

MAY 1970

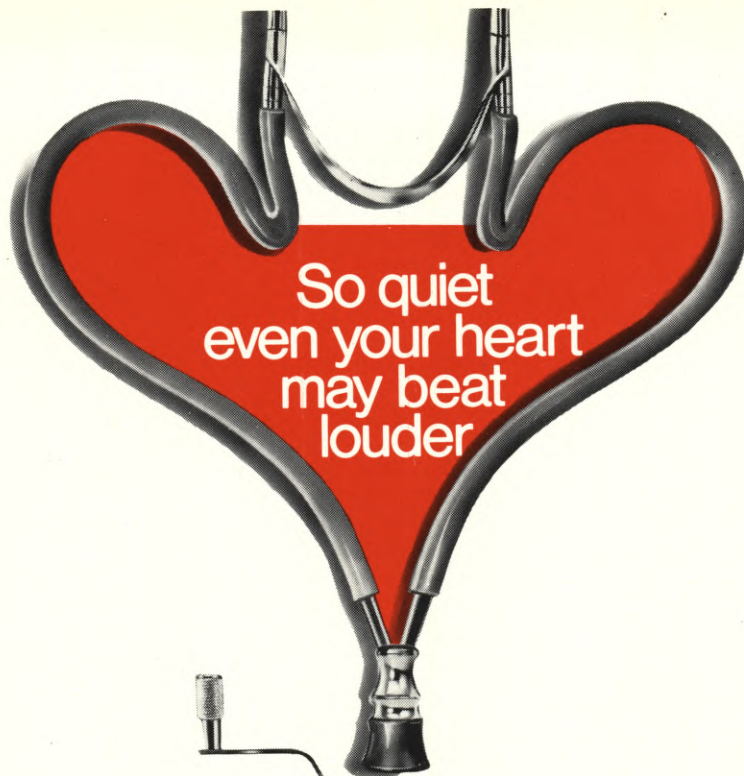
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AMERICAN Cinematographer

International Journal of Motion Picture Photography and Production Techniques



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louder



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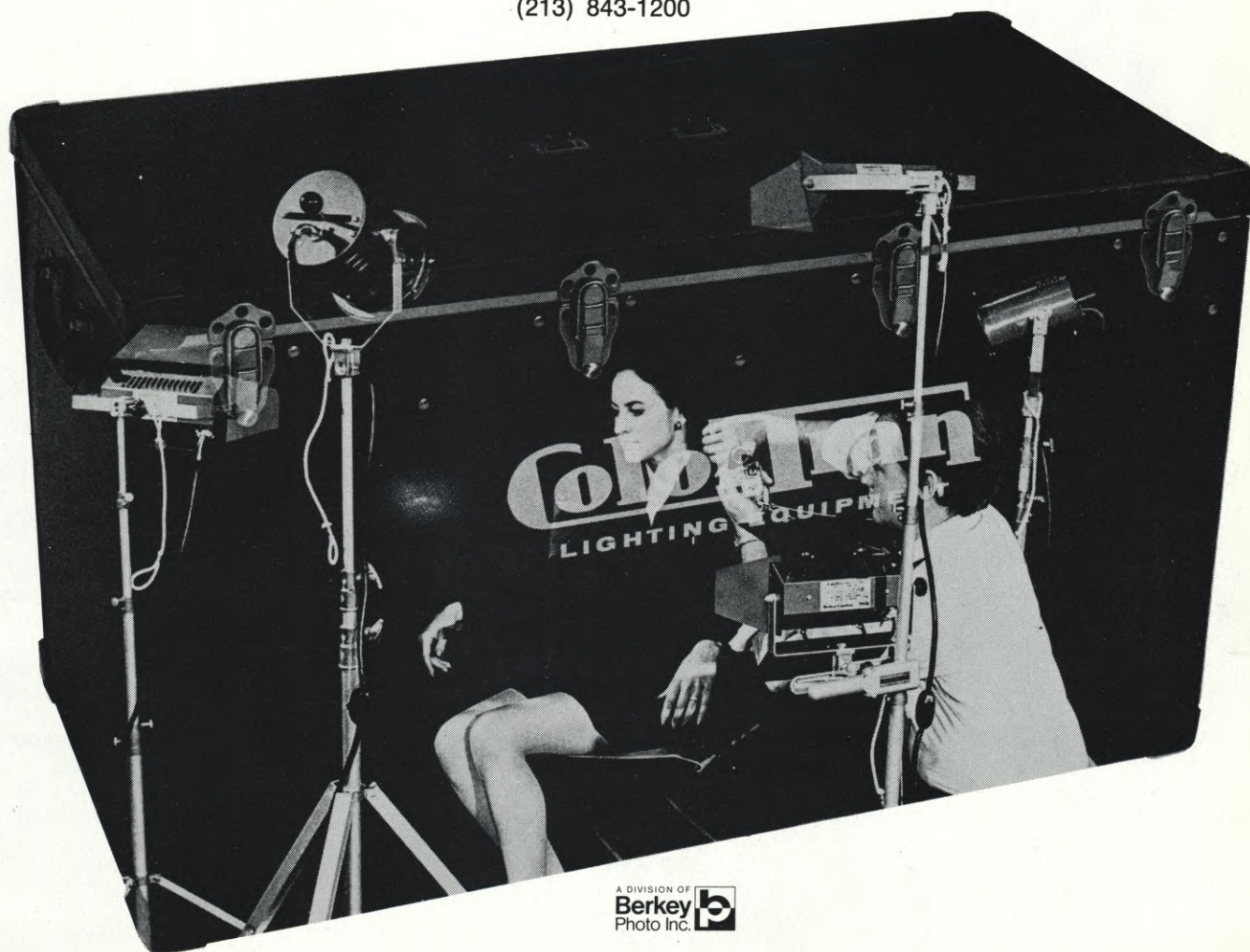
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AMERICAN Cinematographer

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MAY, 1970

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Herb A. Lightman
editor

Three Tyler
advertising manager

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Editorial—Business Offices

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

Advertising Representative

Paul Gilbert
485 Fifth Avenue
New York, N.Y. 10017
297-5614

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ON THE COVER: Repeat motif abstracted from the basic lines of "Oscar", the famed Academy Awards statuette. Cover design by Don Record. Photographed by Arthur C. Miller, ASC.

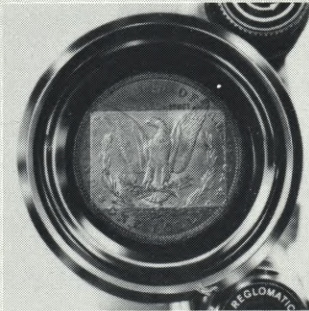
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Here is the new Beau

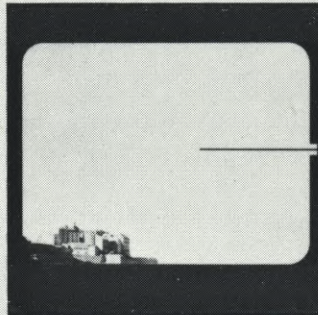
Variable-speed electronic zoom



New! Vary the duration of your zoom shots anywhere from 2-12 seconds...with an 8:1 ratio between maximum and minimum focal lengths. You will enjoy perfectly smooth action from 8 mm wide-angle to 64 mm telephoto with the mere touch of a button. And you can stop just where you want to with Beaulieu's inertia-free zoom system.



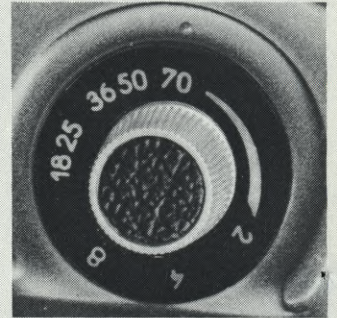
Reflex viewing on a giant focusing screen



New! You'll see the actual image you will be filming through the giant viewfinder...enlarged to cover your entire field of vision. Spot every tiniest detail thanks to the brilliant virtual image in Beaulieu's reflex viewfinder.

Point-blank-range macrocinematography

New! Beaulieu's power focusing lets you take sharp pictures up to 1/25" (1 millimeter) from the subject without accessories. Frame and focus (without moving the camera) either with the zoom or macro control. Fill the entire frame with a field measuring just over 3/4" x 1/2".



