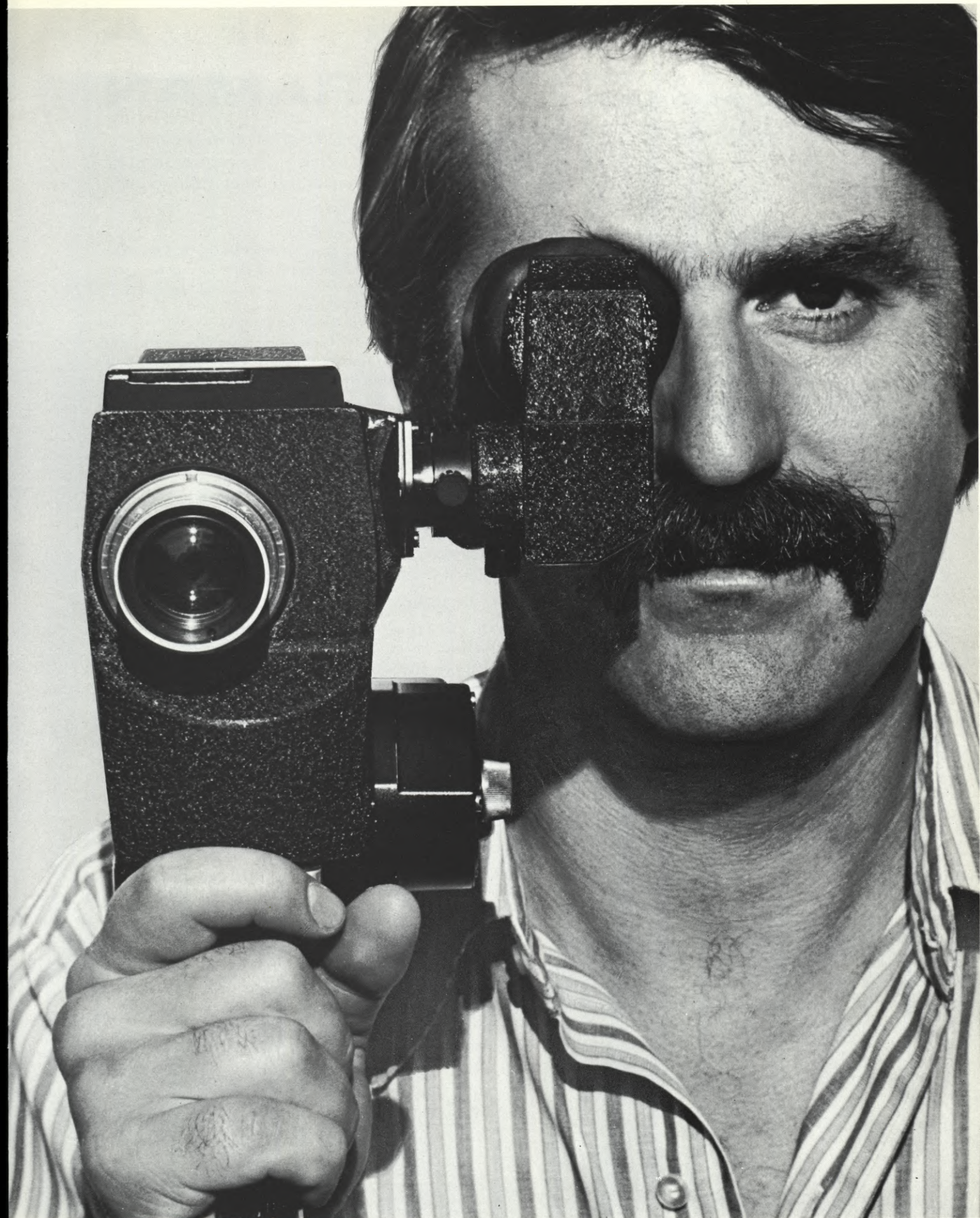
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THE CHALLENGES OF A FREE-LANCE CAMERAMAN

By WOODY OMENS

There's an old saying that in any team effort you are no stronger than the weakest member of your team. In a recent commercial any one man or woman in the crew and cast of thirty-seven might have, at a given instant, become the weak link in the team chain. A cue missed, or a job done carelessly, or lack of professional skill at a critical moment might have required a re-shoot. It would not be exaggerating to say that certain specific errors could have been fatal. Happily, I can write with pride that we never found a flaw in our team nor shall we ever know who might have "blown the shot".

Incredible as it may seem, all the energy put forth by the team was for one single shot which lasted between 46 and 50 seconds. Let me briefly outline the shot and its requirements as they were presented to me.

THE PROBLEM—"UP THE APARTMENT"

1. In less than 50 seconds, move up the side of an 11-story apartment building and look into seven rooms, each of which must be illuminated for a different mood. The total height is 130 feet.
2. Five of the floors will have actors, some of whom will be cued by a playback system.
3. Two of the floors are to be still-life setups. In one there is a lamp in the window. In the other is a TV set which has been left on, apparently by someone in the adjoining room.
4. The general mood of the whole scene: approaching the dinner hour . . . that special condition you have in the city when the sun has just set and left an afterglow in which the contours of the skyline and the last textures of cement and brick are visible. Into this are sprinkled patterns of window lights which separate brightly from the sea of buildings. This is the time of day affectionately

These days—and especially when photographing those zany TV commercials—a cameraman must be everything from a "human fly" to an Eskimo Pie

referred to as the "magic hour".

5. The move up should give the impression that the scene represents the subjective point-of-view of a person some distance off, possibly one who is in a building across the street. A binocular matte will not be allowed.
6. There can be no dissolves between floors. At the 11th floor, before the crane stops, the camera must tilt up to end on clear sky. Into this clear sky area will be matted a shot of an airplane flying away.

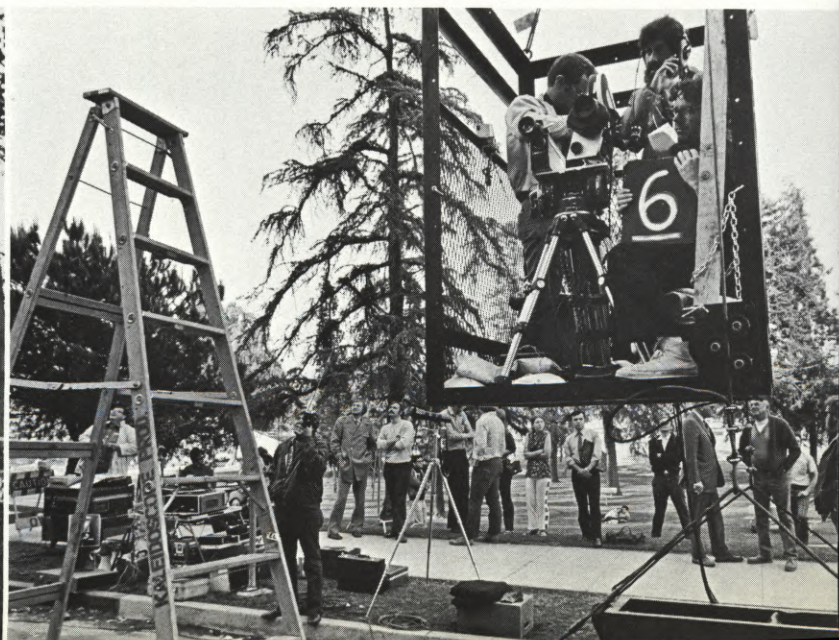
These were the essential conditions of the shot, but there were still some additional factors to be considered. There was the possibility of the horizontal lines of the building "strobing". What about the potential for "transfer of motion", that special condition when the object, not the camera, appears to move? Would the building appear to sink before the eye of a stationary camera? Also unknown was the smoothness of the crane and the speed control of the move upward. And last was the question in the back of my mind: *Was the whole shot safe to do?*

THE SOLUTION

On the pre-light day we positioned the crane and went for a test ride. We also made a short test on film to see what the strobe and "transfer of motion" potential was. The ideal focal-length of the lens to be used we determined was 80mm. The crane move was quite smooth, but with wind variation the guide cables created a low-frequency chatter. I had decided, even before the test day, to use a 35mm Arriflex camera, the 35-to-140mm Angenieux zoom, and the Dynalens. As it turned out, the Dynalens was invaluable in smoothing out the ride.

Our test showed that a several-second hold in framing on each floor eliminated both strobe and transfer. Since the

(LEFT) Facade of the Sheraton West in Los Angeles, shown during filming of commercial which required camera, hoisted by a giant crane, to move up the side of the building and "look" into seven rooms, each on a different floor. Numbers in windows were used for purposes of communication and identification. (RIGHT) Camera and crew in hoist cradle, on their way up. Displaying of cue card #6 set the crew in motion to adjust the lights as required. Note Dynalens on camera.





(LEFT) The smaller card indicates that the first lighting cue has been completed on Floor 6. Floor 5 was completed moments later. (RIGHT) Actors shown rehearsing on the top floor of the building. Note the sheets of plastic material used in front of FAY lights in order to achieve a soft, natural type of room light. Five of the floors had actors in the rooms, some of whom were cued by means of a playback system.

crane was given one continuous speed, the camera had to tilt in order to hold the framing at each window. Obviously, the perspective changed so that we usually saw part of the ceiling at first and then finally part of the floor.

The 80mm focal-length provided just enough perspective distance to suggest the appropriate spatial quality. A focal-length much longer than this would have multiplied the vibration factor to the point of possibly making the shot unusable. So, at this point at least, we had defined some of the optimum requirements.

To make the sharp tilt at the end of the move, I chose a 300-lb. test O'Connor 100 fluid head. Less resistance in the head would mean an easier 75-degree tilt to the sky.

So that the director could see the action at each floor, we mounted a small TV camera alongside the Arri and ran a 130-foot cable to the monitor.

To achieve the lighting as requested, I decided to begin with a *day for night* technique in which the 85 filter is removed and the scene is underexposed. Underexposure here was to apply only to the exterior of the building, not to the interior rooms. Fortunately, the building we chose went into shade at 2:00 in the afternoon, thus helping to drop the exterior intensity down. Naturally, the more the exterior dropped in brightness, the less the room light would have to be brought up to keep the balance. (See the chart below.) However, one very significant detail kept us from shooting until 5:45 in the evening. The white buildings far across the park reflected in the windows of our "hero" building, and into these bright images we saw the perfect silhouette of the camera cage and its cables. By waiting the reflections became less prominent.

Based on what the exterior lighting intensity would be at 5:45, the following system was selected. Both the Gaffer and the First Assistant had copies of this chart.

When the Exterior Level Is		The Interior Level Must Be	
1. T/1	6 fc	T/2	25 fc
2. T/1.4	12 fc	6:30 pm	T/2.8
3. T/2	25 fc		50 fc last shot
4. T/2.8	50 fc		T/4
5. T/4	100 fc		100 fc
6. T/5.6	200 fc		T/5.6
7. T/8	400 fc	5:45 pm	200 fc
			T/8
			400 fc
			T/11
			800 fc first shot
			T/16
			1600 fc

Note: This is based on ASA 200 and one-stop forced development of 5254. The forced development became necessary due to beginning the first shot so late in the afternoon. In this way we could shoot a little longer after sunset. It should be quite apparent that what was day-for-night became night-for-night as it grew excessively dark. Interestingly enough it was the day-for-night shot which was finally chosen for the commercial.

Our first shot was set for *Line Six* in the chart. This became known as *Cue Six* and from the stills you can see that when a *six* was displayed at the camera, a man on each of the seven floors knew to set his lights accordingly. Having done this with maximum speed, he responded by showing a *six* in the window. The shot was then in a "ready standby" condition. Each change was cued after I had taken my incident reading from the exterior light (left half of the chart). We were able to make several takes on cues *six* and *five*, but thereafter it was one take and a lighting change instantly. I can thank my Gaffer, Pat Kirkwood for so cleverly engineering the manner of individual light adjustments on all floors and his crew for having been "right on" in making all the cue changes work.

You will see that the chart shows a balance difference,

Cameraman Woody Omens uses a walkie-talkie to communicate to the ground and the building. Through the headset he could hear both the playback and the director's instructions.





The camera cage has reached the top of the move, at which point the camera completed the shot with a tilt upward to the sky. Row of lighted windows indicates rooms used in the scene.

from exterior to interior, of two stops or double the foot-candles for interior. This ratio was what I felt to be a realistic difference in achieving the "magic hour" look. In addition, absence of the 85 filter produced a cool blue building exterior which made the rooms seem much warmer and cozy.

An interesting problem was the lonely TV set on the 9th floor. To get a realistic TV effect which could be dropped in intensity along with the other light sources, we cut a neutral-density gel into some simple shapes and attached them to a

Omens sets reflector for filming of a partially-nude cutie in a glass bathtub—out in the middle of the desert. Helicopter used made filming with 250mm lens impossible.



piece of tracing paper. This was then placed in the window of an empty cabinet and illuminated by a blue-gelled quartz light. With the TV set turned slightly away from the camera, a satisfying effect resulted.

THE BATHTUB

A few months ago I was asked to do a shot of an entirely different nature. The problem was as follows:

1. Photograph a partially nude girl in a glass bathtub taking a bubble bath.
2. Place her in a canyon on a boulder surrounded on three sides by water.
3. From a helicopter, begin in as close as possible and then, in less than 25 seconds, pull away in a 200-degree arc to an altitude of 500 feet.
4. At the top of the move, show the widest view of the canyon and Lake Powell, Idaho.

In a test run we learned a great deal. We found that after four o'clock, when the light was best, drafts in the canyon would not permit a smooth move or stable hover.

At the start of the move, if we were too close to the model, all the suds would blow off her, and who wanted an "X"-rated commercial? Even German TV, for which the spot was intended, couldn't handle that much truth! So we backed off, but the longer focal-length lens now required to get the same size image was unmanageable. The helicopter wind currents returning off the canyon walls made shooting at 250mm impossible. Bit by bit we arrived at some compromises which made the shot work.

The author, dressed in Eskimo parka, sets up the camera for shooting of frigid assignment at Resolute Bay, near the magnetic North Pole. He faced dangers of frostbite, frozen lungs and skin freezing to metal surfaces.



THE ARCTIC

At another time I encountered an assignment of quite an extreme nature. This time the problem was to film a documentary in the Arctic, specifically at the Magnetic North Pole. Here was the problem:

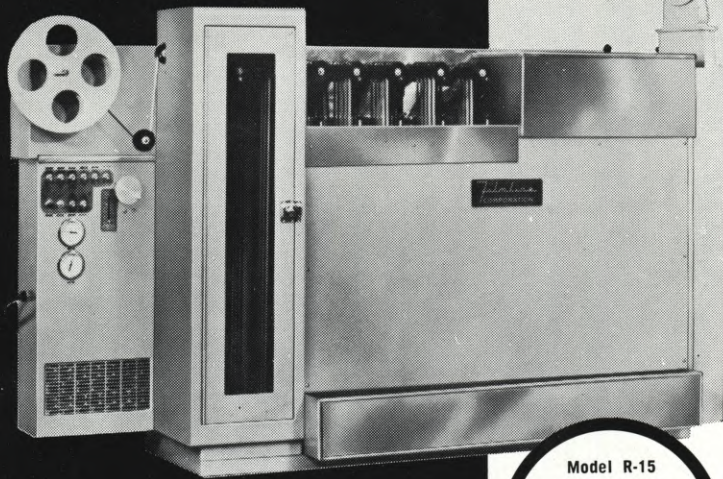
1. In temperatures from -20°F to -60°F , record the events centering around a test experiment and the filming of a commercial being done by another crew.
2. Shoot both indoors and outdoors, sometimes in a relatively short period between these extremes.

Continued on Page 716

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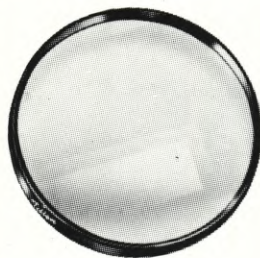
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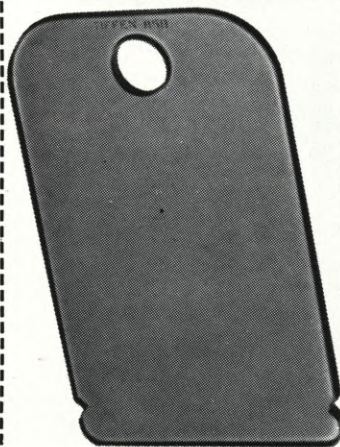
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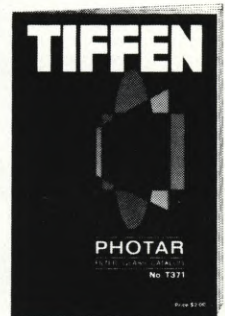
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LABORATORY PROCEDURES

Continued from Page 671

to get the best possible quality. Subsequent prints of the picture could be made from dupe negatives made from the master positive and would still be high quality prints.

With a 16mm black and white reversal original the customary procedure is to make an "internegative" for printing purposes and to store the original for protection. There are two reasons for this procedure. The first is economic. Composite release prints from an internegative are about half as expensive as composite reversal release prints from the "A" and "B" roll reversal original. This is because the printing stock is less expensive, the processing is simpler, and the printing operation is less complicated. The effects achieved by "A" and "B" rolling the original are built into the internegative so that it is printed in a single pass. The second reason for printing from an internegative in 16mm is that it produces prints with the proper emulsion orientation. Projection standards for 16mm derive from the fact that 16mm was originally an amateur format in which the camera stock was a reversal film suitable for projection. The standard emulsion orientation for 16mm was therefore emulsion towards the screen in the projector gate (referred to as B-wind). This is the opposite of the standard for 35mm (A-wind—emulsion toward the projector lamp) since the 35mm standard assumes that the print is contact printed from the camera negative.

Since a contact printer requires that the original and the print stock pass through it emulsion to emulsion, the print produced has the opposite emulsion orientation from the original. If a 16mm release print is produced by contact printing from a 16mm original, it will be an A-wind print. In most cases it is a simple matter to refocus the projector when showing an A-wind print, but non-standard prints can cause problems if they are used for television or in other situations where it is not feasible to re-focus the projector each time a different print is run. It is possible to make B-wind prints from a B-wind original by means of an optical printer or by printing through the base rather than emulsion to emulsion, but the costs of optical printing and the quality loss in printing through the base render both these methods impractical in most cases.

The stock used for making internegatives from black and white reversal

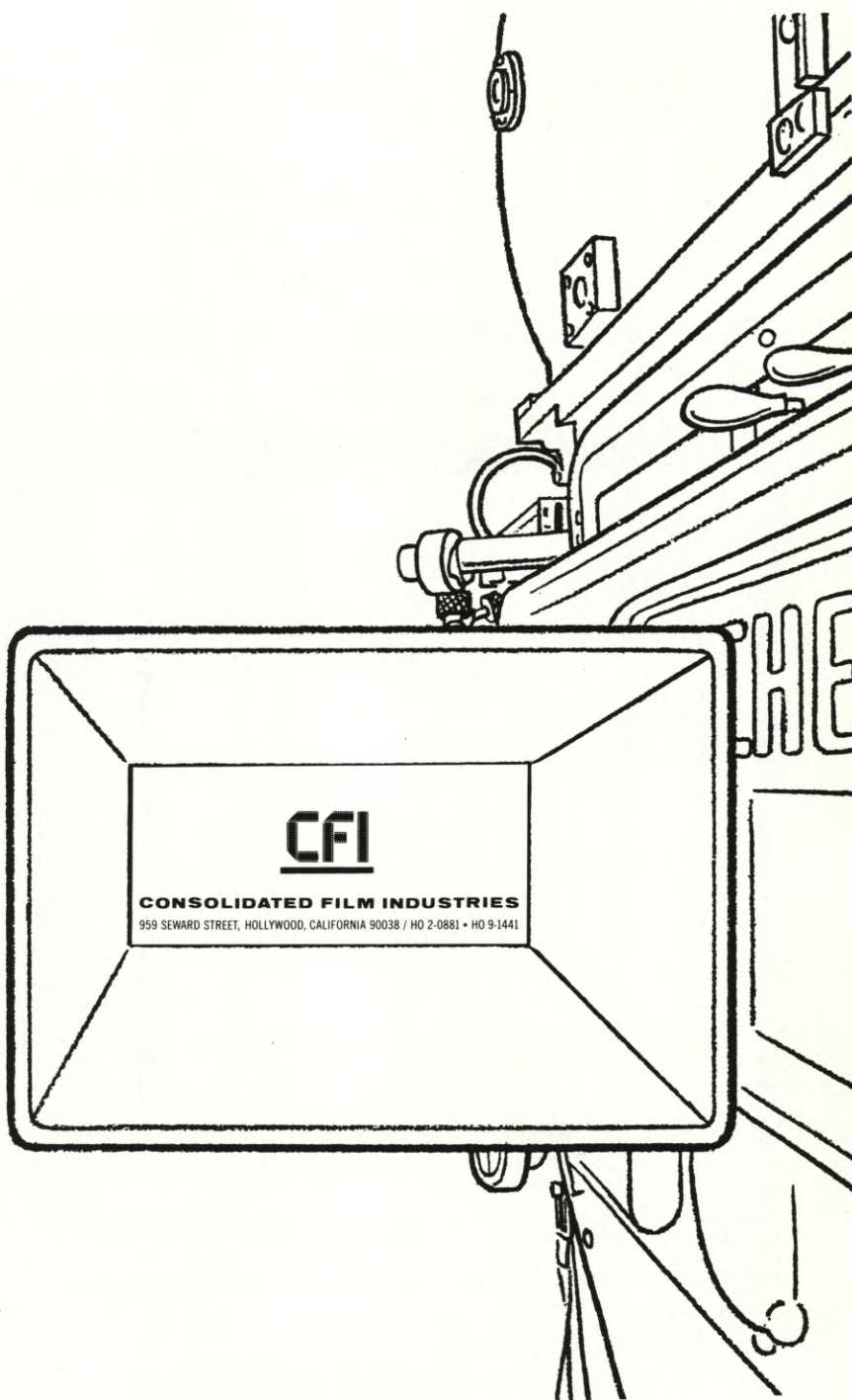
originals is Eastman Fine Grain Panchromatic Duplicating Negative film #7234, the same stock used for making dupe negatives from master positives.

The same procedures apply to the printing of 16mm color reversal originals. The first trial print and a limited number of release prints may be made by printing directly onto Eastman Reversal Color Print film #7385, but bulk printing is done by means of an internegative made on Eastman Color Internegative film #7271. This internegative is then printed onto Eastman Color Print film #7385.

If the original material for a picture is color negative, there are two alternative procedures in providing protection material. First of all, it is now possible to make a color duplicate negative directly from the original negative by means of Eastman Color Reversal Intermediate film #5249 (35mm) or #7249 (16mm). This is a color reversal stock designed specifically for making duplicates of color negatives and differing from other color reversal stocks in that it incorporates the same type of orange mask used in color negative to achieve the proper color balance in printing. A dupe negative made on Color Reversal Intermediate (referred to as a "CRI") can be used in release printing in the same way that an internegative made from a reversal original is used.

A CRI is often supplied to a foreign distributor for making any number of release prints of a picture abroad, for example. With most large theatrical productions it is customary to make the first dozen prints or so directly from the camera negative and then to make the subsequent release prints from a CRI dupe negative. If the release prints are to be standard 35mm A-wind prints, the CRI dupe negative must be made on an optical printer. With a 16mm color negative, the CRI dupe negative can be contact printed so that the release prints will be B-wind.

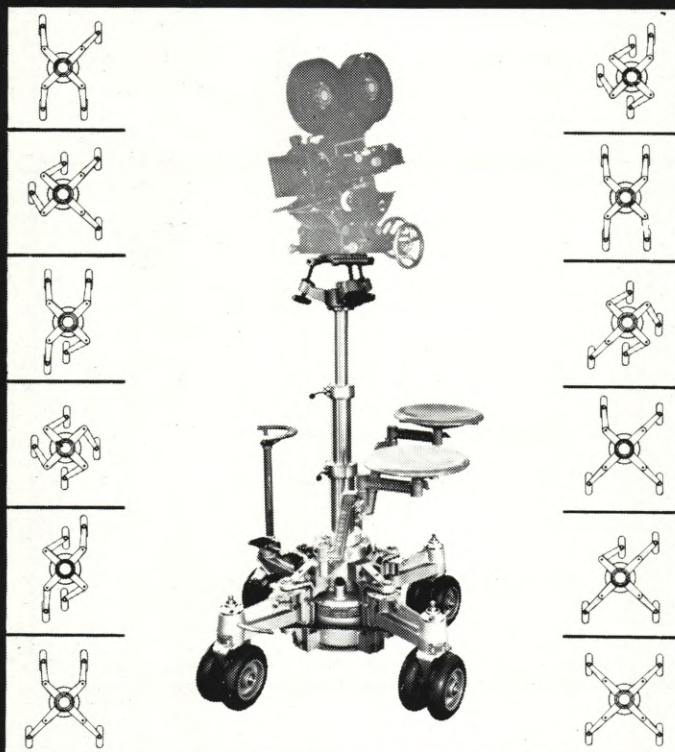
Before the introduction of Eastman Color Reversal Intermediate, color dupe negatives had to be made in two steps. First a master positive (often called an interpositive or IP) was made, and then a dupe negative was made from this master positive. Both of these steps were done with Eastman Color Intermediate film #5253 (35mm) or #7253 (16mm). Color Intermediate #5253 or #7253 differs from Color Internegative #7271 in that it is designed to reproduce a color image which includes an orange mask. Both Color Intermediate and Color Internegative themselves have an orange mask built into them, and negatives made on both stocks are print-



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ed onto the same Color Print film #5385 (35mm) or #7385 (16mm).

A master positive made on Color Intermediate stock does not look like a reversal original and it cannot be printed in the same way that a reversal original is printed. If a master positive were printed onto Color Reversal Print film #7387, the projected image would have an orange cast to it. Similarly if a reversal original were printed onto Color Intermediate rather than Color Inter-negative, the color balance would be thrown off because a reversal original does not employ the orange mask used to maintain the color balance in Color Negative and Color Intermediate films. The reason for the use of this orange mask is a technical consideration quite beyond the scope of this article. It is sufficient to note that its presence causes certain stocks to be incompatible.

There are still some instances where dupe negatives are made by means of Color Intermediate rather than Color Reversal Intermediate. The most notable of these is the production of television commercials where, for a variety of reasons, it is better not to cut the original camera negative and where, quite often, an exceptional number of optical effects are required.

The customary procedure in making a commercial is to make master positives of all the sections of the footage used in the final cut of the workprint, and then to make a dupe negative for the commercial on an optical printer incorporating all of the optical effects at the same time. This dupe negative can then be used to make all the prints of the commercial. If an alternate version of the commercial is required, a different dupe negative can be made from the same original footage and, in some cases, perhaps even using some of the same master positives. While it would be theoretically possible to do the same thing by using the original camera negative and making an optical CRI, it might prove impractical because of the excessive amount of handling of the original negative required to make the CRI.