70 filming speeds

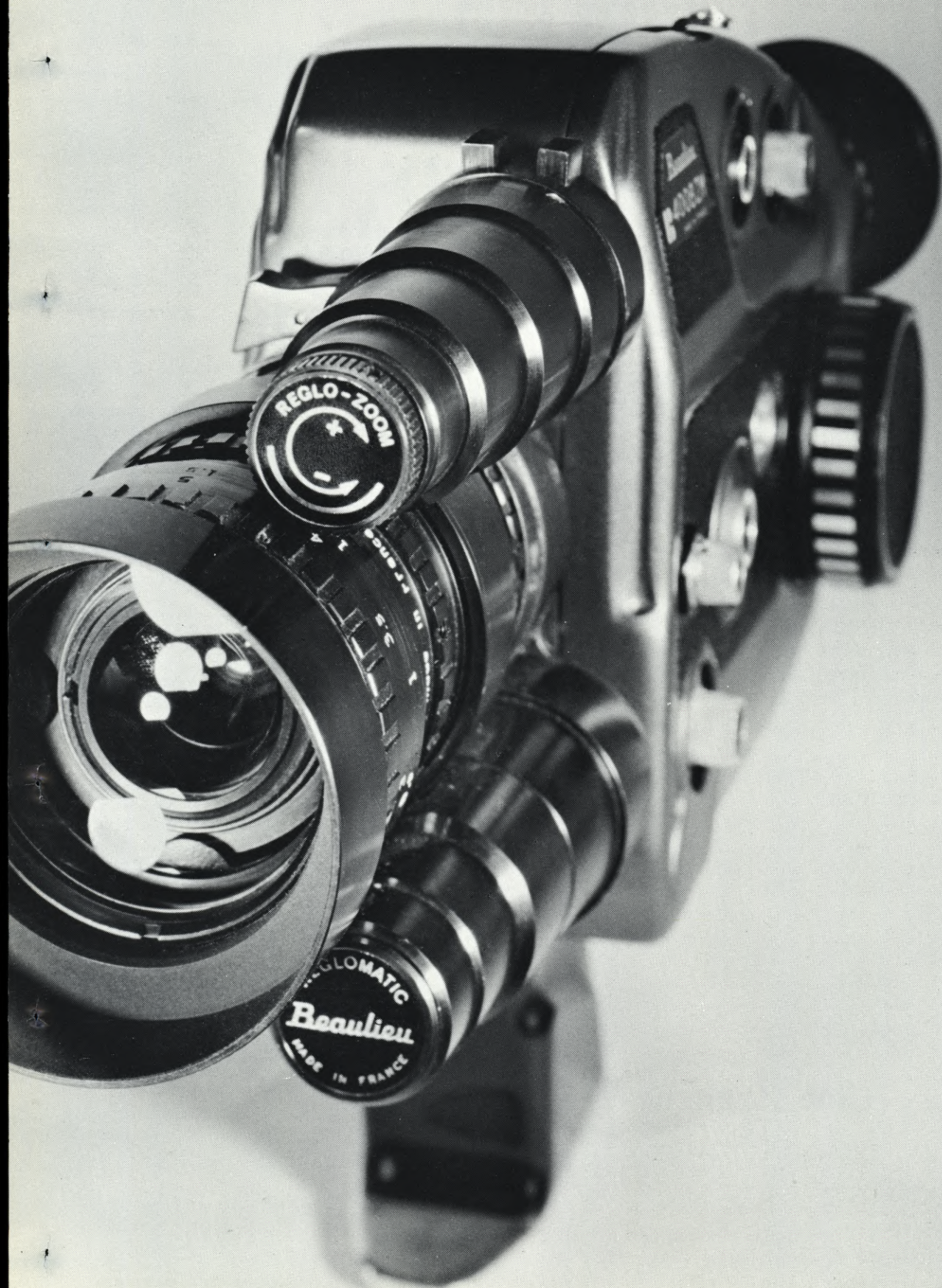
New! Step up your filming speed to 70 fps (for slow-slow motion effects) or down to 2 fps (for filming a static subject under very poor light conditions). Change filming speeds from one extreme to the other or anywhere in between...while you are filming.

...and what other "plus" features?

The new Beaulieu 4008ZM features the "Reglomatic" system with a micromotor which transmits exposure data from the photocell to the iris diaphragm of the zoom lens. The diaphragm setting ring adjusts automatically to the slightest change in light intensity and unflinchingly selects the ideal aperture. Beaulieu's automatic exposure system can be disconnected and for special effects you can manually select your own aperture. Other Beaulieu "plus" features include: longer-lasting nickel-cadmium rechargeable battery (shoot 8 to 12 Super-8 50 ft. cartridges without recharging)...interchangeable lenses...variable shutter for fades...remote control socket...single frame filming...retractable ground-glass focusing screen...frame counter and footage counter.

And there is much moreget all the facts on the Beaulieu 4008ZM, the Ultimate Super-8! See a demonstration at your finest camera store or write Cinema Beaulieu, 14225 Ventura Boulevard, Sherman Oaks, California 91403. We will send you a handsome full color 16-page brochure on the new Beaulieu 4008ZM.

lieu 4008ZM Super-8!



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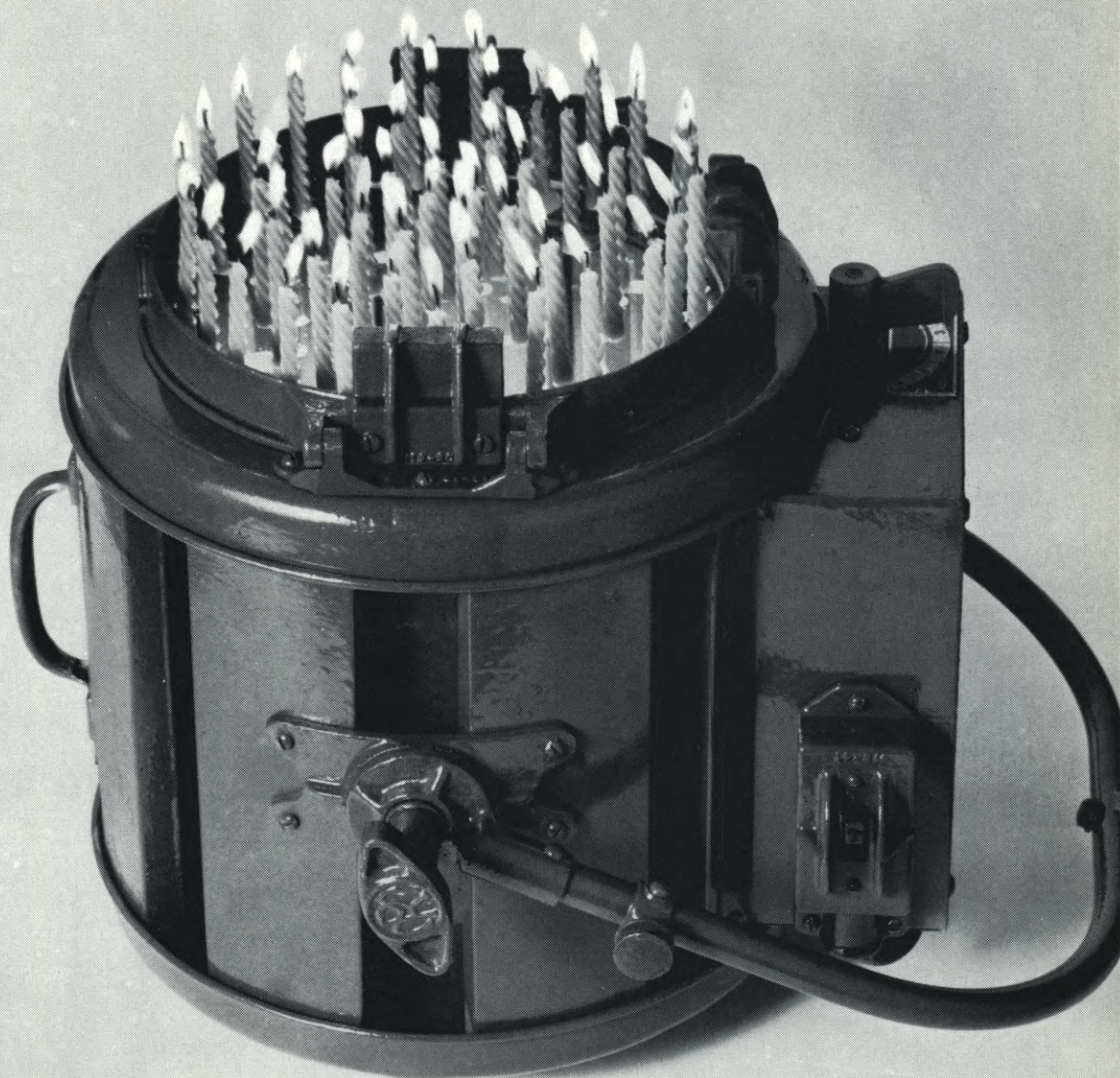
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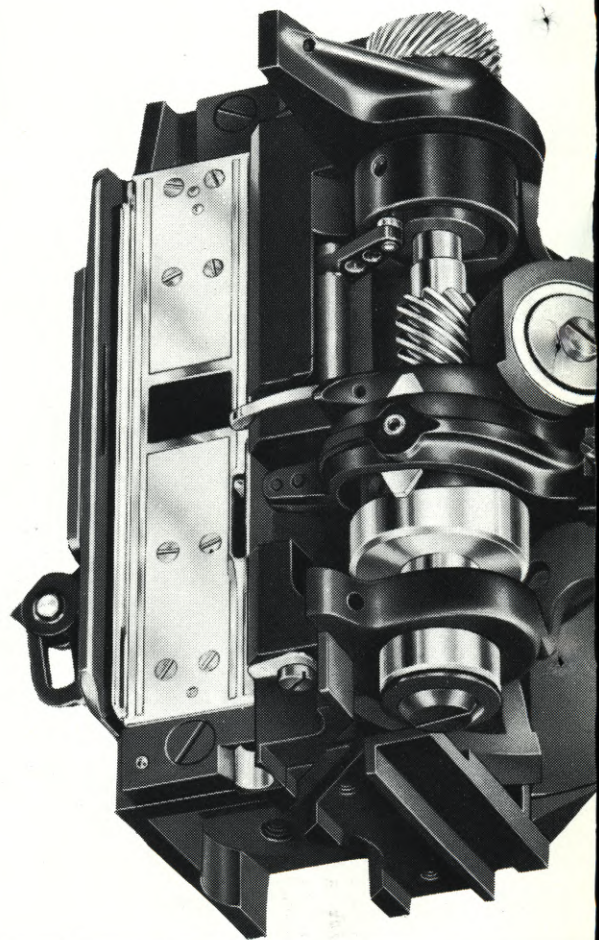
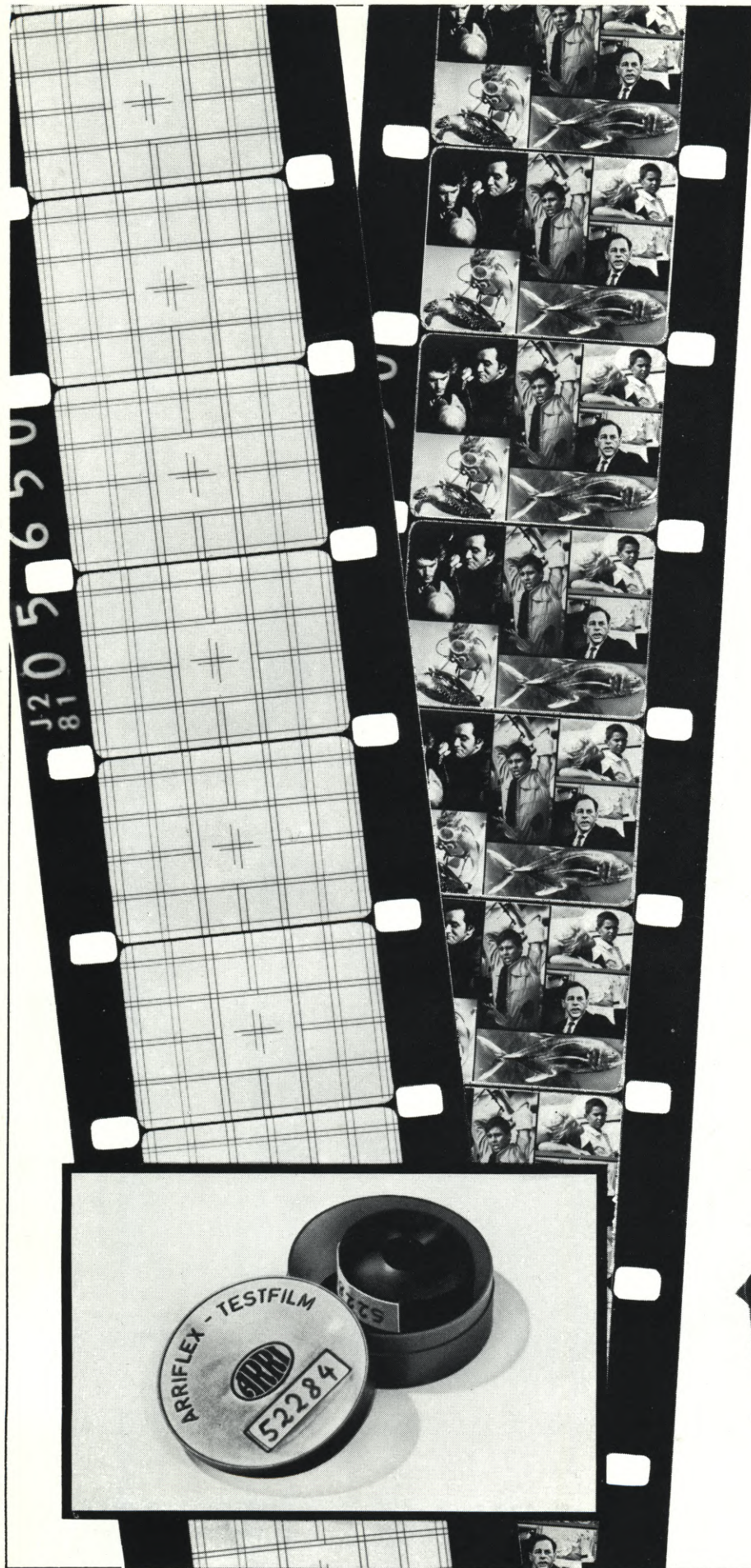