The protection and preservation of a color picture over the years require yet another procedure, due to the fact that color images are composed of dyes which can fade with the passage of time. If no measures are taken, the picture is as good as lost, once the dyes have begun to fade on the original color negative. The technique devised for preserving color pictures is that of making "separation positives" which consist of three separate black and white prints of the color negative, each of which is

printed through a different color filter and represents a record of one of the three colors in the original image. Since a color negative is essentially composed of yellow, cyan, and magenta images, the group of separation positives is also referred to as a YCM and the individual positives are referred to as the yellow record, cyan record, or magenta record.

Separation positives for 35mm color negatives are made on Eastman Panchromatic Separation film #5235, a fine grain black and white stock designed specifically for this purpose. Since the black and white images are composed of silver rather than dyes, they cannot fade and will last indefinitely. A dupe negative can be made from separation positives by exposing the Color Intermediate #5253 stock three times using a different separation positive and the appropriate filter each time.

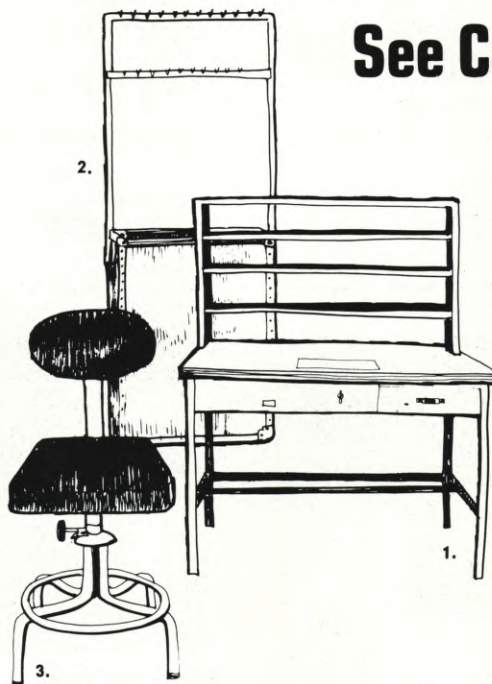
Because Eastman Panchromatic Separation film #5235 is a fine grain film which is sensitive to all three primary colors, it is also the ideal film to use in making a black and white master positive from which a black and white dupe negative can be made if black and white release prints of a color picture are required. If the color negative were printed directly onto black and white Fine Grain Release Positive film #5302 the results would not be as good as a release print made via a #5235 master positive, because #5302 Release Positive is sensitive only to blue light.

If a color picture is made with a reversal original, it is possible to make black and white separation masters in two ways. Reversal separation positives can be made on Plus-X Reversal film #7276 or separation negatives can be made on Eastman Fine Grain Panchromatic Duplicating Negative film #7234. If reversal separation positives are made, release prints can be obtained from them in two ways. The separation positives can be used to make a Color Internegative on Eastman Color Internegative film #7271 which can, in turn, be printed onto Color Print film #7385, or the separation positives can be used to make a color reversal master on Ektachrome Commercial #7252 which can then be printed onto Reversal Color Print film #7387.

If separation negatives are made, release prints can be obtained by making a color reversal dupe negative on Color Reversal Intermediate #7249 which can then be printed onto Color Print film #7385. It is also possible, with either separation positives or separation negatives, to make a release print directly from the separation masters using Reversal Color Print film #7387

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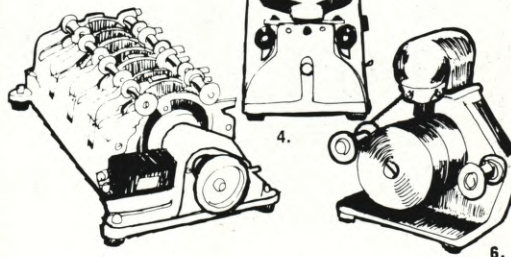


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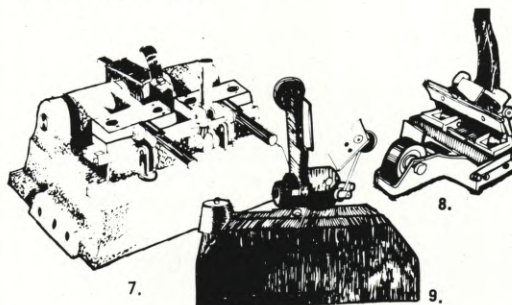
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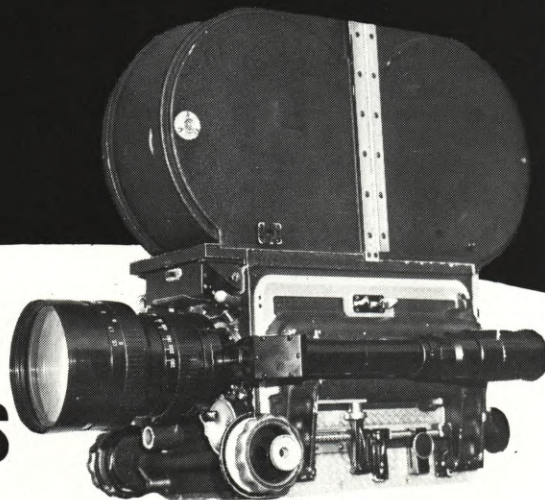
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with the reversal separation positives, or Color Print film #7385 with the separation negatives, but for more than one or two release prints the cost would be prohibitive.

Separation positives made from a 35mm color negative also provide a means of incorporating 35mm stock footage into a 16mm picture. If a 16mm picture is made in color negative, 35mm color negative stock footage can be incorporated into it by means of a reduction CRI dupe negative; but if the 16mm picture is being made with reversal original, as is usually the case, the incorporation of 35mm stock footage presents a problem. If a 16mm reduction print is made of the 35mm color negative onto Color Print film #7285, the contrast of the resulting print will be much higher than the 16mm reversal original material with which it is to be intercut and there will be a noticeable disparity between the quality of the stock footage and the original photography. If, however, separation positives are made from the 35mm color negative, the contrast of the separation positives can be controlled, and the positives can be reduction-printed onto 16mm Ektachrome Commercial reversal film #7252, the contrast of which will match the 16mm reversal original used in the production.

For the producer who wants either Regular 8mm or Super 8mm release prints of his film, Eastman has developed their Color Print film #7381. This stock is similar to Color Print film #7385 except that it has a finer grain structure which makes it superior for 8mm release printing. It is possible to make 8mm release prints from either 35mm or 16mm originals by a variety of methods, all of which can be applied to both Super 8mm and Regular 8mm. The first step is to make a 16mm negative from which the 8mm release prints will be printed. If the original is 35mm color negative, the 16mm negative can be a reversal dupe negative made on Color Reversal Intermediate #7249; if the original is a 16mm reversal original, the printing negative can be an internegative made on Color Internegative film #7271. Because 8mm release printing is a critical operation which cannot as yet be done with a liquid-gate printer, the 16mm negative used for printing should be made on a registration printer and it should be a negative which is created especially for making 8mm release prints. The 8mm release prints are made on either Quad-8 or Double-8 stock. Double-8, which is used for release prints with optical sound, is 16mm film with two rows of 8mm perforations. It

comes either with the perforations on the outer edges, in which case it must be run through the printer twice in opposite directions, or with the second row of perforations in the middle, in which case the two images can be printed simultaneously, since each has the same orientation to the perforation. Quad-8 film, which is prestriped for magnetic tracks, is 35mm film with 5 rows of Super 8mm perforations, (one of which is eliminated when the film is slit into four 8mm prints) or 4 rows of Regular 8mm perforations. In Quad-8 printing the four images are printed simultaneously by means of a special set of lenses.

Throughout the editing of a picture the sound track is separate from the picture, but the release prints must carry the sound track on the same piece of film, either in the form of an "optical" or photographic sound track printed onto the edge of the film, or in the form of a magnetic track recorded on a magnetic stripe on the edge of the film. The traditional method of making an optical sound track is to re-record the track onto film in the form of a negative which is then printed onto the appropriate area of the release print stock at the same time the picture is printed. Eastman has designed their Fine Grain Sound Recording film #5375 (35mm) and #7375 (16mm) especially for making such track negatives.

When a sound-track negative is ordered it is necessary to specify whether the track should be A-wind or B-wind. The emulsion orientation of the track negative must match that of the picture with which it is going to be used. This means that with a reversal original to be printed onto Reversal Color Print film #7387, the track negative should be B-wind, while with a Color Internegative or a CRI dupe negative the track should be A-wind. If the original is black and white reversal and is to be printed directly onto Reversal Duplicating film #7361, it is not possible to use an optical negative track since Reversal Duplicating film, like Ektachrome Reversal Print film #7386, is not designed so that the track area of the film can be processed differently from the picture area. If a track is to be printed onto Reversal Duplicating film #7361, it must be a positive track, i.e., a print made from the negative track.

There is another method of getting a track onto a reversal print known as "electroprinting" in which the track is transferred to the print stock directly

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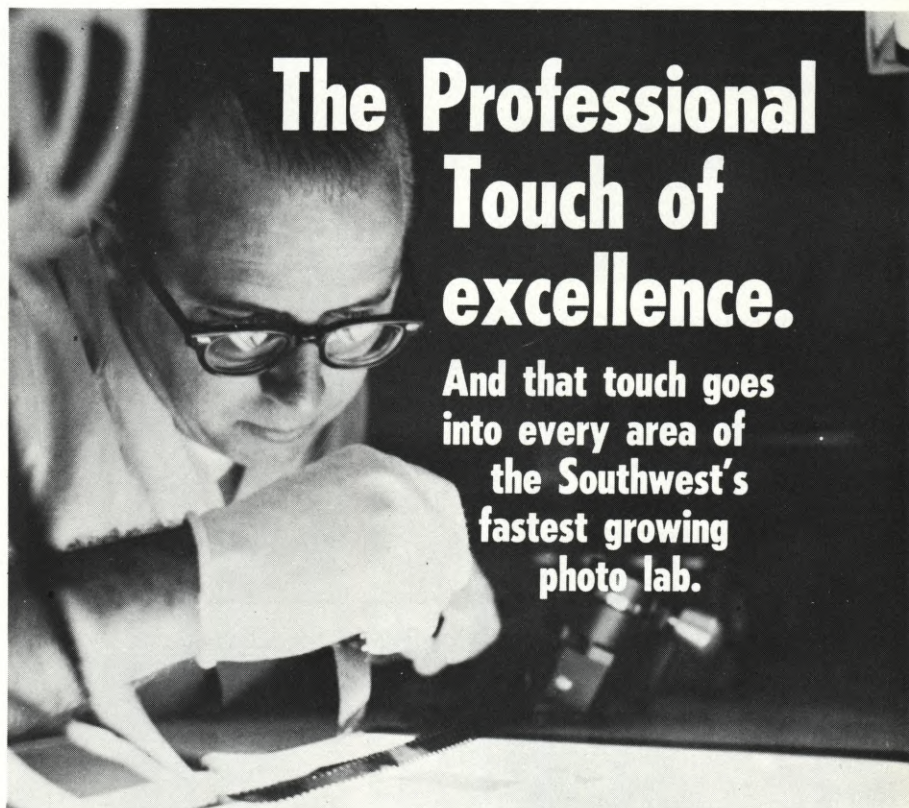
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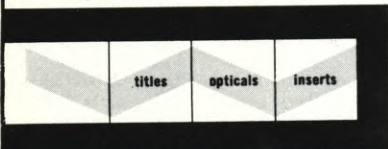


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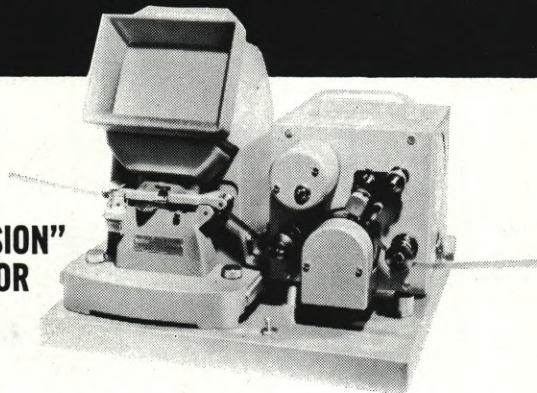
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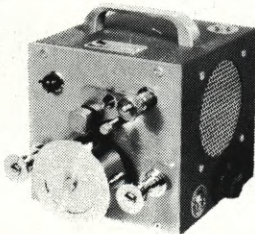
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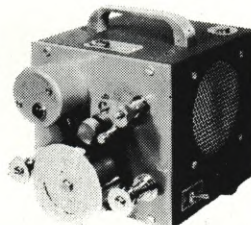
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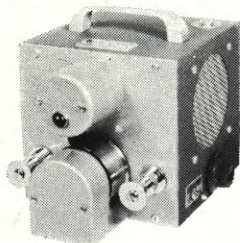
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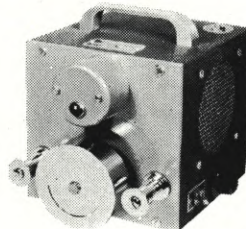


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from the magnetic track in much the same manner that a track negative is made. If only a few prints are required, this is a more economical way of printing the track, and some technicians maintain that it is possible to get superior quality by means of electroprinting a 16mm track, rather than printing from an optical negative or positive track. It is possible to electroprint a track onto Reversal Color Print film #7387 or Ektachrome R Print Film #7389 as well as Reversal Duplicating film #7361. It is also possible to electroprint a track onto Fine Grain Release Positive film #7302, but the quality attainable is much less reliable.

The sound track configuration for 8mm release prints has not yet been standardized. There are a variety of 8mm projectors or viewing systems with sound track configurations ranging from a 125-frame retard to a 24-frame advance in the relationship between sound and picture. Some systems require optical tracks, while other systems require magnetic tracks. The predominant trend is toward magnetic tracks with an 18-frame advance, but it is imperative in ordering 8mm release prints to specify what kind of track is required.

In addition to the film stocks described above, Eastman manufactures a High Contrast Positive film #5362 (35mm) or #7362 (16mm). This is a high-contrast black and white positive film designed for making titles or for making mattes used in special effects work. It was designed as a print stock to be used in conjunction with a camera negative, but it is also widely used as a camera stock and processed as a reversal film. As a reversal stock for shooting titles in 16mm, it is superior to Plus-X Reversal because it has a clear base, whereas Plus-X Reversal has a gray base and can never produce an image with as high a degree of contrast as High Contrast Positive film #7362. If one intends to shoot titles using High Contrast Positive film #7362 as a reversal film, one should check to make sure that the lab can process it as such, and run some tests to determine the appropriate exposure index for the film.

There are other special purpose films available from Eastman such as Television Recording film #5374 (35mm) or #7374 (16mm), which is designed for making kinescope recordings of television programs, but the stocks described above are the ones which are used in the vast majority of production and laboratory procedures.

A NEW EXPERIENCE

Continued from Page 673

on its shoulder pod—and simply kept walking from room to room, adjusting the F/stop as the APEC indicated. I kept the camera rolling and obtained a perfectly balanced negative.

I have learned not to be disturbed when someone in a white skirt walks into the scene, or I pan the camera past a window, and the needle reacts faithfully and jumps to the plus side of the indicator.

I have learned that when I zoom-in, the meter acts as a spot-meter, and I stop down to the reading on the face, or when I zoom back and the subject wears a dark suit and the needle goes into a minus position, that the negative will not be underexposed. I realize that this phenomenon has been taking place inside my camera as long as I have been taking motion pictures, except that I just was not aware of it.

The APEC simply informs me of the slightest light variations, even if they are of a minute nature which the photographic emulsion will not noticeably record.

On one recent assignment, I had to film color slides of the Pakistan flood disaster. The slides were taken by non-professionals, and were all either over- or underexposed.

Again, I used my BL with the APEC. By turning up the rheostat, I "pumped" the necessary amount of light through the back of the slides until the APEC needle was centered. Since each slide required a different exposure, I saved a tremendous amount of time. I was also able to subject the slides to a minimum amount of heat, and obtained a greatly improved 16mm color sequence.

On another assignment, I had to use my Arri S. The set-up called for macro-photography involving several lens extension tubes. Instead of going through mental calculations to compensate for the loss of light, I simply put the lens with the extension tubes on the BL and took the reading with the APEC. Then I exchanged cameras and shot the sequence. As a matter of fact, I have grown so used to the APEC system that, recently, I didn't even bother to take my other light meter on location.

This is what I call the "New Experience in Cinematography", and the use of this meter has certainly required a greater degree of learning and adjustment than anything I have come across in my years of cinematography. I am convinced that it will be a great boon to the professional old-timers as well as the new "exposure meter generation". ■

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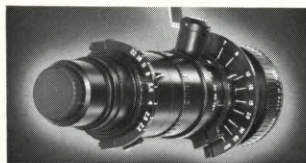
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Q What inks are used by professionals in tracing animation drawings onto acetate cels? Are they available as standard art material? Also, what type of pens are used for this work?

A Every worker has his favorite, but currently popular inks are Artone acetate black ink, Pelican ink and Higgins India general drawing ink. Any of these may be "doped" with the addition of gum arabic and glycerine to thicken the ink, so that it is suitable for working on acetate. Any ink used should be fairly fresh; it tends to get watery with age. The most dependable pens for inking purposes are Gillot No. 290, and Hunt No. 100. All of the above materials can generally be found in artists' supply houses.

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

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

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

Q Can I make a 16mm film in Cinemascope? Also explain what macro lenses are.

A Photo supply houses sell an anamorphic lens attachment, which, when placed before your regular lenses, produces the squeezed, wide-angle effect such as used in Cinemascope and Panavision. Macro lenses are those which can be focused to extremely close distances.

Q When shooting special effects of the displacement type in stop-motion, how are the figures supported between exposures as an action cycle in being filmed, particularly when they are

in the air, as during a jump?

A When solid figures are animated, they are usually fastened to the stage or floor of the miniature set in such a way that it is imperceptible to the camera as the figures are moved in the cycle of action. When such figures appear suspended in air, as in a jump, they are actually suspended by invisible wire, or by supports made of glass or lucite.

Q I wish to hand paint designs on clear 35mm film. How do I obtain clear film with only the black frame lines showing?

A Use positive film, such as is used for making b&w prints, as your negative and photograph a clear white card or sky. Have a b&w print made from this high-contrast negative on a continuous printer. The result will be clear film with black frame lines.

Q I am planning a 35mm b&w film with live-action background with a ghost effect superimposed over all. What is the best black material against which to shoot the ghost image, so that I will get the minimum of exposure? The whole optical job is to be done on an animation stand.

A Black velvet is generally considered the best material for backgrounds for ghost effects. Other suitable materials are velveteen, velour, sprayed black flock, etc. If the subject to be photographed against the black material can be up very light in values and color, an exposure 1/2 to 1 stop under normal will produce very little if any background density.

Q I have a Bolex H-16 cine camera. What is the angle of the shutter opening and what exposure does it give?

A This information is probably available in your camera instruction manual. The Bolex camera shutter opening is 190 degrees. The exposure rate, of course, depends upon the camera speed at which you shoot. At 16 frames per second the exposure per frame is 1/30 second; at 24 fps it is 1/46 second.

SECOND ANNUAL AMERICAN FILM INSTITUTE'S GUIDE TO COLLEGE FILM COURSES ISSUED

Four years ago, the only movies being seen and discussed at Middlebury College in Vermont were those brought to the campus by the student film society. Today, students are taking credit courses in film criticism, basic filmmaking and the American western.

The pattern of development at Middlebury is typical of many small liberal arts colleges in America where, according to the new edition of *The American Film Institute's Guide to College Film Courses*, the most noticeable growth in film education has occurred in recent years.

This edition of *AFI's Guide*, covering 1970-71, documents the state of film study, its growth and trends in the changing scene on the American college campus. Middlebury is one of more than 300 colleges and universities listed in the 160-page soft-bound edition, just published for the Institute by the American Library Association.

The Institute's Education Department survey for the Guide reveals:

- the budget for film programs has increased on an average of 301% in the past five years in all schools surveyed. This increase is an indication of the growing commitment to film and of the number of new programs that have come into existence since the mid-sixties.
- at the 301 schools surveyed, 1,679 film courses are being offered during the 1970-71 academic year; 1,026 at the undergraduate level, 346 on the graduate level, and 307 open to both graduate and undergraduate students.
- 68 schools now offer a major in film. 3,015 students are majoring in film at the undergraduate level, 1,216 at the graduate level.
- 869 faculty members teach film at the 301 schools; 304 of these teach film full-time.

Each of the 301 schools has provided a brief paragraph summarizing the philosophy, priorities and aims of the school's film program, and a list of all film courses offered. *AFI's Guide* contains further details for the 68 schools where students can major in film, including degrees granted, distinctive programs available to film students, names and positions of all full and part-time faculty, number of undergraduate and graduate film majors enrolled, facilities and equipment holdings, and film scholarships.

Special features of this year's edition

Continued on Page 716



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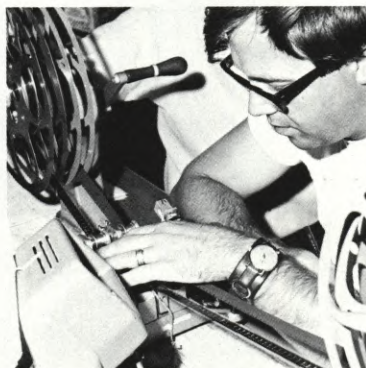
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FILMING "THE GOLDSEEKERS"

Continued from Page 679

behind the screen. We boosted the Kelvin to 3300° to compensate for the warm tone of the translucent shells. The result looked honest enough to work for us and save some valuable production time.

Another sequence in the film called for an airplane interior. With some more fine cooperation, this time from Philippine Air Lines, we secured a plane for the job, but it was available to us only at midnight. Needless to say, our scene again called for day, in fact it was to intercut with day exteriors of the plane taxiing and taking off. One Colortran light beamed through each port window gave us a sunlight key, balanced by cabin light fill, and no one has yet guessed the true time of day the scene was shot.

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Rare was the occasion when we didn't have at least one spun glass diffuser in each head to smooth out the light pattern and soften the effect. Balancing was principally done by adding spun and screen diffusion in order to drop the intensity to the desired level. The more layers of spun, of course, the greater the incidence of burning, so great attention had to be paid to the condition of the diffusion. A burnt spun can drop the Kelvin in a rather furtive way.

One of my fond memories of working in the Philippines will be of the moment before each take, when my order to boost the lights to the desired Kelvin was echoed in the Tagalog vernacular cry: "Boos-boos!". Nor will I ever forget the almost ecstatic happiness and relief of the crew when I learned to say, after a difficult or arduous shot: "Gustoco!". It means, roughly, "I liked it."—and so I did, shooting in the Philippines. ■



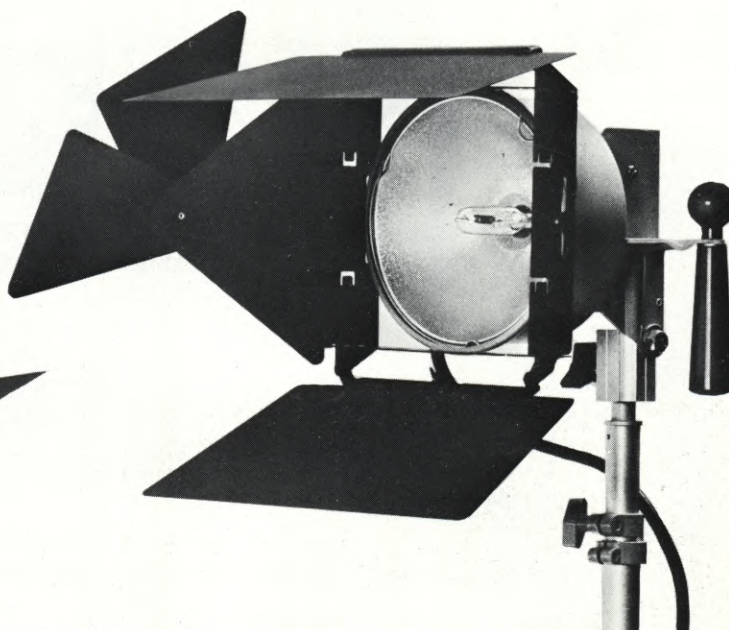
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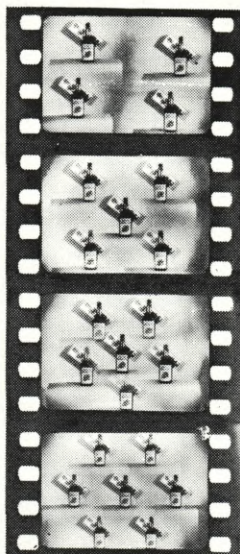
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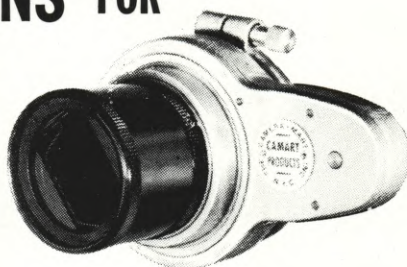
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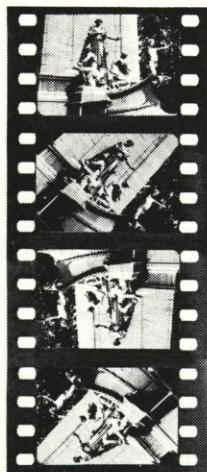
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"WILD ROVERS"

Continued from Page 667

The next morning, crack of dawn, it's everybody out and up to the location, which is about a forty-five-minute drive from the hotel in an area called Patagonia (I'd always thought that was at the tip of South America).

I ride out with Benoit and Willoughby through beautiful rolling countryside. We turn in at the guarded gate of the Sharp Ranch, which is the setting for the spread which Karl Malden supposedly owns in the picture. The large ranch house, which is authentic to the period of the picture, is an imposing example of "Western American Gothic" architecture. It has wide verandahs all the way around the structure and a cistern underneath which, in former days, assured a continuing water supply when the place was buttoned up as a self-contained fortress to withstand attacks by Apache Indians.

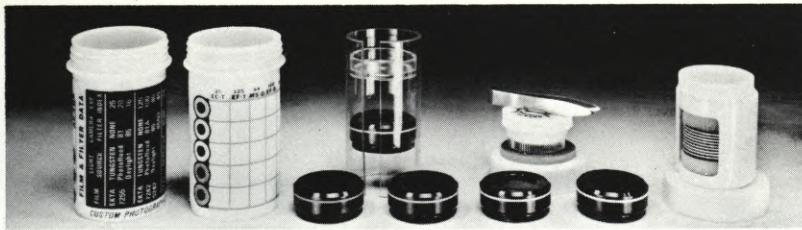
Just now the company is shooting round-up scenes on the adjacent rangeland, and it's there that we find the cast and crew huddled around the commissary truck, scarfing down coffee and fried egg sandwiches. The first unit is setting up to get scenes against the background of a huge herd of cattle, but just over the rise the second unit, with Frank Stanley as Director of Photography, is already hard at work shooting montage scenes.

I walk around saying hello to the crew members I happen to know and then Ryan O'Neal, whom I've never met, walks up to me, sticks out his hand and says: "My name is Ryan. What's yours?"

I find such modesty quite disarming. After all, he's just received a Best Actor Oscar nomination for his role in "LOVE STORY", is the current idol of both the teenie-bopper and Geritol sets—and he still thinks it necessary to tell me what his name is. I can't quite believe he's for real. But it turns out that he *is*. In days to come, during the long rap sessions we have between camera set-ups, I will find him to be refreshingly unspoiled by success, completely candid about himself, hilariously funny as a storyteller and a thoroughgoing "pro" on the set.