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The test film that accompanies each new 16mm Arriflex shows why these cameras are so successful in shooting master footage for optical effects. Multiple-image, split-screen, 16 to 35 blow-ups and other complex effects are as important in 16mm production today as in larger-format production—and absolute registration of the camera original is a pre-requisite if opticals of superb quality are to be made later in the laboratory. That such techniques can be produced without compromise in 16mm will be proven when you project the Arriflex test film.

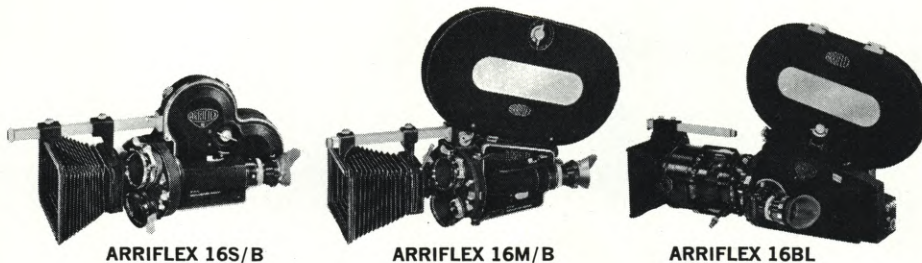
The test film was made in two exposures, with the test grid offset before the second pass. Had registration been anything less than perfect, you'd see it immediately on the screen as movement of the grid lines in relation to one another. But there is no such movement—you see the illusion of a single exposure—because of the unflinching constancy of each frame's registration.

The reason for such consistently steady footage is not only because of a true registration pin film movement but also due to the design and construction of the mechanism as a whole. It features many unique concepts for absolute film stability, followed through with the most durable materials. Its quiet, vibrationless precision prevails at all running speeds, forward and reverse, over millions of feet of film. Its ability to withstand shock and environmental extremes has been proven countless times over, since its introduction nearly twenty years ago.

Picture quality is the essence of any film, of course; whether or not a production involves opticals, registration and sharpness are among the elements producers and cameramen stake their reputations on. This offers one explanation why there are more Arriflexes in use throughout the world than any other professional camera. For the complete story, write for brochures.

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Pin movement locks each frame into position for exposure; long film channel with spring-loaded side pressure rail produces absolute lateral stability. Solid cast, hardened double cam mechanism resists wear, sustains vertical registration accuracy over millions of feet of film. Rear pressure plate (removed in this illustration to show registration pin) is an integral part of the movement assuring longitudinal stability (no film breathing).



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INDUSTRY ACTIVITIES

TYLER CAMERA MOUNT USED TO COVER APOLLO 13 SPLASHDOWN

The CBS network used a standard 16mm Tyler Mini-mount with their new color TV camera to shoot coverage of the Apollo 13 capsule when it splashed down in the Pacific after a danger-wrought voyage through space.

Tyler Camera Systems announces the addition of a new and valuable accessory to its growing line of specialized camera equipment, the REMOTE TELEVISION RECEIVER.

This system incorporates a small micro-television camera and space age transmitter that attaches to any regular or Panavision Mitchell Mk II. By utilizing a special dual-optical system it picks up the same through-the-lens view seen by the operator. The picture is transmitted via microwave to a small (12"x22"x24") self-powered remote receiver where it is monitored by the Director who is in two-way radio communication with the camera operator.

The scene can be simultaneously taped for repeated viewing.

For further particulars, write or call:

Tyler Camera Systems; A division of NTT Enterprises Inc.; 6335 Homewood Ave., Hollywood, Calif. 90028; (213) 466-1666

LARGEST STUDENT FILM FESTIVAL ANNOUNCED

Plans for the largest student film festival in history, with the new sponsorship of a major American business organization, the Jos. Schlitz Brewing Co. of Milwaukee, were announced today.

Schlitz is sponsoring the competition in co-operation with the American Film Institute and the National Student Association. The contest is aimed at stimulating the creative talent of young film makers on the college campuses of the country where interest in film is mounting.

World premiere screenings of prize-winning films, to be held in New York and Los Angeles in September, will highlight the festival.

Robert A. Uihlein, Jr., board chairman and president of Schlitz, said the

brewery would provide five cash prizes of \$2,500 each, 20 prizes of \$500 each, and two Fellowships worth \$30,000 each.

The two Schlitz Fellows will be chosen from those entrants in the competition who apply and qualify for admission to the AFI's Center For Advanced Film Studies in Beverly Hills, Calif., and will study for two years at the Center.

"Film is an exciting and expanding art which can inform, entertain and inspire an already turned-on generation of bright and idealistic college students," Uihlein said. "Film is the language of today. It talks in terms of what is happening now—to us—and we at Schlitz are delighted to be involved in such activity on the college campuses of America."

Judges noted for excellence in their fields—critics, film makers, directors, producers, technicians, and performers—will select the 25 winning films, each judge setting his own criteria.

This year for the first time a major film journal will be published for distribution, free of charge, to every student attending the festival's premiere screenings and to every student taking a film course in a college or university. The journal will contain a wide range of articles by noted film authorities.

This year's competition will be the fifth annual National Student Film Festival. Last year it drew 146 entries from 44 colleges and universities. Due to the exploding interest in film on campuses, about 300 entries are expected this year.

Following the New York and Los Angeles premieres, similar screenings will be shown in 30 other major cities and campuses. Then the show, consisting of a two hour package of award winning films, goes on the college circuit, to some 500 campuses across the country. There, student organizations will sponsor screenings.

Schlitz also plans to show the film package to U.S. servicemen, here and abroad.

NSA, the largest and oldest student organization in the country, founded the film festival in 1965. NSA has 450 member campuses representing approximately two million students.

Charles Palmer, Washington, D.C.,

president of the National Student Association, said, "We welcome and appreciate the participation by a major business organization, the Schlitz brewery, and by the American Film Institute in our student film competition. This support from business and the AFI will result in the largest and finest competition of this kind ever presented. We look forward to an exciting festival."

National Academic Services, Inc., a student marketing group, will organize, promote and administer the film festival on behalf of NSA.

The AFI is headed by George Stevens, Jr., Los Angeles. AFI was founded in 1967 as a nonprofit, nongovernmental organization concerned with the motion picture in American life—in theaters, homes, libraries, classrooms and wherever films are found.

AFI is considered a major link between students, independent film makers and the motion picture industry.

Stevens said: "The Center For Advanced Film Studies was established to bridge the gap between programs at existing film schools and the profession. Several past participants in the National Student Film Festival are part of the initial group of Fellows at the Center. AFI's commitment to student film makers and the use of film as a tool in education is already established. Developing film makers is expensive, and by sponsoring Fellowships at the Center, Schlitz has become one of the leaders in recognizing the importance of film as the art form that reaches all Americans."

AFI's aim, Stevens adds, "is to bring cinema to its fullest stature in the country of its birth; to preserve, stimulate, enrich and nurture the art of film in America."

And that is Schlitz's aim, too, Uihlein said.

Schlitz's involvement in film adds to its sponsorship of other art forms which brought to it three consecutive "Business in the Arts" awards from Esquire magazine and The Business Committee for the Arts—the only firm to be so honored that often.