Off at a slight distance—not exactly aloof or withdrawn, but standing in his own little pool of privacy—is William Holden, the "Old Tiger" of this film. It will be a couple of weeks before he talks to me, but then I will discover him to be a man of keen intelligence, deep sensitivity and the same internal toughness that comes through so strongly on film.

Continued on Page 702



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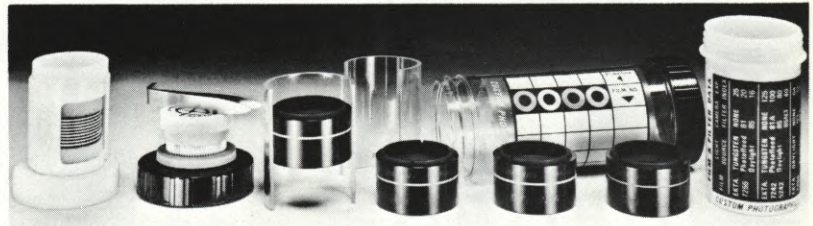
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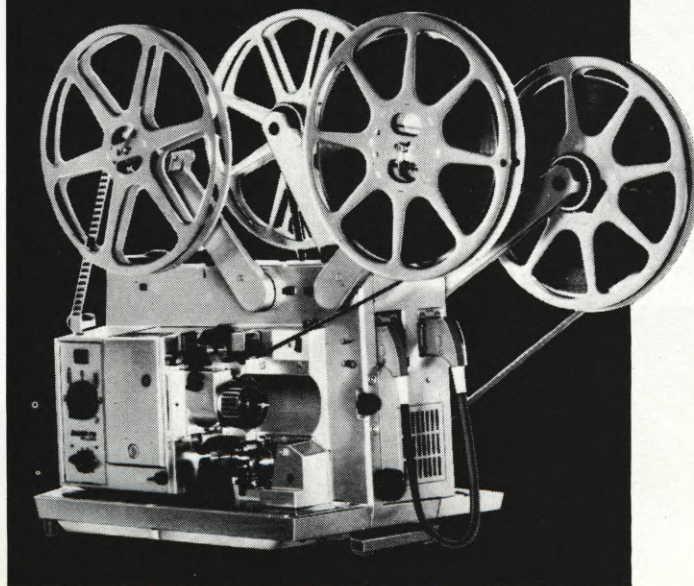
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"WILD ROVERS"

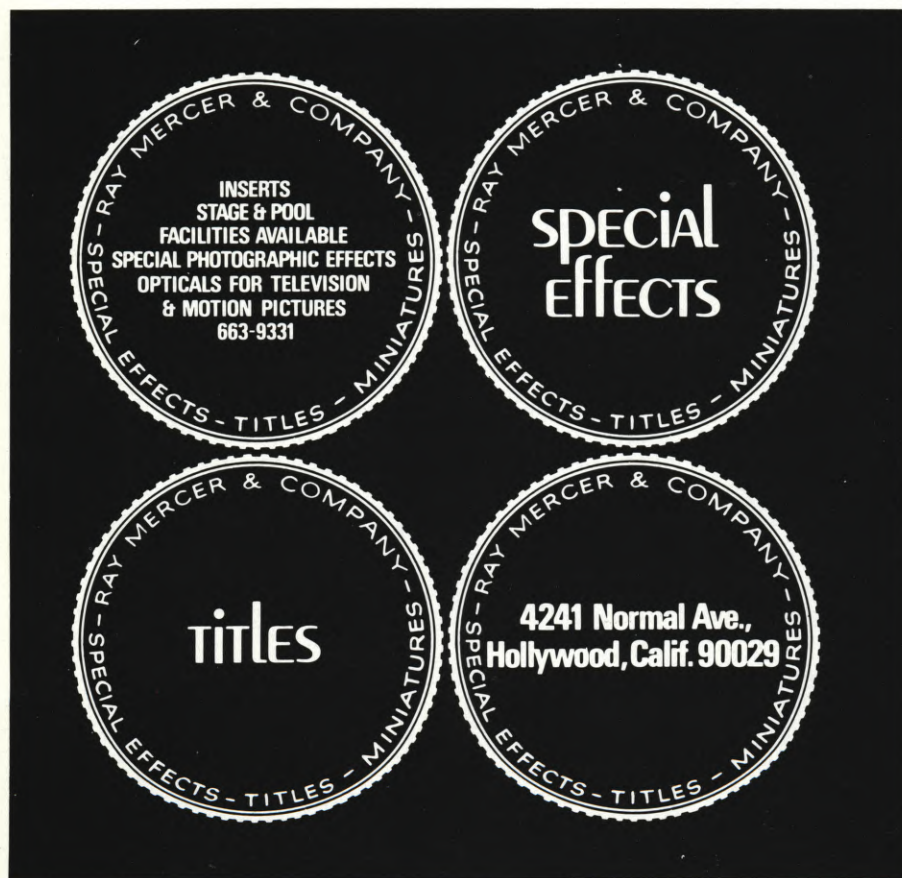
Continued from Page 700

Just now he is observing O'Neal's puppy-doggish exuberance with what seems like an expression of bewildered dismay. Later, as they work together, there will develop between them a very close friendship, the same special relationship off-screen that is the keynote of "WILD ROVERS".

In the front end of the camera van, amid a welter of video gear, I find two old friends—Jim Songer and his assistant, Don Howard. Jim looks and talks like an honest-to-God cowboy, but he's actually the brilliant electronics engineer who designed and built the Video West Instant Replay System. This method of recording and immediately playing back a clear video version of a scene just photographed by the film camera was evaluated in the February, 1970 issue of *AMERICAN CINEMATOGRAPHER*. But Jim tells me that the present version, being used on "WILD ROVERS", is vastly superior to the former model, and that even more spectacular improvements are on the way. (See Page 668)

Later in the day I have a chance to talk to Phil Lathrop about the Video West system and his use of it on this picture.

"I've used other systems of instant replay, but Video West is absolutely the most successful," he tells me. "The other systems I've used have been simply a video camera mounted on the side of the film camera and they're far from accurate, even if you've got somebody following parallax for you. But this new model of the Video West system is mounted on the door of the Panavision camera and looks directly through the taking lens, so that you see *exactly* what went onto the film—and a very sharp, clear picture of it, too. There's nothing that compares with it. It's already saved us a lot of time and money on this picture, even though we've only been shooting a short time. It's saved us lots of times from having to do a scene over—and it's also helped us spot errors that got by everybody. It's especially valuable in something like a fight sequence, where everything happens so fast that you don't really know whether you got it or not. Also, there are times when the set-up is so tricky that the director can't even get into a position where he can see the action. For example, the other day we were doing a long trucking shot with the camera on the crane and there was no way that Blake could get a clear view of the action. We had the Video West truck rolling ahead



of us, attached by cable—so he simply rode inside the truck and watched the scene on the monitor as it was photographed. Ordinarily, he wouldn't have been able to see what we got until a couple of days later, and if it hadn't been good, we would have had to set it up and shoot it all over again. I think it's a fantastic tool for the director."

But what about the cameraman?—I ask him. In what ways can it be helpful to the Director of Photography?

"Well, I don't need it to check lighting, because I know exactly what I'm going to get back on the screen—and it isn't designed for that purpose anyway," he tells me. "But it's a great help in letting me know whether the operator is executing the scene the way it should be executed, in terms of framing and composition. This is no criticism of the operator—it's just that maybe I haven't gotten across to him exactly what I wanted, or he hasn't understood it in quite the same way. With this system, I can watch a rehearsal on the monitor and then tell him to frame it a little differently or pan with a certain character or whatever. In that way, it's a great help to me. It can be helpful to the operator, too, because now, working with reflex cameras, something quite often happens so fast that he's not sure whether he's seen it or not. He may think he got a light in the picture or a kick or something like that, but he's not certain. With the old-type finders, he could see around the frame or above it and avoid something he didn't want before it got into the frame, but now he doesn't see it until it's already in there—if he sees it. The Video West system gives him a way of checking all that out. It's an invaluable tool for the script girl, too, because she doesn't have to rely on memory or her notes. If she's in doubt about some detail in a previously shot scene, she can simply play the tape and get a perfect match."

The day is spent in shooting scenes of the round-up, the workaday world of the cowboy. Then, it's back to the Rio Rico where, in the bowels of the hotel, Editor John Burnett and his bushy-tailed assistant, Freeman Davies, Jr., are working away like two moles in a hole. They have rigged a very efficient cutting room in the basement and are busily breaking down dailies and making rough assemblies of sequences as they are shot.

Like everyone else engaged in the project, John seems very high on this picture—genuinely enthusiastic about the footage that's being shot and the way it is going together.

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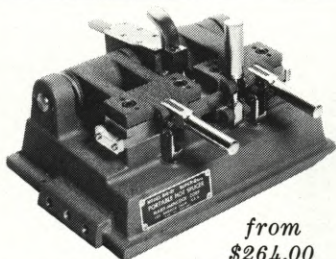
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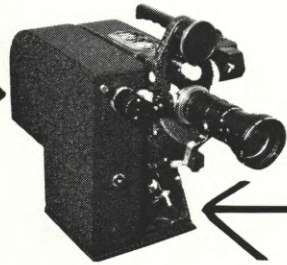
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with the company," he tells me. "If he's working back at the studio, he's really out of touch with the picture, no matter how often he and the director may talk on the telephone. Being right here on the spot, there's very direct communication between Blake and myself. As the dailies come back from the lab we have a chance to look at them together and make sure we're on the same wavelength. Then I make a rough assembly of each sequence as it's shot and show it to him. He can tell immediately whether action will match or whether he needs additional coverage on a certain sequence. He can then shoot those scenes with no sweat while we're still in the area, without having to come back later for costly retakes. It's a great way to work."

The next day dawns clear and bright—with accent on the *bright*. The sunlight is so brilliant that the contrast is draped over both ends of the latitude curve of the film. Obviously, something will have to be done to cut down the contrast, but because of the wide-ranging character of the action, it's not a problem that can be solved by using arcs or pouring in reflected light or anything of the sort. The pola-screen is out, because the sky is already an incredibly deep blue.

During the lunch break I have a chance to talk with Phil Lathrop about this particular challenge and ask how he's coping with it.

"I'm using double fog filters," he tells me, "but they're really mis-named, because they don't throw you out of focus the way conventional fog filters do. I don't use that kind. These simply soften your contrast a bit. It takes quite a while to get used to them, but I've been using them for years. You have to vary them according to your stop—the heavier the stop, the heavier the filter. I use them at night all the time, because they give you a soft black, a kind of grayish black, instead of those harsh blacks where you see nothing. It's awfully hard to play down the beauty of this country in order to lend the right mood to a sad sequence. I'd feel very fortunate if I could get some very, very heavy dark clouds into one of the death scenes. I think it would be great—but, of course, you can't wait around for things like that."

I have to leave the company at this point because London is calling, but before taking off I touch base with Ken Wales to find out how things are going thus far.

"Very well indeed," he tells me. "Inevitably, at the start of any picture,

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It takes a few days for everything to mesh together and that's when the producer has to become a practicing psychologist. Basically, you have a chain of people—all distinct individuals—who must, in some way, be persuaded, urged, reminded of their professional responsibilities and blended and molded together into a working team. It's the director, of course, who is the key person in this respect. It's his demeanor, his attitude, his working charisma, the atmosphere he creates that sets the tone of the entire operation. But the producer can do a lot toward alleviating basic insecurities by seeing that things don't go wrong, by arranging suitable accommodations and by doing everything he can to keep things running smoothly. As with every type of organization, there will inevitably be unforeseen crises and emergencies—and that's when keeping a cool head and having patience become very important factors."

MGM—THE SOUND STAGE

It's holiday time. The schedule for "WILD ROVERS" had been planned to permit cast and crew to be back in Hollywood at this season, so that they might frolic with their families, or whatever. Consequently, the company is now shooting interiors at MGM Studios.

A call from Ken Wales: "Hey, old friend, we're shooting the big fight sequence starting tomorrow. It sounds like your kind of thing. Why don't you come on out?"

It is my kind of thing. Ever since "THE QUIET MAN", I've had a fondness for big cinematic brawls and, having staged a few for my own pictures, I know how intricate they can get. I hie myself hence to MGM and a big reunion with the "WILD ROVERS" group. Bob Willoughby is on hand, also, and it's good to see him again.

The interior set is a wonderfully realistic replica of a typical Western bar—in this case, the Palace Saloon, social center of the unidentified cowtown portrayed in the film. Phil Lathrop has it very sparsely lighted, so that it looks just the way such a place really would look in that period—not exactly low-key, simply not very much light.

"My intention in lighting any interior is always to make it look as real as possible and if we were doing straight action in this set, we could make it look great," he tells me, "but when you've got a big fight going on, there are special problems involved. Let's say you've got it lighted just the way you want it to look. During the fight, one of the guys

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ends up where you never expected him to be—so you've got to light that area. By the time you've covered all the bases, the lighting isn't what it started out to be at all. I like to underlight certain areas, so that if there is light on a face I don't put any light on the wall, and vice versa. I generally don't light the wall anyway, but audience-wise, you've got to add a little more light than appears necessary, because the camera doesn't photograph what your eyes see."

A few minutes later I get to see what he means by having to light unforeseen areas of the set. Even though the fight has been carefully choreographed, with highly-experienced stunt-doubles substituting for the actors in the long shots, both the actors and the doubles end up all over the place. Living the part, Alan Carney, playing the role of the Palace bartender, puts a little too much moxie into the part where he's supposed to hit Ryan O'Neal over the head with a club, and that worthy goes down for the count.

I have to leave before they've got it all together, but it looks like it's going to be one helluva brawl.

MGM—THE BACKLOT

There are several backlots at MGM Studios, but the one where the Western town set is located is Lot #3. As I walk onto this lot to observe the shooting of night sequences for "WILD ROVERS", I feel a twinge of nostalgia. It was on this very lot that I (a bright-eyed, gung-ho teenager at the time) received my first professional training in cinematography, under the tutelage of such legendary cameramen as John Arnold, ASC, Karl Freund, ASC, and Joseph Ruttenberg, ASC.

Lot #3 is the home of many exotic, far-off movie places: the Tarzan rocks where Johnny Weissmuller used to hang out (on a vine), the fabulous early-Americana street where Judy Garland lived in "MEET ME IN ST. LOUIS", the Mississippi river dock where the *Cotton Blossom* tied up in "SHOW BOAT", the English village with its graceful bridge from "MRS. MINIVER", the waterfront docks from "GREEN DOLPHIN STREET" (and the remake of "MUTINY ON THE BOUNTY"). One of the main areas is the Western town, where tonight's shooting for "WILD ROVERS" is to take place. It makes me sad to realize that this is the last film that will ever be shot on this set (one of the largest of its kind in existence), because Lot #3 has been sold to a real estate developer and very soon all of its fabulous sets will be razed to make

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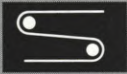
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It's a chill night and the cast and crew members (except those busily working on the next set-up) stand shivering around a mobile commissary cart supplied with hot coffee, soup and chili—take your choice.

The entire main street of the Western town has been lighted for shooting. The three "bright spots"—if such they can be called, are the Palace Saloon, the Sheriff's office (with jail in back) and Maybell's cathouse, made to look almost glamorous by virtue of the ruby-red light glowing on its facade. Aside from that, there is very little light along the street—only a few arcs to high-light the sides of selected buildings for depth. It is the most sparsely lighted night exterior set of such size I've ever seen—but it certainly looks real.

When I remark on that fact to Blake Edwards, he says: "That's a credit to Phil. It's practically black; you can barely see the buildings—and that's certainly not normal photography for films. It will create a certain amount of dissension and he will probably come in for considerable criticism in certain quarters. Somebody's bound to say: 'My God—they'll never be able to see it in a drive-in!' But that's the way a Western street would look at night and I think it's tremendously effective."

This back-up on the part of the director for the artistic-technical decision of the cinematographer is only one manifestation of the uniquely close working relationship which exists between them. Watching Blake and Phil shoot sequence after sequence together during my observation of this project, I have been amazed at how little direct *verbal* communication between them seems necessary. When it comes to a new set-up, Phil goes about his business, working quietly with his gaffer and assistants, getting the job done with dispatch. Off on the sidelines, Blake may be working with the actors or, more often than not, simply sitting quietly in that pool of creative solitude that is essential to most directors. When the camera is in place and the lights have been set, he will usually step up and take a look through the viewfinder. Once in a while—only very occasionally—he will suggest a slight change, but most of the time he will simply nod affirmatively and get on with his rehearsal. Though few words pass between the director and cinematographer, it is obvious that they have a free flow of communication going on precisely the same wave-length—except that they

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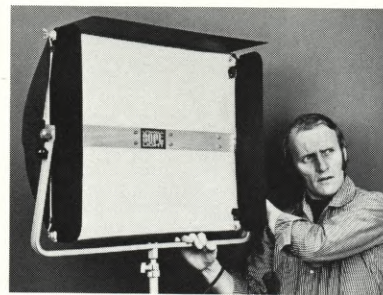
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must be doing it by means of ESP or some such thing.

It's not really so surprising, I guess, when you think of how many pictures they've done together—the "PETER GUNN" TV series and the "GUNN" feature, "EXPERIMENT IN TERROR", "THE PERFECT FURLOUGH", "PINK PANTHER", "DAYS OF WINE AND ROSES" and "WHAT DID YOU DO IN THE WAR, DADDY?"—to name a partial list. One might logically expect a kind of symbiotic rapport to develop between them after all these years.

"After all these years—that's the clue to go by with Phil and me," comments Blake, when we get onto the subject of the director-cinematographer relationship in a later discussion. "We've worked together for so long and done so many different kinds of pictures that we really understand each other—and we work together by shorthand, almost. He can tell, by now, just what I might expect in terms of lenses, in the use of dollies, cranes, etc.—particularly after we've had our initial discussions and I've given him my concept of the particular film. It doesn't take much for him to lock in on my requirements because he knows me so well. It's a very comfortable relationship, not only because he's an enormously creative cameraman, but because the hassle is out of it. There's no one person trying to prove something at the expense of the other. We're both just trying to do the best we can. I think that he has an appreciation of my camera knowledge, my ability to pick set-ups, my eye for a particular shot—and I feel the same way about him. So, if there's an exchange of viewpoints, it always ends up well. I've never had an argument with Phil—ever. We go back to when he was the operator for Russ Metty on one of my early films. Since then, he's photographed well over half of my pictures—and we've done some pretty good ones together."

At a later date, when I'm having dinner with Phil Lathrop and his lovely wife, the subject comes up again. Unaware of what Blake has said about him, Phil is equally complimentary. The outsider might assume that this is some sort of mutual-admiration society, but I know Phil to be a candidly honest man. He never puts anybody down, but he's hardly the type to extend gratuitous compliments—so I must believe him when he says: "Blake's a delight to work with. He approaches making pictures as fun, but even though he's done mostly comedies in the past few years, I think he's a great dramatic director. That certainly came through in 'DAYS OF WINE AND ROSES'. He also has a



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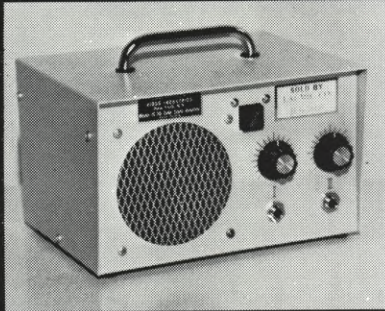
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fine feeling for suspense—as in pictures like 'EXPERIMENT IN TERROR'—and he knows exactly how far to carry it. Then, of course, he has a terrific sense of comedy timing. We work together well because we understand each other. We're old friends, really. I respect him and he respects me and we're very honest with each other. Somebody told me when I was first starting out that there's only two people who really make the picture what it is—the cameraman and the director—and I've never forgotten that. If you don't have rapport between these two guys, you don't have a picture."

Night shooting on Lot #3 involves both the first and second units. While the first team is on the main street of the town filming scenes outside the Sheriff's office and Maybell's "house of joy", the second unit is shooting other scenes in a grove of trees just behind the Western town set. I trek in that direction to find Frank Stanley with his camera down on the ground, trained on a large puma.

In the picture, Holden's horse is killed when this powerful cat leaps out of the night and tears at its throat. The puma they have cast for this role is a magnificent tawny beast with great luminous eyes. Actually, there are two of them (one for back-up) and while the crew is working with the one, the other slips his leash and is later found nonchalantly exploring the sets—not looking for trouble, just sight-seeing.

The problem with the puma in front of the camera is that he is a veritable pussycat, much more inclined to roll over and be playful than to come on ferocious, as called for in the script. A slightly distraught trainer keeps waving a twig in his face in an effort to make him snarl and act mean.

Both units keep shooting until the wee small hours of the morning, by which time it has grown pretty awful cold for thin-blooded Californians. But there's no griping, no complaining—and quite a lot of good humor, all things considered. It's that kind of a company.

FLAGSTAFF, ARIZONA

When the call comes from Ken Wales this time, he's even more exuberant than usual. "There's snow up here, old friend," he exults. "We're going to shoot the horse-breaking sequence in the snow! You've got to come up."

It doesn't take much to get me to go where there's snow—especially when I find out that they'll be shooting not far from the Snowbowl ski resort outside of Flagstaff.



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When I get there I find that the company's just returned from filming in the red rock canyons of Sedona and some of the more "be prepared" types are breaking out long-johns in preparation for a frigid frolic in the snowfield. Cast and crew members welcome me back like a long-lost member of the family and, by now, that's exactly how I feel.

There's something that puzzles me: in the script version I had read, the wild mustangs (one of which Holden "breaks" for a mount) are discovered, not in a snowfield, but drinking at a water hole in country lush with "yellow flowers almost head-high and blankets of larkspur and nootka rose." Obviously, there's been some changes made.

"The horse-breaking sequence was scheduled to be shot in Sedona, ideally in a box canyon surrounded by red rocks," Ken explains, "but we just couldn't seem to find the kind of area that would work for us. We knew that there were pictorial areas much higher up on the rim, but they were covered with several feet of snow. Somebody said: 'Why don't we shoot it in the snow?' and Blake said: 'Well, why not? I can't recall having seen a horse-breaking sequence filmed in the snow.' So, he and Phil scouted the rim in a helicopter and picked out a plateau surrounded by pine trees that seemed large enough for the action. They weren't all that happy with it, but it was the best place they'd seen. The main drawback was that, in order to get up to the top, it would be necessary to climb a tortuous road or fly all of the personnel and equipment in by helicopter—a real chore. We decided it would be better to try to rent such things as snow-cats and motorized toboggans and skis that would enable us to move the actors and equipment into the area without tracking up the virgin snow. The Editor, John Burnett, and I decided to drive down to the Snowbowl ski area outside of Flagstaff, where they keep the snow-cats and other such transportation. As we got into that locale, we found ourselves driving through the most beautiful groves of aspen trees you can imagine. The sun was setting and as it came through those aspens it turned them gold. As we neared the top, the vista opened up to reveal huge snowfields surrounded by aspens, with mountains towering in the background. It was magnificent! I said to John, 'What are we doing down there in a meadow ringed only with pine trees and with no mountains beyond? Why don't we shoot it here?' Even as I said it, I shuddered to think how our pro-

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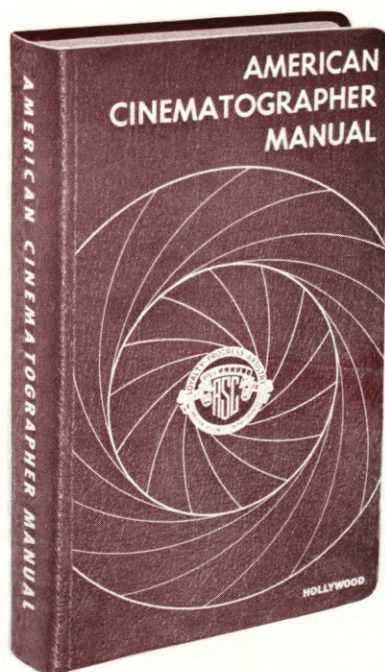
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duction manager and location department would react. The sequence had been scheduled for Sedona, and here I was proposing a whole new thing. Anyway, we took some Polaroid shots of the locale and showed them to Blake. He flew up in the helicopter the next day, took one look at the place, and said, 'This is it!' And that's how we happen to be shooting the horse-breaking sequence in the snow."

The 40-minute drive from Flagstaff to the location next morning confirms what Ken has told me. It is incredibly beautiful country. The snowfield is so vast that when one area has become trampled by the horses, it will only be necessary to move the cameras to a fresh adjacent area in order to continue filming of the sequence.

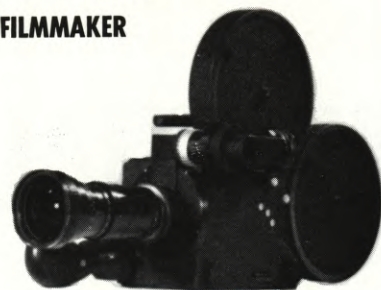
Riding up with us in the car is a cutie-pie girl feature writer from New York who has come to do a story on Ryan O'Neal for *Vogue*. For *Vogue*? I find this hard to fathom—especially since he wears only one costume change throughout the entire picture. Also along is a droll Frenchman all toggled out in frontier clothes. He's an Associate Editor on *Paris Match* and has come all those thousands of miles from the "City of Light" just to write about *les cowboys* in front of the camera.

MGM'S battalion of huge trucks is parked some distance from the action. In order to get where the cameras are set up, it's necessary to climb aboard a snow-cat piloted by a *kamikaze* type who doesn't always know how to stop. Someone could make a fortune selling flight insurance!

When we arrive, Phil and his crew have four cameras set up to shoot the bucking horse scenes. He explains to me that two will be running at normal sound speed and the other two will be overcranked five times normal.

"Blake is hoping to do some very interesting things with this sequence in relation to the music," he tells me, "so he wants to shoot it both ways—at 24 frames and also at 120 frames. I think it can be very effective and it'll keep the action from looking like something you can see at any rodeo. We're using multiple cameras because this kind of action is a bit hard to match, but the question is where to position them so that you get the best coverage without duplicating your angles. For starters, I've decided to cross my cameras. That is, I've got each pair of cameras, depending on frame-rate, set up at cross-angles (not *reverse-angles*), with lenses of the same focal-length on both cameras. This will give the editor a matched pair of

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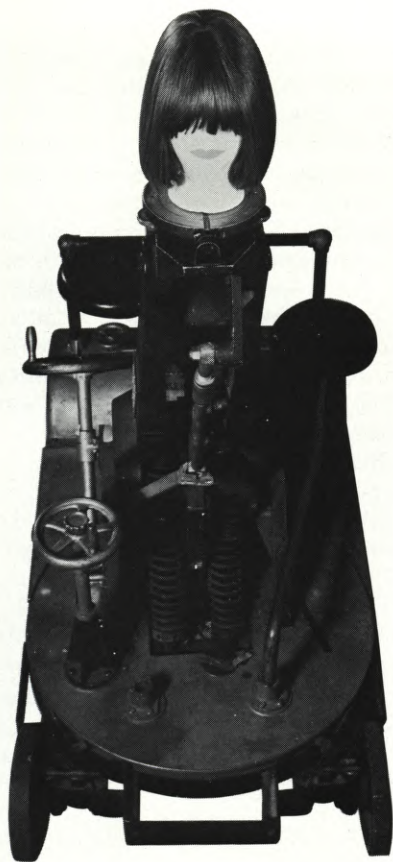
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angles that he can intercut freely with a perfect action match, if he wants to do it that way. Later we'll get a variety of other camera angles using different focal-lengths."