Schlitz has sponsored New York Philharmonic concerts in New York area parks, has been a sponsor of the Newport Jazz Festival, and has put other jazz festivals on tour. ■

NEW TREISE PROCESSORS FEATURE

SBR^{T.M.} drive!

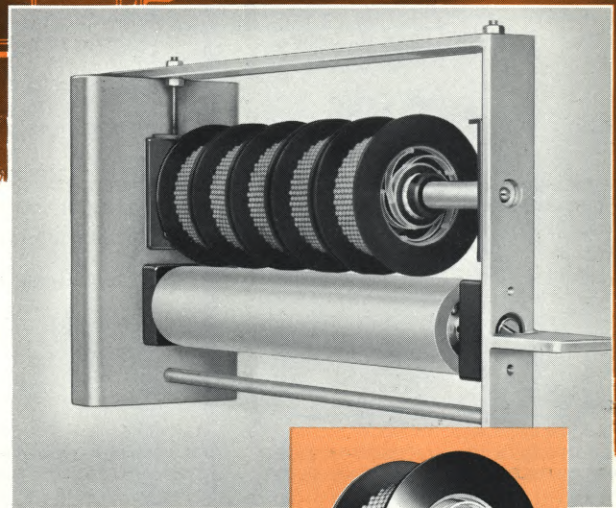


Now you can change film sizes ...and still maintain uniform tension and constant speed!

Any laboratory that changes film sizes frequently or plans to process multi-perforated film will find the new Treise Processors a dream to operate. They feature a revolutionary new type of demand-drive that assures uniform controllable tension and constant film speed throughout the processor.

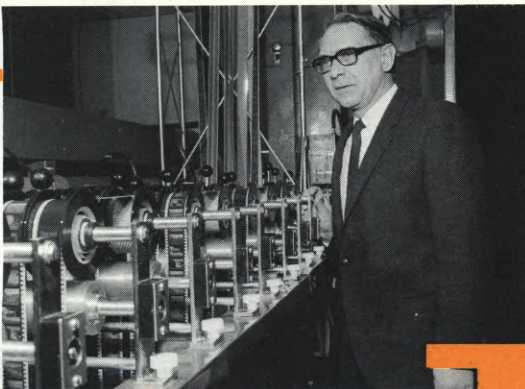
The heart of the Treise SBR-Drive is a unique new film roller with a flexible heavy-duty 5-leaf spring insert. The spring bearing rollers (SBR) are mounted on a stationary shaft at the top of each rack and are free to rotate. An overdrive shaft is mounted directly underneath. As film tension increases (or decreases), the SBR contact (or pull away from) the drive shaft. The result is individual strand control! Due to the unusual construction of the Treise spring insert, the distance between the rollers and the drive shaft is so small that the slightest change in film tension creates a response and thus maintains a remarkable degree of equilibrium.

All SBR are equipped with "soft touch tires" that firmly grip the film and smoothly move it along without the slightest scratch or abrasion. Treise processors operate smoother, too, because they feature heavy-duty gear box drive and torque motor take-ups.



When using SBR-Drive, the elevator is kept at a fixed position less than an inch from the bottom of the tank, thus permitting full utilization of chemical solutions. SBR-Drive comes either in individual lift-out racks or as part of a complete unit lifted out by hoist, for quick easy servicing. SBR-Drive includes an automatic braking system to stop the processor, in the event a film breaks due to some error in handling.

The new Treise SBR-Drive Processors feature stainless steel tanks, with hastelloy or titanium components in ferri bleach areas. Models are available to accommodate any film size from 8mm to 105mm, to handle any kind of process, and to operate at speeds from 30 fpm to 250 fpm.



Bill Smith, Allied Film President, checks over his SBR-Drive.

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Write for full information about SBR-Drive!

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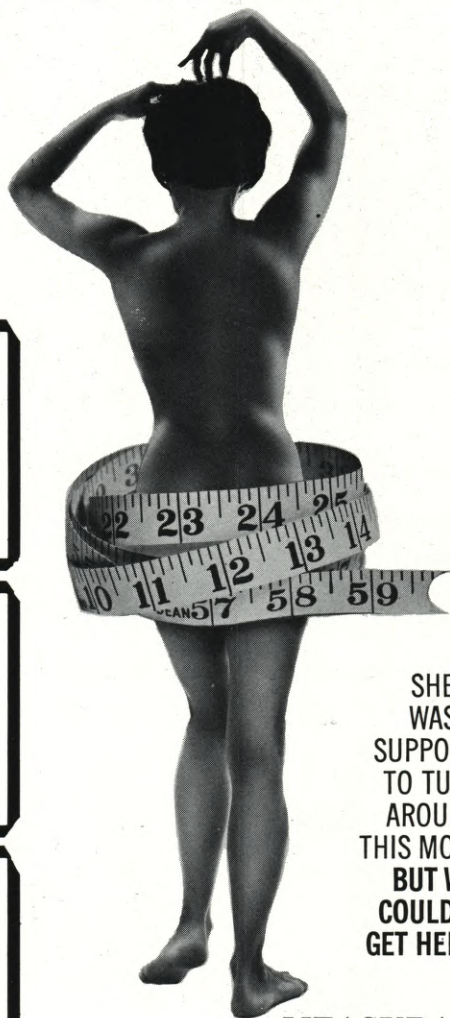
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SHE WAS SUPPOSED TO TURN AROUND THIS MONTH, BUT WE COULDN'T GET HER TO!

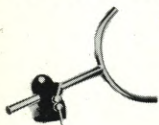
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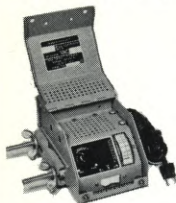
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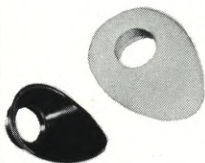
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Both
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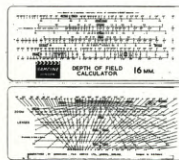
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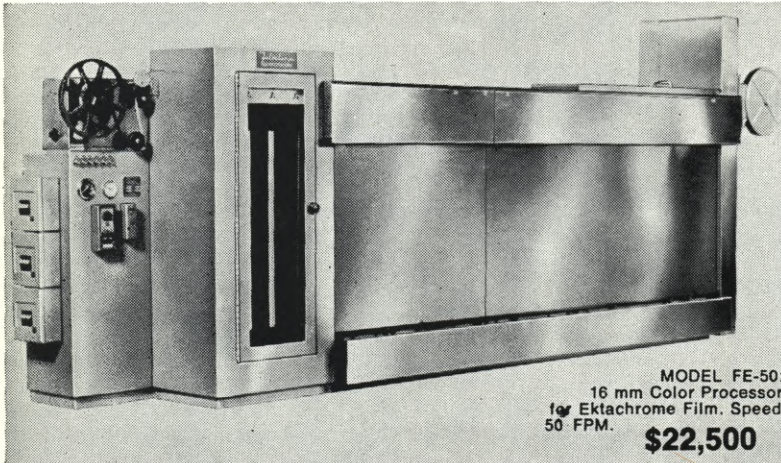
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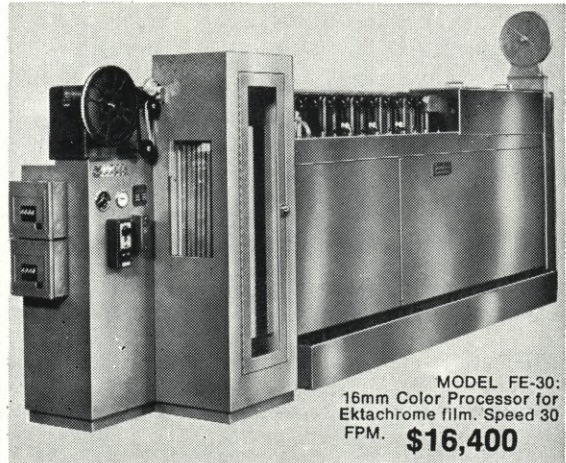
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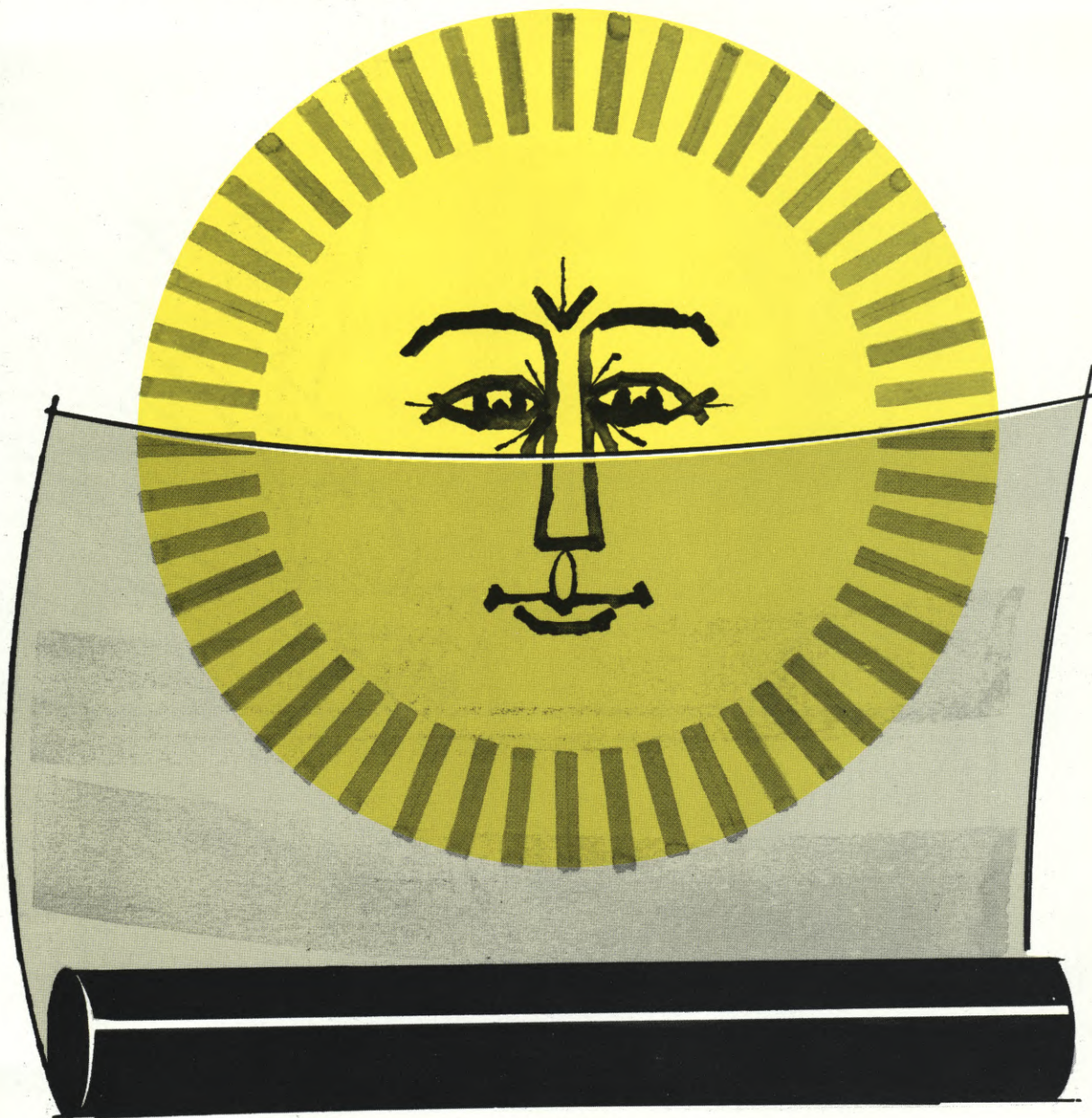
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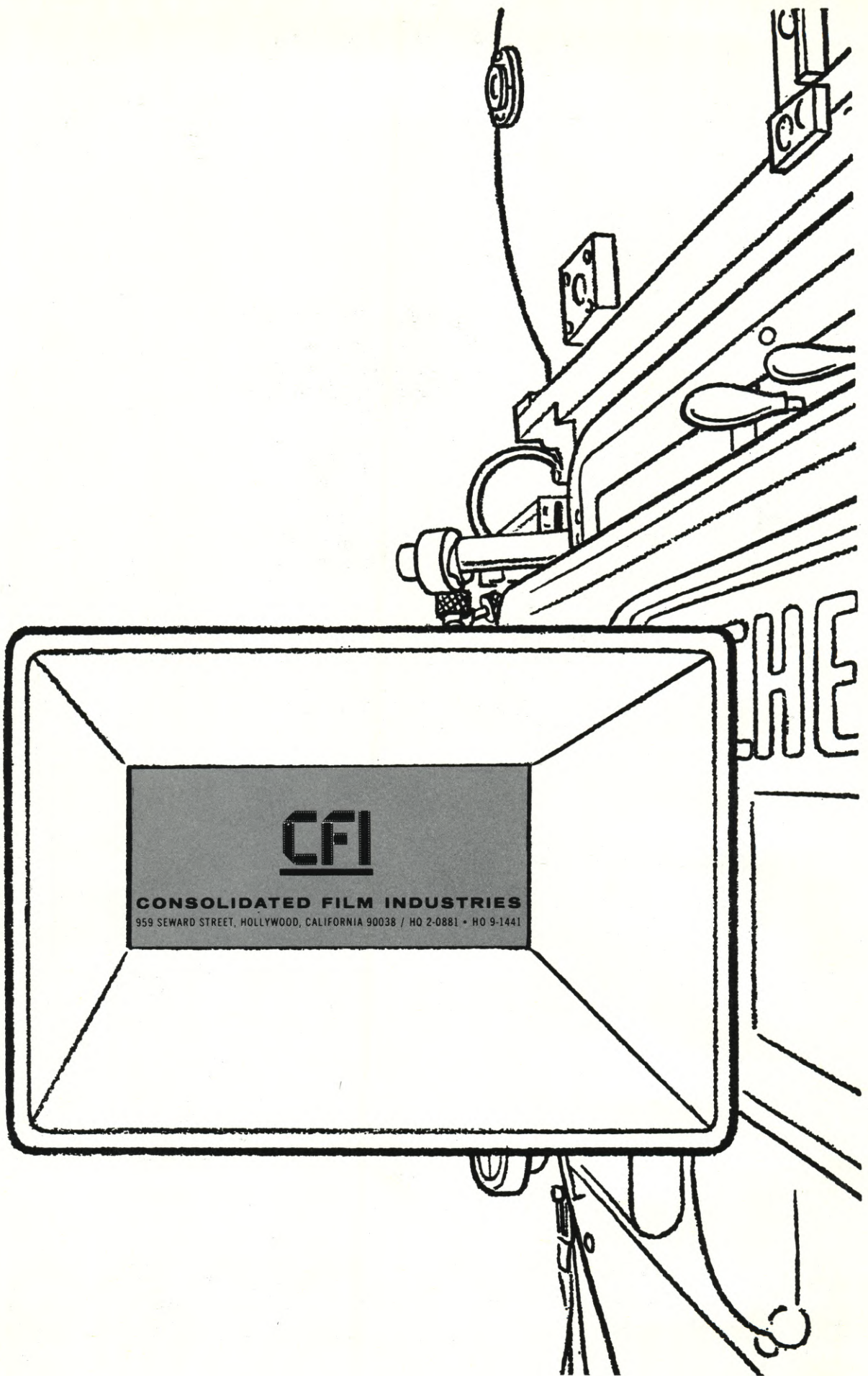
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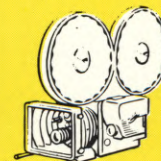
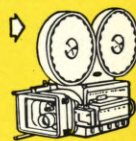
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THE MAKING OF "OMEGA"

A student film-maker, working alone, uses highly sophisticated special effects techniques to fill the screen with images of "cosmic" beauty

By DONALD FOX

Briefly, "OMEGA" is a film which deals with the end of mankind on the earth. It is not the death of man, but his re-birth that is, his liberation from his earthly bounds to roam the universe at will. Unlike "2001: A SPACE ODYSSEY" and "CHILDHOOD'S END", there is no extra-terrestrial intelligence to give man a helping hand, for he accomplishes what he does alone by projecting a ray at the sun which absorbs the vast energies there, making possible the transformation.

As one can see, it would be an almost impossible challenge to put such an ambitious concept onto the screen, let alone on the small budget available for a student film. But fortunately I was able to raise \$7,000 for the production and with this I somehow completed the project. The film took approximately 12 months to make: 10 months to prepare art materials and shoot, one month to do the optical printing, and a month to edit; in all about 3600 hours, or about 10 hours a day, seven days a week for a year. I had very little help and had to do most things myself. I had an incredibly difficult time making it and there were many times when I felt that I was doomed to failure, not only because of the tremendous technical

difficulties encountered, but from sheer exhaustion.

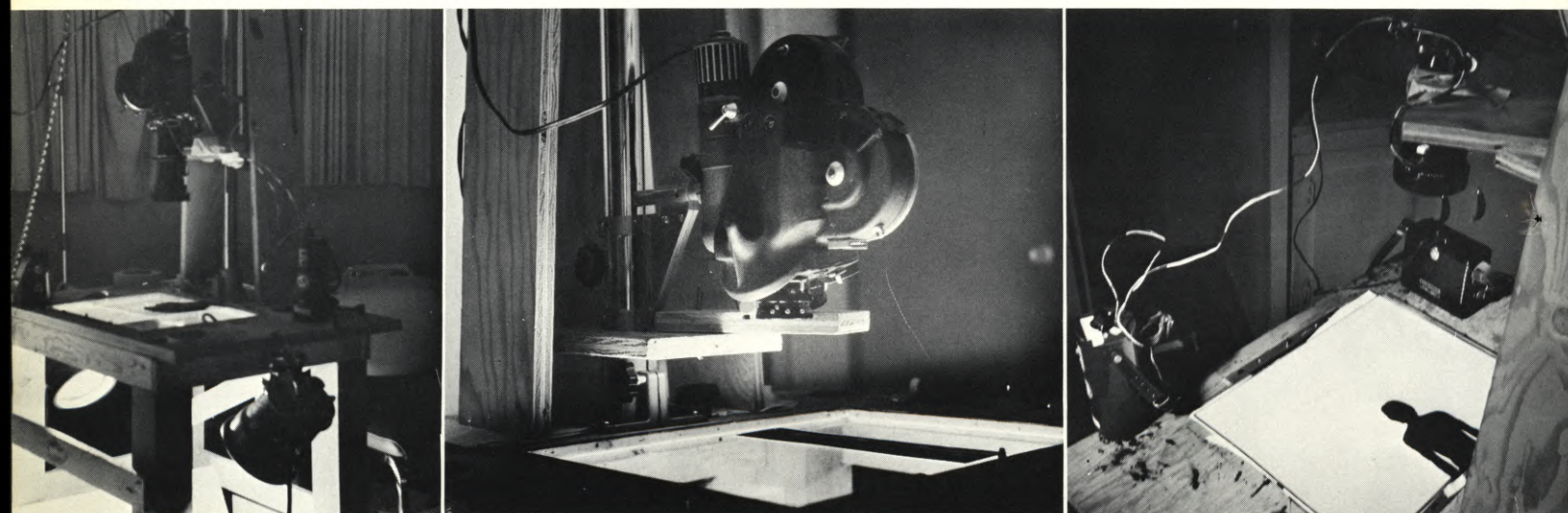
From the outset of the production, I had no idea of the extent of the difficulties that would arise. The film is composed almost entirely of special effects and, although I had a rather extensive theoretical knowledge of special effects gained from a number of books and articles on the subject, I had gained none of the practical experience which is necessary to production of this magnitude. Thus, I virtually had to *learn* how to do *everything*, for there was nothing taught at UCLA on the subject of special effects, nor did any of my professors have the least knowledge of this extremely important area of cinema. I knew what sort of images I wanted on the screen, but how to create them was another matter.