It's a bright, sunny day and there's a considerable range of contrast between the sunlit snow and the deep blue sky. I ask Phil if he intends to use his fog filters in order to cut down the contrast.

"No, I'm not using them up here," he says. "They have a tendency, on white subject matter, to flare—especially if you over-expose a bit, as you naturally would with snow. If you're photographing a guy wearing a white shirt, there will be a little halo around it. A fog filter could cause a halo to appear along the top of the snow, too, so we won't chance it."

Floyd Baile, Bill Holden's stunt-double, will actually ride the bucking mustang in the sequence, with closer shots of Holden intercut. Like most real cowboys I've known, Baile is a quiet, gentle man—but tough as hell underneath. He bears a very close resemblance to Holden and is superbly understated, except when he's on a horse.

A regulation bucking chute, of the type used in rodeos, is set up off-camera. There are also several black horses that look identical, so that a fresh horse can be put in to replace one that's tired. There doesn't seem to be any back-up for the stunt-rider, however. I guess the theory is that it's possible to wear out the horse, but not the man.

After master long shots of the horse-breaking action are in the can, the cameras are shifted around to get other angles. A sizable trench is dug in the snow so that two cameras can be set with lenses at ground level for low-angle shots. A kind of wooden bunker is built around them and white material, with holes for the lenses, is draped in front of the cameras as camouflage, in order not to "spook" the horses.

While this is going on, the girl feature writer from *Vogue* and the droll editor from *Paris Match*, having drained Ryan O'Neal of all possible quotes, are busily interviewing Bill Holden. He tells them that his next picture, after "ROVERS", will also be a Western.

Counting "THE WILD BUNCH", that will make three Westerns in a row, observes the Frenchman. Why so many Westerns?

"Well," says Holden, "at this stage of the game there aren't that many other types of roles I can play. After all, I can't go on forever playing parts where I drink the martini and kiss the girl. I'll

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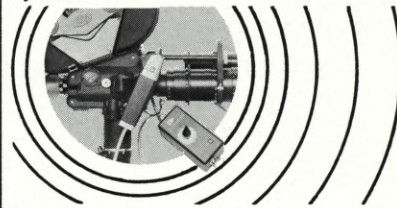
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leave those to Ryan O'Neal."

The *Vogue* cutie gives him a look that clearly indicates she'll be glad to drink a martini with him just any time.

It takes almost three days to shoot the entire sequence in which the wild horses are first spotted and one is cut out from the herd to be broken to the saddle. Then the company packs everything up for the move to the next major location, Monument Valley. It's almost like watching the circus leave town, as tons of equipment and the essential animals are loaded into huge semi-trailers for the four-hour drive.

MONUMENT VALLEY

We pull into the little town of Kayenta, Arizona, which is on the Navajo Indian reservation, and settle into the hotel. Though the town proclaims itself the "Gateway to Monument Valley" and is surrounded by a nice scattering of mountains, I see no sign of the distinc-

tive formations that are unique to Monument Valley.

The next morning, after a forty-five-minute drive, we cross the state line into Utah and turn off the highway onto a side road. This eventually leads to a Tourist Information Center which, as it turns out, is high up on a plateau.

Down below, stretching into magnificent infinity, is Monument Valley. As many times as I have seen it in photographs and John Ford Westerns, I am not prepared for the reality of this starkly beautiful scene.

Carved out by the primeval inland sea that raged here eons ago are the majestic buttes that set Monument Valley apart from all other geological formations of the world. Rising hundreds of feet from the valley floor, the red rock monoliths soar in a silent grandeur that is uniquely their own. Perhaps it's because I know this is sacred Navajo land that it seems to pulsate with a mysterious "spirit-world" aura. It is a

place out of time, and it almost literally takes my breath away.

The sequence which is to be filmed here is the final one in the picture—that in which the baddies catch up with Holden and do him in. It would be difficult to imagine a more awesomely beautiful place in which to draw one's last breath.

The crew is busily setting up for the first shot when Blake arrives with his wife, Julie Andrews, who has just flown in to join the company on location. Everyone greets her, not as an internationally famous movie star, but simply as Blake's wife—which is obviously just the way she wants it.

One hard-boiled grip, however, is obviously smitten. "Look at her," he says, "—a bit of English porcelain on the American desert. Isn't she *something!*"

The first set-up is a long trucking shot to follow Holden as he rides at a normal pace across the desert—before he discovers that the two antagonists are zeroing in on him. The camera is mounted on the Chapman boom, which is to roll along a dirt road rutted with holes. Ordinarily this would be cause for much concern and hundreds of feet of dolly track, but Phil Lathrop simply calls for a Dyalens to be mounted on the camera instead.

"This is the first time I've used the Dyalens extensively," he tells me, "but it certainly has saved us a tremendous amount of time and expense on this picture. I still can't believe some of the terrain we've been over without laying any track—not only terrible old country roads, but open prairie where there were no roads at all. Some of those crane shots ran for 500 feet, which would ordinarily have forced the director to break up the scene into several shots. With the Dyalens we've been able to shoot a long trucking shot over rough ground with, let's say, a three-inch lens, then change to a six-inch lens and go right back over the same terrain again. It's really fantastic. I'm using the Dyalens that belongs to Video West, which they've modified so that it doesn't over-ride when you hit a really terrific bump."

The shot goes off without a hitch and is in the can after three takes. The operator had complained that it looked mighty jerky to him, jouncing along, as he was, while trying to keep his eye to the reflex viewfinder. However, a replay of the video tape confirms the fact that, while no completely bumpless dolly shot, it was very smooth indeed.

The time at Monument Valley is spent in getting the Bill Holden character killed off in proper style. This is one

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of the few times when the helicopter is used, because it's the only way to get a close "follow" shot of him being chased hell-bent-for-leather across the desert. The helicopter pilot and aerial cameraman Don Morgan keep him beautifully centered in the frame all the way.

Commenting on Holden's acting—subtle, sure and understated—Julie Andrews says, "The more he doesn't, the more he does." It's the tribute of one real pro to another.

It strikes me that the same kind of understatement applies to Blake Edwards as a director. He's the most unobtrusive person on the set, sitting quietly in his chair or standing near the camera, trusting each member of his team to do his thing and do it well. He's not even a little bit concerned about his "image". His ego is on the screen and not on the set. If the natural tensions of production start to draw a bit tight, he lightens things up with a joke. Only once during all of the shooting I've watched on this picture—and there's been quite a group of it—have I seen him even momentarily lose his cool. That was a perfectly justified (and necessary) moment of exasperation that occurred after a trio of technicians, in a veritable "NIGHT AT THE OPERA" comedy of errors, had repeatedly goofed up a certain effect. Even so, the one-line explosion was over almost before it started, and it served to clear the air. His style is understated, but it's obvious that he's done his homework, and there's no doubt that he's in full control of everything that is happening.

Bill Holden "dies" on the floor of Monument Valley, and it's just the way Phil Lathrop had said it would be—crisp, stark and violent. The company will now move on to Moab, Utah, where Ryan O'Neal is scheduled to die "softly and gently". However, since I'm due in Munich, which is in the opposite direction, Ryan will have to die without me.

I say goodbye to the crew, knowing this is the last time I will see them all together as a working team. In the crucible of production they have, indeed, become welded into a "family", and I feel like part of it—if only the black sheep.

POST-PRODUCTION

The frenetic process of getting it all together begins. The bits and pieces are fitted, coaxed, hammered into juxtaposition to form the mosaic that will be the finished picture.

Ken Wales keeps me posted from his position on the firing line at the studio, alerting me to come on out as each new

Continued on Page 720

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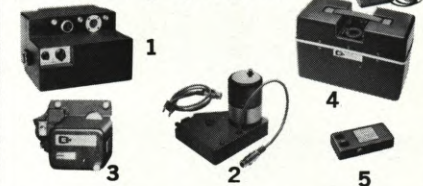
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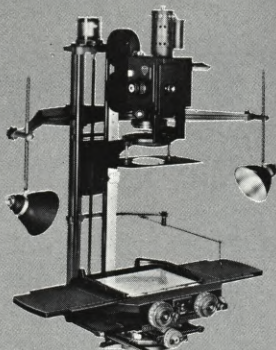
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AFI FILM GUIDE

Continued from Page 697

are a separate breakdown of schools by degrees granted, and a section listing schools which offer film study courses for teachers. Of particular interest to distributors and programmers will be the designation of the 70 schools which have 35mm screening facilities on campus.

AFI's Guide to College Film Courses, 1970-1971 may be obtained for \$2.50 from the American Library Association, 50 East Huron Street, Chicago, Illinois 60611. (AFI Education Members receive the Guide as a membership service.)

For further information contact: Sali Ann Kriegsman (202) 347-9311. In New York contact: Howard Haines (212) 421-6720.

CAMERAMAN'S CHALLENGE

Continued from Page 686

3. Record with a 600mm lens, and also with a 25-to-250mm zoom, the last two sunsets of the year. This was on November 5th and 6th 1970. Missing these would leave no chance of recovery because the sun does not reappear for nearly three months thereafter.

In solving this problem I cannot claim to have discovered any new tricks. I can only describe what I found to be true in this one particular case. All of the problems of being in extreme cold are well known such as the danger of freezing lungs by excessive exertion, and the ever-present danger of frostbite, which can happen as fast as 15 seconds when skin is left exposed. There is, of course, the obvious problem for the cameraman, touching unpainted metal barehanded and freezing onto it. Several times I had to do a reload in the open at about -25°F. I quickly set the loop without gloves. The main camera parts I touched were painted so that there was less danger. I do remember that the sensation of touching metal in this moment was more like a feeling of burning rather than freezing.

Reloading should really be done inside a protected area, such as a vehicle, or where the temperature allows a reasonably comfortable working condition. Obviously the camera must remain cold enough so that condensation does not take place on the camera body, lens or film.

The 35mm Arriflex cameras we used had been winterized by a Canadian company and were excellent in perform-

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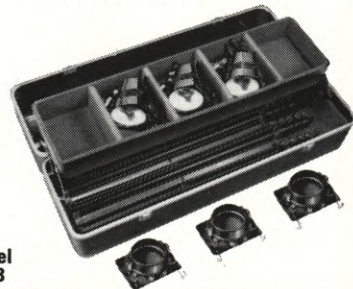
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ance. Even at -60°F the belt batteries, worn under a parka, were warm enough to power the constant speed motors.

In general, working slowly and methodically seemed to be the best way to solve problems. Fortunately we had no exposure problems, as can sometimes happen when film gets too cold. Luckily we did not develop any static marks due primarily to the fact that we usually loaded the film into magazines not too far in advance of their actual use. Once the film is removed from its can, its moisture content may decrease. The idea is to use the film before excessive moisture loss can leave the film susceptible to static marks. The thing to remember is that the Arctic in extreme cold is a very dry kind of atmosphere which can dehydrate both the cameraman and his film.

These difficulties make one all the more respectful of Robert Flaherty's accomplishment in recording Eskimo life in northern Canada. The classic film, "NANOOK OF THE NORTH", which he filmed before 1922, must have really been a hardship for him.

Moving inside to shoot was fine as long as the change was made in stages. We would first ride in the local mode of transport, a "Bombardier", which has rear tracking like a tank and a front wheel on one side and a ski on the other. Some warming would begin as we rode. All the buildings have inner doorways for insulation and in these the equipment could rise more toward room temperature. When the cameras and lenses finally came in, no condensation occurred.

The 600mm shot was difficult, due to wind that comes up just after dawn, but again with patience we got the shot. The zoom lens was adjustable in focal-length but too stiff for an actual zoom. The extraordinary thing about the last day of sun was that sunrise was at 11:34 AM and sunset was at 12:31 PM, just less than one hour. What we saw was only half a disc peeking up over the horizon, and it moved in that hour within a 90-degree field of view directly in front of us. To see a sunrise and sunset along the same horizon really stuns one's conventional concepts of what a day is supposed to be like.

The afterglow lasted for hours, leaving us in a kind of soft-light limbo which was beautiful for photography.

Eastman has published data on Arctic shooting. This is most helpful if you plan to work in sub-zero climates. They give information on handling of cameras, film and suggestions on protection for the cameraman. See the American Cinematographer Manual. ■

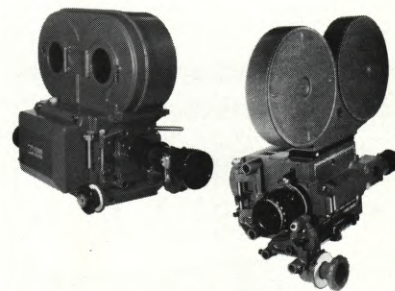
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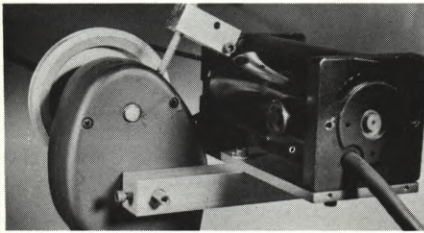
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Continued from Page 669

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The people at Panavision lent 100% cooperation to the project. It probably would have taken two or three more years to develop the system if we had tackled it on our own. But Panavision is the world leader in optical design, and with the efforts of their fine optical engineers applied to our electronic devices, we were able to come up with this vastly more efficient model of the Video West Replay System in a relatively short time. Panavision engineers designed the mounts and, in fact, the entire mechanical system, while Video West designed the electronics system.