The most difficult part of the film was the shooting. Except for a sequence of solar flares, I had to shoot everything. I wanted the film to open with a spectacular title sequence suggesting travel through space. But before getting to the stars, I wanted something outside of the universe, a sort of *light*, through which we could travel to reach the stars, but I did not have the least idea of what it should look like.

Actually, I happened onto the design while working with a sponge. I poured some black, Cel-Vinyl paint onto the sponge and pressed it against an animation cell. The result was a rather interesting design, but the texture pattern was too large. So I tried some coarse cloth, dipping it into the paint and pressing it onto the cell. This texture pattern was much smaller, so I began to experiment with different shapes until I liked one in particular. It had a dark round area in its center into which the camera could be zoomed. I experimented with another design of a more random pattern, which could be superimposed over the first one. This second design would be zoomed at a faster speed, thus being placed in a plane separate from the other.

The star field sequence was relatively easy to create. I made the stars by painting a piece of aluminum foil black with poster paint. Once dry, I punched small holes in it with a needle. The foil was placed in front of a 12-inch diameter reflector holding a 250-watt photoflood. I tried using a 500-watt photoflood, but the reflector got so hot inside that the bulb exploded after about five minutes of shooting. Even with the 250-watt lamp, the reflector became

(LEFT) On the animation stand built by the author for \$75.00, the pipe and camera are held steady by the side, back and overhead boards. (CENTER) Shooting transparency material lighted from below. The light source was provided by three 1000-watt quartz lamps reflecting off of a white cardboard beneath the glass surface. (RIGHT) Artwork lighted from the top is photographed on the animation stand—in this case, a rotoscoped cell used to make a male matte.





(LEFT) Photographing the spinning "stars" by mounting the photoflood reflector on a turntable. (CENTER) The white background used to photograph the silhouettes was simply a large piece of seamless paper hung from a board and illuminated with a number of lights. Usually the subject would sit on the table top. 7362 high contrast film was used in the camera. (RIGHT) Rotoscoping a Bolex, using small slide projector as a light source and a strip of aluminum foil as a mirror.

terribly hot, and I had to let it cool off every so often.

To shoot the star sequence, I rented a powered 12/120 zoom lens which I mounted onto the University's Arriflex. I began by zooming in on the "stars" using the slowest zoom speed and running the camera at 48 fps. The actual F-stop did not matter very much, but I had tested it at around F/8 at 24 fps. At 48 fps, the farthest plane of stars was created. Next, I set the camera at 24 fps, set the zoom speed of the lens faster, and shot that. I kept increasing the lens zoom speed toward its fastest stop on each successive take until I got to the limit, at which time I slowed the camera to 12, 6, and finally 3 fps. This gave me a vast number of zooming speeds or planes. In addition, as I would change the speed to make a new set of "stars" I would change the direction of the camera pointing at the "stars" so that the star pattern would vary. Also, I made up new star patterns for various takes in order to lend additional variety to the star planes. With the optical printer I superimposed four different star planes to create a striking three-dimensional effect.

Shooting the design which supposedly represented the outside of the universe was done somewhat differently, in that I shot it out of focus so that, as the zoom range increased, the pattern became more blurred and indistinct. This covered up the "phony" look of the design when the zoom reached its telephoto extreme and also made it possible to zoom right into the black shape in the center of the design. The first design was shot at the slowest setting of the

zoom lens on Plus-X Reversal film. The second design was shot in the same manner, but at a faster speed. In the optical printer the two were superimposed, the former exposed through a violet Wratten 34 filter, and the latter through a blue, Wratten 47B filter. The final sequence is quite striking as the camera travels through this three-dimensional design into the stars and the title of the film appears.

After traveling through the stars, I wanted the sequence to end with a zoom in on the earth. For this scene, I had Producer's Photo Lab make an 8x10 color transparency of the earth from a Hasselblad shot taken during one of the Apollo missions. Because the black area which surrounds the earth in the transparency was not truly opaque, I had to make a black matte that would

Continued on following page.

(EDITOR'S NOTE: During the course of a career that cries out for 34-hour days, I somehow manage to include in my jam-packed schedule the viewing of quite a few films made by student film-makers. This is not only because I recognize the importance of training skilled young technicians to fill the ranks of our ever-expanding industry, but because I find in some of these efforts (along with the inevitable chaff) a certain verve, originality and zest that adds up to considerable excitement on the screen.

Out of the hundreds of student films I have viewed, the finest by far is "OMEGA" by Donald Fox—but the term, in this case, is a misnomer. "OMEGA" is a "student film" only in the sense that it happens to have been made by a graduate student in Cinema at UCLA. Discounting that fact, I can say with the utmost sincerity that "OMEGA" is a picture of such consummate skill, artistry and professionalism that any of the top veteran special effects experts in the industry might well be proud of having made it.

Donald Fox, a modest and soft-spoken young man of 23, causes the screen to pulsate with a total sensual experience of such stunning beauty that more flamboyant critics might be moved to call it "sheer poetry in sight and sound" or "a lyrical feast of the senses". Being somewhat more down to earth, I will simply say that "OMEGA" is an incredible achievement—not only artistically, but technically. First, Mr. Fox had to see, with the imaginative eye of his mind, each spectacular image required to make his statement. Then, with no actual previous training in the intricate field of special effects, he had to work out and execute the enormously complex technical realization of each image.

The 12-minute, 16mm, color and sound film consists of almost wall-to-wall special effects, many of them realized by dint of multiple passes through the optical printer. Fox had not operated such equipment before, nor had he been given any first-hand instruction in its use. He performed the tremendously sophisticated technical feats required by the project solely on the basis of knowledge gained from journals and books he had read on the subject. And he did everything himself, working the equivalent of a solid year of 10-hour days, seven days a week.

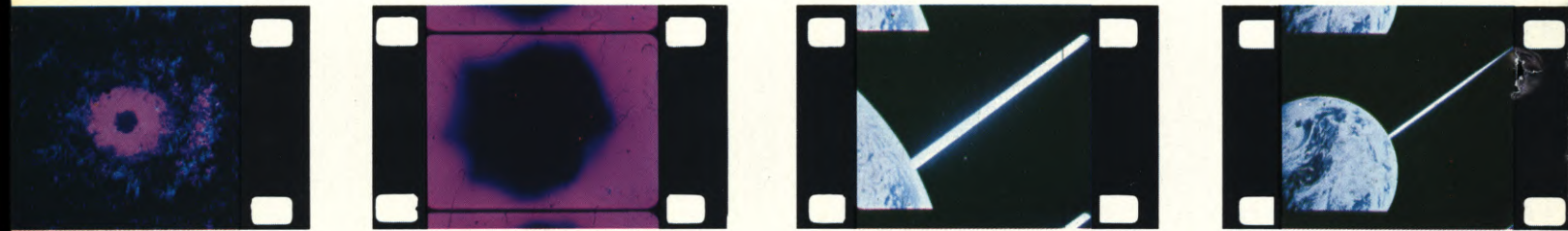
The result might well have been a series of unrelated spectacular effects, but instead, "OMEGA" emerges as a cohesive statement of man's unquenchable faith and idealism, expressed in cosmic images. Because of this latter characteristic, there are inevitable echoes of "2001: A SPACE ODYSSEY"—but "OMEGA" is in no way imitative of Stanley Kubrick's space masterpiece. The similarity lies in the dedication, the skill and the uncompromising perfectionism which both Kubrick and Fox have applied to their respective projects.

"OMEGA" is an auteur film in the fullest sense of the term. Donald Fox's blood, sweat and figurative tears are upon the emulsion—along with some of the most magnificent images this viewer has ever been privileged to enjoy.

HERB A. LIGHTMAN, *Editor*



(A) High contrast positive made from infrared camera negative of tree. Since infrared renders foliage white and sky black, the separation of the two is great enough to achieve a high contrast matte of the tree. (B) Male matte made from A. (C) Two color background of yellow clouds and red sky made from black and white infrared shot of clouds which was later bi-packed with B and finally exposed to A through a blue filter to produce D.



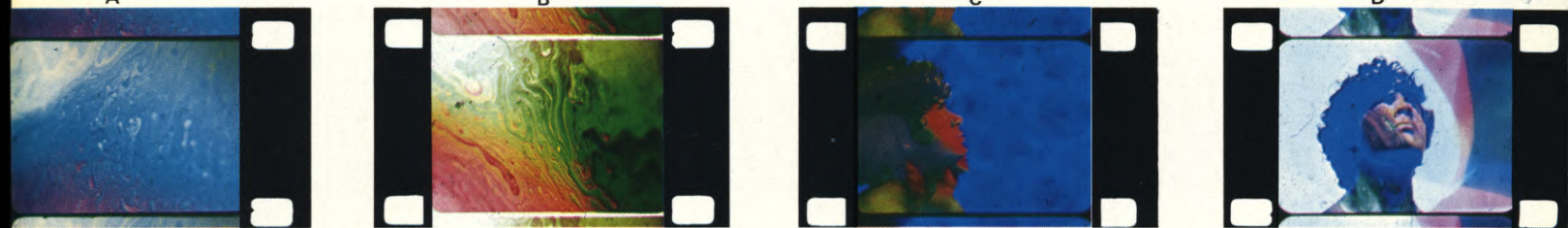
(A-B) Two shots of the beginning of the film showing a long shot and close shot of the "outside of the universe." (C-D) Several shots of the earth and ray showing a close shot and long shot of this difficult in the camera composite.



(A-D) This series of shots shows the various stages in this difficult pan over from the "star" to the sun.



(A) Original reversal of matted positive litho still. (B) Original reversal of matted negative litho still. (C) High contrast positive matte of litho image. (D) Kodachrome original of bubble.



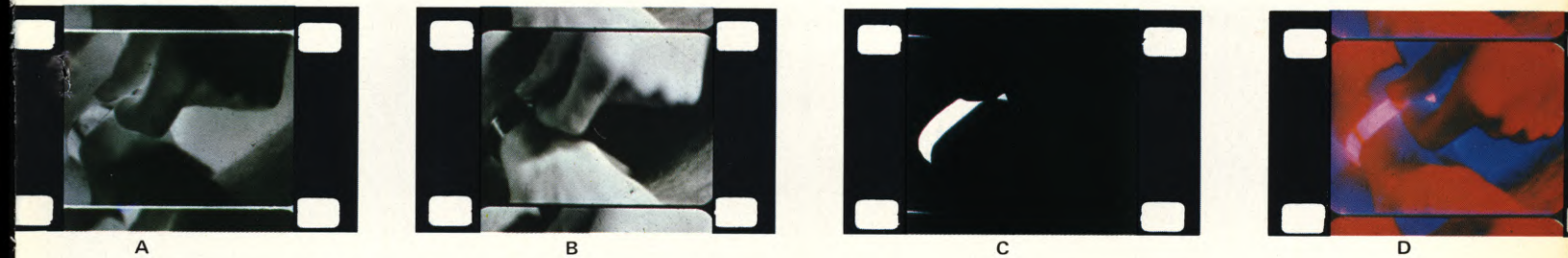
(E) Neg of C made on 7385. (F) Plus-X Reversal background of glass image. (G) ECO composite made by bi-packing A with E, B with D, and C with F through a blue filter. (H) Another ECO composite example showing a similar type of image of a bubble flowing through the figure's face.

(A) Positive print of the sun taken in time-lapse through a chronograph camera. (B) A passed through orange filter showing it without the roto-scoped matte. (C) Rotoscoped, female matte of A. (D) Final ECO composite made by superimposing C through orange filter onto B.

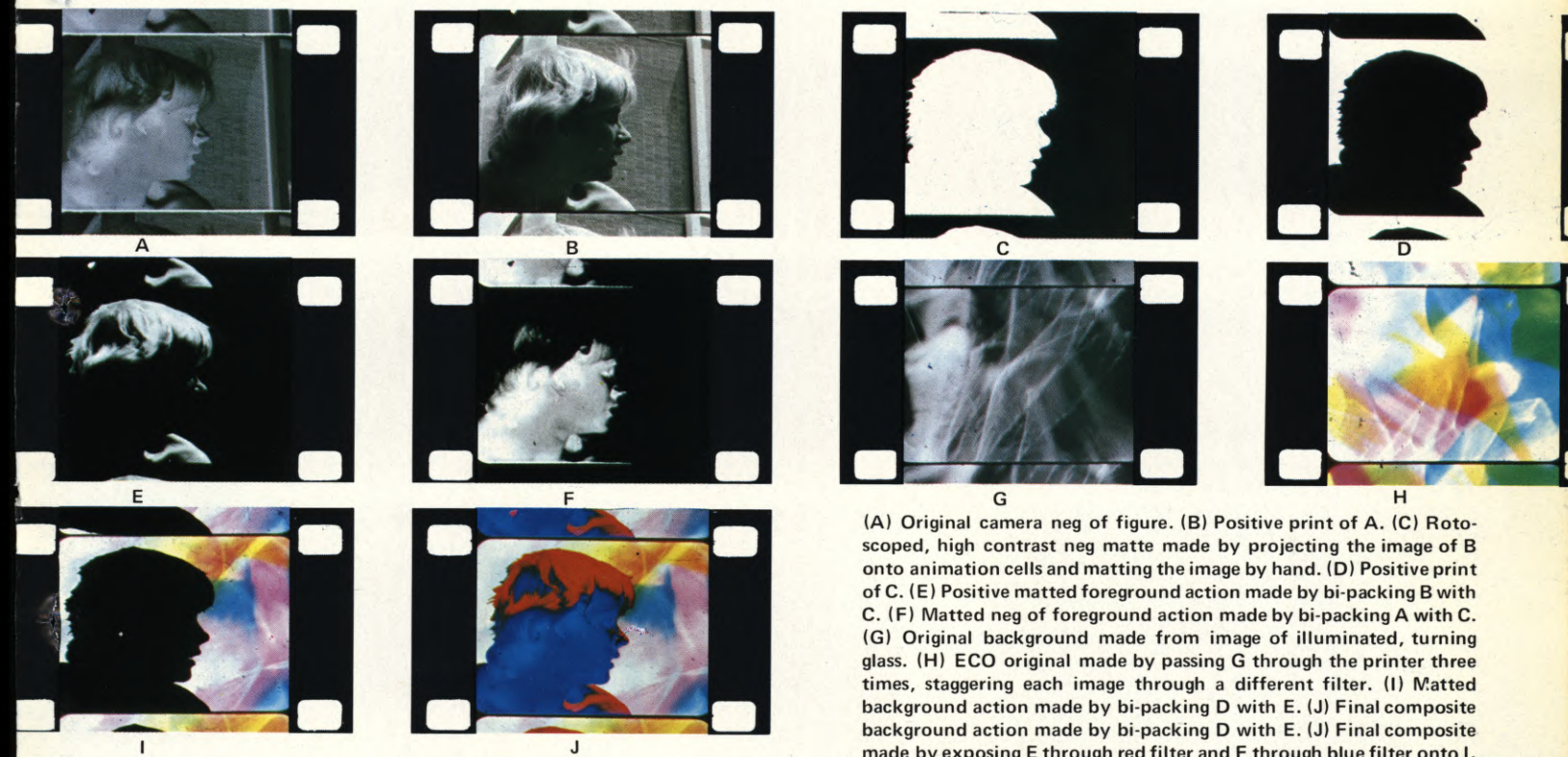




(A) Camera original, female matte of silhouetted figure. (B) Positive matte made from A. (C) Original reversal background of glass image. (D) ECO composite made by bi-packing C with B and exposing it to A through a red filter.



(A) High contrast negative. (B) High contrast positive. (C) Rotoscoped high contrast neg matte of band. (D) Final composite made by exposing A through a blue filter, B through a red filter, and C through a red filter, but overexposing 8 stops to get glow.



(A) Original camera neg of figure. (B) Positive print of A. (C) Rotoscoped, high contrast neg matte made by projecting the image of B onto animation cells and matting the image by hand. (D) Positive print of C. (E) Positive matted foreground action made by bi-packing B with C. (F) Matted neg of foreground action made by bi-packing A with C. (G) Original background made from image of illuminated, turning glass. (H) ECO original made by passing G through the printer three times, staggering each image through a different filter. (I) Matted background action made by bi-packing D with E. (J) Final composite background action made by bi-packing D with E. (J) Final composite made by exposing E through red filter and F through blue filter onto I.

opaque it so that the surrounding gray square of the transparency would not show as I zoomed in on it. The matte was made on an animation cell, and mounted against the transparency. Once this was done, I mounted the transparency and matte onto a glass window on the front side of a four-foot-square box containing a 250-watt photoflood. Between the photoflood and the window,

I mounted a piece of frosted glass to diffuse the light. I placed the camera about thirty feet from the box and adjusted the zoom lens to 12mm so that the transparency of the earth looked like a tiny star. I zoomed in on it during the take and then, after finishing the shot, I moved the camera in closer to the box and zoomed the lens out to 12mm to match the size of the last shot

which had ended in a telephoto position. I repeated the entire process until I was at last about four inches from the transparency with +3 and +1 diopters over the lens. This was the last take, and I zoomed in and panned the camera very carefully across the transparency to the dark side of the earth to give the effect of the camera crashing into it.

Continued on Page 428

(A) Positive print of figures, made from original high contrast female matte. (B) Kodachrome original of bubble. (C) Negative of B, printed on 7385 stock. (D) ECO composite made by bi-packing high contrast female matte with C, and A with B.



**“We knew whatever the cold conditions,
our Arriflex would keep turning...
we never had a freeze-up...we never lost a shot”**

Brian Probyn, Director of Photography

“DOWNHILL RACER”

A man, alone, whizzes by at 80 miles per hour, bereft of any protection against bone-cracking collision, riding two slender slats, defying the glare, the slips, the skids and the possibility of death that form his wager against the glory of championship. He is the professional skier, and portrayed by Robert Redford in the Paramount feature, “Downhill Racer”, his story is told with realism, candor and honesty.

In their striving for artistic integrity, the production company shot every scene on location in the world's most jarring ski courses—Kitzbuhel and Wengen in Europe, and on training courses in Colorado. To describe some of the set-ups as inaccessible would be to understate. Wrote Director of Photography, Brian Probyn in “American Cinematographer”, “sometimes we'd have to walk through snow up to our waists, but that was the easy jaunt, going uphill. Coming downhill was something else again, for it's often almost perpendicular. Sometimes the continuity girl refused to go and had to be sort of handed down. Skiing was often the only way to get places, but since very few of us were skiers, there was sometimes nothing else to do but to slide down on your bottom and hope for the best. It's a bit hair-raising to watch your favorite camera coming down that way”.

Two Frenchmen, the twin brothers Jean-Paul and Jean-Pierre Janssen and skier Joe Jay Jalbert, were contracted to capture authentic skiing footage that would intercut with the staged action, contributing to the production's documentary flavor. Of the brothers, Mr. Probyn wrote, “they would do just about anything to get exciting shots. A bloke would be ready to leave off at the start of a race and he'd look down to find that one of the Janssens would be sticking a camera under his skis or between his crotch or somewhere”.

Freezing temperatures, grueling terrain, set-ups that were exhausting to reach, and still the requirement for absolutely professional footage with a realistic feel—the demands upon the cameras were as great as those upon the crew. “We used every form of camera,” said Director Michael Ritchie, “but the workhorse was the Arri 35. For interiors in which we wanted the operator to be able to work the zoom himself, we used the blimped Arri 16S” whose footage was blown up to 35mm. “We rolled over 200,000 feet of film through our Arriflexes and never had a problem”.