So far, two Panavision camera doors have been adapted to the system and they can be fitted onto any of the existing Panavision cameras within five minutes by means of two simple lock nuts.

The first feature to be made entirely with the use of this new model system was "WILD ROVERS", directed by Blake Edwards and photographed by Phil Lathrop, ASC.

Even before shooting was completed on that picture, we developed another very advanced innovation which, I feel, can be of great significance to the modern film-maker. We came up with a *wireless* adaptation of the system that completely frees it from the cable umbilical cord that formerly tied the camera to the video recorder. Now the film camera can enjoy complete mobility, moving freely anywhere it has to shoot without worrying about cables. It can even shoot from an aircraft or helicopter, with the picture being picked up by a video recorder on the ground. The director will be able to instantly replay it and, for once, he'll know exactly what the aerial cameraman is getting—while he's still up there.

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as a mile away from the camera, depending upon the terrain, and still pick up a picture signal. Because our system transmits an FM signal—which is the same type used to microwave TV shows all the way across the country, there is no degradation of the image quality. It is not subject to the vagaries of weather and the only problem one might possibly have is when shooting within a few hundred feet of a TV or FM transmitter. Even so, we have devised special RF filters for that purpose that would hold the interference down to a minimal level where it would not be noticeable.

The new camera will run off of a 24-volt battery system, whereas the former model used 110-volt AC current drawn by cable from the video truck.

The new wireless model of the Video West system is being used for the first time by Phil Lathrop in photographing "PORTNOY'S COMPLAINT".

When we first tested the through-the-lens version of the video camera, we found that the resolution was so great (1500 lines) that it brought the texture of the ground glass into sharp focus. The solution to that was to develop a new type of ground glass with a much finer grain. We've done that and the result is not only a sharper image, but a higher degree of contrast and a light gain of two stops, which will improve reflex viewing for the operator.

One of the most exciting new possibilities for the Video West Instant Replay System was made possible by the introduction of the new Ampex Insta-video portable videotape recorder/replay unit, which weighs only 13 pounds, without batteries. It is the smallest cartridge record/playback unit ever introduced, measuring 11" wide x 13" deep x 4-1/2". It is battery-operated and compact enough to be carried on a shoulder strap, if desired.

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At a time when crystal-sync has freed the sound recorder from being tied to the camera, the new Video West developments are especially significant. The combination of reflex viewing, wireless transmission of the video image and the ability to record and playback from a lightweight, compact video record/playback unit offers the film-maker total creative freedom and an invaluable tool for making motion pictures faster and better. ■



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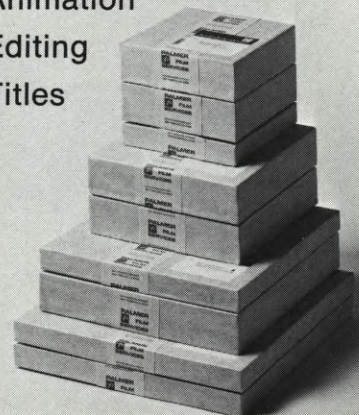
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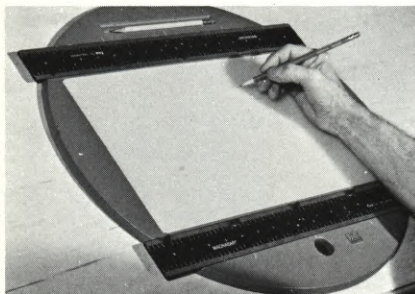
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"WILD ROVERS"

Continued from Page 715
phase of post-production develops.

I sit in on a looping session, during which Tom Skerritt and Joe Don Baker re-record to picture clear sound for the dialogue that has been obscured on location by the clomping of horses' hooves, the drone of jet aircraft, and such.

I am present on the MGM scoring stage while the talented Jerry Goldsmith ("PATTON", "PLANET OF THE APES") conducts a full-scale symphony orchestra to record the rousing music he has composed for "WILD ROVERS".

He tells me: "I wanted the music to be honest and authentic to the West—like the picture itself. I'm using a wide range of instrumentation—very modern instruments, like electronic pianos and flutes, and archaic ones, like the auto-harp."

About Goldsmith and his music, Blake says: "With me music has always been a kind of gut instinct. I'm not a musician, but I love music and a lot of my life has been involved with it. I usually write with music playing. I have a considerable history with Mancini and his music, going back to 'PETER GUNN' and 'MR. LUCKY'—but when it comes to saying what I think a film needs, it really is a visceral thing. In this case, from the beginning, I felt that the music should be like Aaron Copeland's 'Rodeo' or 'Billy The Kid'—that kind of thing, as opposed to the usual Western music you hear, which involves minimal instrumentation—a harmonica, or a fiddle, or whatever. I'm not knocking that kind of thing; it can be very effective. But for this picture I wanted something more unique, something that took real cowboy songs of the time and orchestrated them for a kind of symphonic approach to the piece. This could range from a simple harmonica all the way up to a great big driving orchestra. I picked Jerry Goldsmith to write the score because I think he's a consummate musician. After seeing 'PATTON', I was convinced that he was the one that I'd like for this picture. My instinct was further confirmed when he came out of a screening of the very rough cut feeling and saying the things that were totally compatible with the way I felt about it. I think he has written a considerable score."

The cutting of the picture has proceeded at a good clip and the editor, John Burnett, credits much of this to the fact that he and his assistant were able to be present on all of the locations. "The process of arriving at the

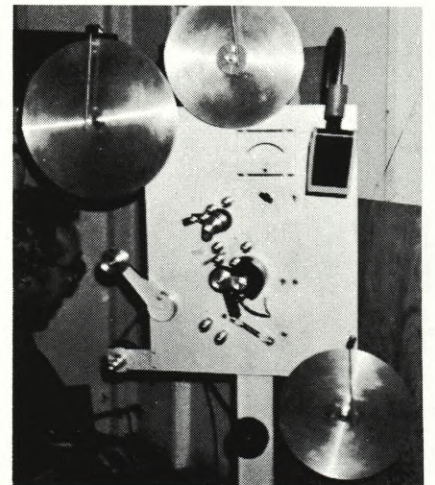
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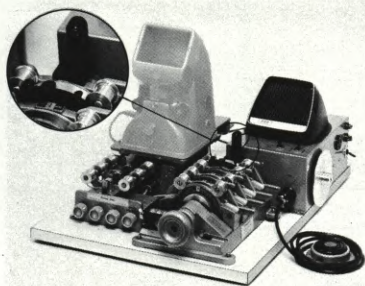
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final cut was tremendously speeded up because we were right on the spot and able to cut rough assemblies during all the time the company was shooting," he tells me. "I'm grateful to Blake for leaving me free to create. I had free-rein to assemble a sequence and then show it to him for his approval, unlike working with some directors who hang over your shoulder and dictate every cut. By its very nature, this has not been an easy film to cut. A lot of blood, sweat and tears has gone into getting it together, but I can honestly say that I've never done a picture that seemed less like work."

THE COUNTDOWN

The rough cut of the picture has been completed and Blake asks me to sit in on the first screening. A rough cut, from the technical standpoint, always shows a picture at its very worst—warts and all. It is actually an interlock combination of the edited, untimed workprint (with color casts all over the scale) and an unmixed track that is lacking in music, equalization and sound effects. There are often scenes missing (slugged in with blank leader) as well as necessary transitions. The action is cut somewhat loosely, to allow for later tightening.

To the outsider, even the very best picture, shown in this state, couldn't fail to look terrible. It requires a very experienced film technician to be able to visualize how all these roughnesses will be smoothed out in the final release print of the picture. And so I am complimented and quite touched to know that Blake has sufficient trust in me to ask me to look at the rough cut of his picture.

Even in this, its sloppiest form, "WILD ROVERS" has tremendous impact and I can't wait to see it with all the work completed. The opportunity comes a couple of weeks later when Ken calls to tell me that the picture will be given its first sneak preview the following night in Costa Mesa, a town about 50 miles down the coast from Los Angeles where, it is hoped, a non-Hollywood typical, middle-class American audience will be in attendance.

As the opening montage fades in on the following night, I am caught up in the surge of the film and stay that way until the final fade-out. With Lathrop's magnificent photography beautifully timed and printed by the MGM lab, with Goldsmith's melodic score skillfully mixed with the dialogue and sound effects, it is worlds apart from the rough cut I have seen. John Burnett has

Continued on Page 723



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CINEMA WORKSHOP

Continued from Page 646
and must be alloyed to prevent wear. In
addition the film manufacturer must
maintain the identical tolerance on the
perforations. While this critical dimen-
sioning on the part of both the film and
camera manufacturers is practical for
the 35mm format, an entirely different
approach was taken for the smaller 16mm
format.

A system sometimes referred to as
the "loose registration pin" is employed
on most professional 16mm cameras
(Arriflex, Eclair NPR, etc.) and is not
dependent on an exact fit between pin
and perforation. The registration pin is
dimensioned smaller than the film per-
foration and has a slight bevel on the
front of the lower edge. In operation
the pull-down claw advances the film to
the next frame but positions the film a
couple of thousandths of an inch short
of the correct position. At this point the
registration pin enters the perforation
and the bevel on the lower edge nudges
the film precisely into place. Using the
analogy of the truck, imagine going into
the panic stop, only purposely coming
to a halt several inches short of the egg.
Then the driver puts the truck into its
lowest gear and slowly eases up to and
stops at the egg. It should be clear that
this system does not depend on a
precise fit between pin and perforation,
and it thus maintains accuracy regard-
less of wear and improper dimensioning
of film (including shrinkage and warp-
age.)

There is a third type of registration
system, made popular by the Arriflex
35 and now incorporated on other
cameras both 35mm and 16mm. This
system uses one claw for both pull-
down and registration. At the end of the
pull-down stroke, the claw "dwells" for
an instant before retracting. This dwell
accomplishes somewhat the same thing
as the loose registration pin and the
results are quite good.

The camera manufacturers have de-
signed these registration systems to pro-
vide impeccable image steadiness. It is
the responsibility of the individual cine-
matographer to assure that these sys-
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very simple test can be performed to
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"WILD ROVERS"

Continued from Page 721

blended the slow-motion scenes of the horse-breaking sequence into a dreamy long lap-dissolve montage that melds with the music to become a visual ballet.

The picture has everything: humor, pathos, guts, tenderness, violence, meaning—and the audience responds accordingly.

"It's a classic Western," I tell Blake the next day. "It has the look and feel of a John Ford film."

"That's the ultimate compliment, as far as I'm concerned," says Blake. "I'm a great admirer of the Admiral. I worked for him as an actor and I consider him a director with a fantastic eye. He's a great cameraman, actually, in the way he composes—in what he picks to photograph. God knows, I've seen everything he's done and admired it all, particularly from the photographic point of view. I would say that if my picture does resemble the Old Man's work in some way, that's good. It means I've learned my lesson well. I hope that it's individual enough to still be Blake Edwards, but I'm not at all ashamed of having learned from somebody like Mr. Ford. I hope that if he sees it, he will like the film. That really would be the supreme compliment."

I'm told that the preview cards in Costa Mesa were very good, but that the studio feels the picture should be about 20 minutes shorter. Then begins the miserable task of cutting and trimming

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and snipping to get rid of 20 minutes of hard-bought film. I know how Blake must feel, having been in the same spot so many times myself. You work so hard to create a film that moves, while still retaining everything you feel *must* remain. Beyond that point, each frame that is trimmed is like cutting part of your guts out.

A week or so later I view the shortened version. Gone is the opening montage, with Frank Stanley's lyrical images that so aptly set the mood of the film. Gone is the gutsy man-to-man breakfast sequence that so firmly established the protagonists in their *milieu*. The dramatic in-depth confrontation between Karl Malden and his shepherd-er arch-enemy, which culminates in slaughter of the sheep, as well as both men, has been telescoped into a quick montage with voice-over narration. One complete sequence which, to me, provided motivation for the entire last half of the picture, has been totally deleted. The downbeat, but honest, ending has been trimmed and tied off with a reprise of the horse-breaking montage that numbs the tragedy and gives the audience a little final lift. Perhaps the audience, never having known all this was part of the original cut, will not miss it—but I will.

The picture, in its shortened form, is given a second sneak preview in Denver and this time, according to the trades, the preview cards rate it 88% "Excellent". You can't argue with that.

As I write this, the Press Preview is scheduled for tomorrow night, with the World Premiere at Grauman's Chinese Theatre set for two nights later.

The final verdict on "WILD ROVERS" rests, of course, with the audience—and audiences are notoriously fickle these days.

But before either press or public passes judgment, let me say that this picture is, and always will be, very special to me—for I have had the privilege of being, in some small way, a part of it.

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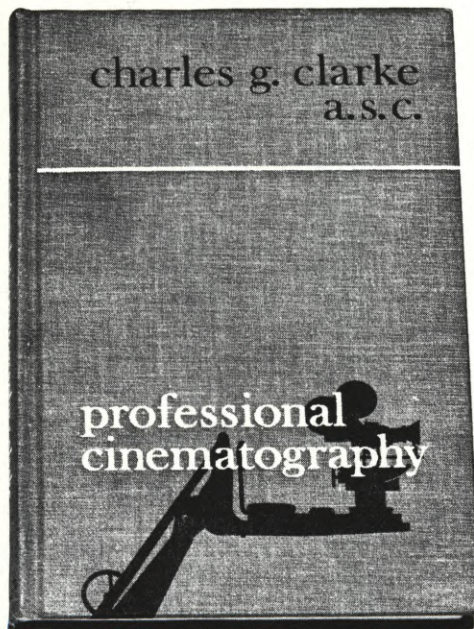
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


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