Mr. Probyn, veteran of such features as “Poor Cow”, confirmed his director's praise. “We knew that whatever the cold conditions, the cameras would keep turning without snapping the film. We never did have a freeze-up. Our top competitive skier went down the courses at speeds up to 70 mph, carrying an Arriflex. The camera stood up to the tremendous bumps and jolts—we never lost a shot.”

None of this will surprise the world's thousands of Arriflex devotees. They, like the crew of this terse, exciting and realistic feature, have learned that the time to go with Arriflex is when the going gets rough.

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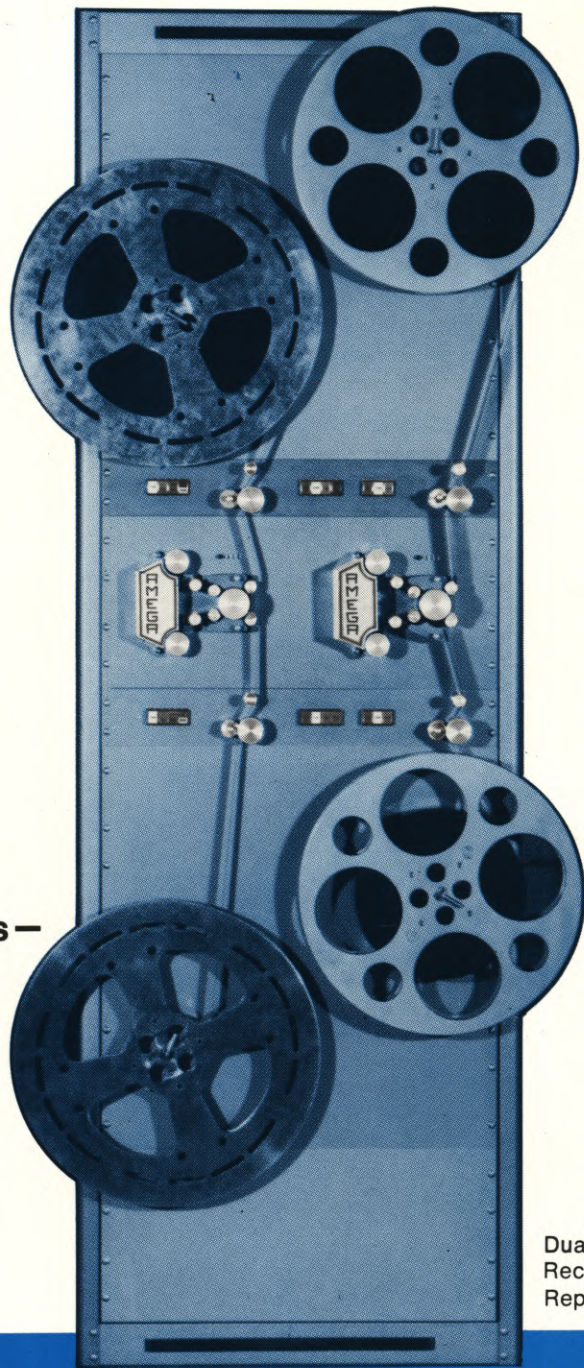


Professional Skier, Joe Jay Jalbert shoots tight close-up of Robert Redford.

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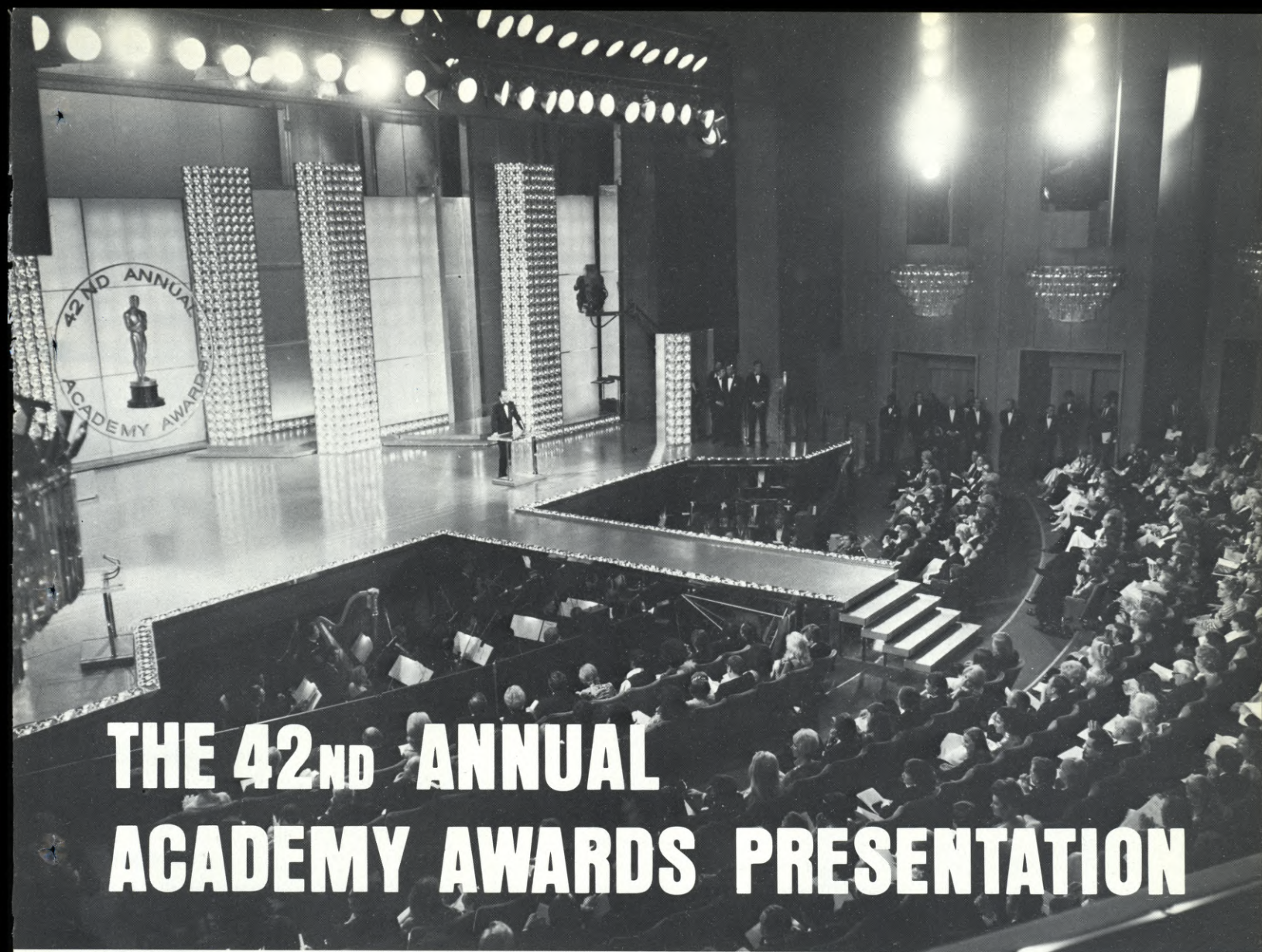
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THE 42ND ANNUAL ACADEMY AWARDS PRESENTATION

Hollywood puts its best foot forward and expresses faith in its future by staging the most sparkling Awards presentation yet

On the night of April 7, at the Dorothy Chandler Pavilion of the Los Angeles Music Center, Hollywood rose from the ashes under which the crepe-hangers had already buried it and did itself proud. The 42nd Annual Academy Awards Presentation, most hands agree, was the best yet. It was a fast-paced, beautifully staged, sincere and exciting production—in short, a helluva show—and all those associated with it can be justly proud of the result.

As Academy President Gregory Peck pointed out, the show was being telecast live and by satellite directly to 250,000,000 viewers in the United States and several foreign countries—and the Hollywood film colony didn't let them down.

There were well-earned awards

(“MIDNIGHT COWBOY” as Best Picture) and sentimental awards (John Wayne as Best Actor), but for those of us optimistic enough to believe in a new and far more productive Hollywood film industry just up ahead, the significant statements were made by Cary Grant in the moving acceptance speech for his special “Oscar” when he spoke of “a more glorious era right around the corner” with more production in the hands of a new generation of filmmakers. And, lest we forget, he reminded us that “ours is a collaborative medium. We all need each other.”

Of prime interest to readers of *Amer-*

Conrad Hall, ASC, winner of the Best Achievement in Cinematography “Oscar” for his inspired photography of “BUTCH CASSIDY AND THE SUNDANCE KID”.





(LEFT) Cheering fans in bleachers outside the Dorothy Chandler Pavilion greet their favorites during the parade of stars preceding the Awards Presentation. (CENTER) Cinematography Award winner Conrad Hall, ASC, enters the Pavilion escorting Katherine Ross, lovely star of "BUTCH CASSIDY" and "THE GRADUATE". (RIGHT) Backstage in the Press Room "nerve center" the winners are chalked up on a giant blackboard.

ican Cinematographer was the Oscar awarded to a jubilant Conrad Hall, ASC, for Best Achievement in Cinematography, as a result of his wonderfully versatile and dramatically powerful lensing of "BUTCH CASSIDY AND THE SUNDANCE KID" (see story on Page 436). Twice nominated in previous years, Hall expressed his joy at winning with an honesty familiar to those who know him well.

Important, also, to those of us who are primarily camera-minded was the Special Visual Effects statuette awarded to Robie Robinson for his stunning outer space blue-screen effects in the

Columbia thriller, "MAROONED".

Omitted from the show as usual (because they lack the glamor of the other awards) were the presentations of Statuettes and Plaques for Scientific or Technical achievement. To the quiet craftsmen behind the cameras these accomplishments are far more significant than the splashier honors heaped upon actors, directors, writers, etc.

And so, it is with pride in the technicians of our industry, those largely unsung heroes of the drawing boards and laboratories, that we call attention to the following Scientific or Technical Awards, as voted by the Academy board

of Governors, upon recommendation of the Scientific or Technical Awards Committee:

Class I (Academy Statuette)

None

Class II (Academy Plaque)

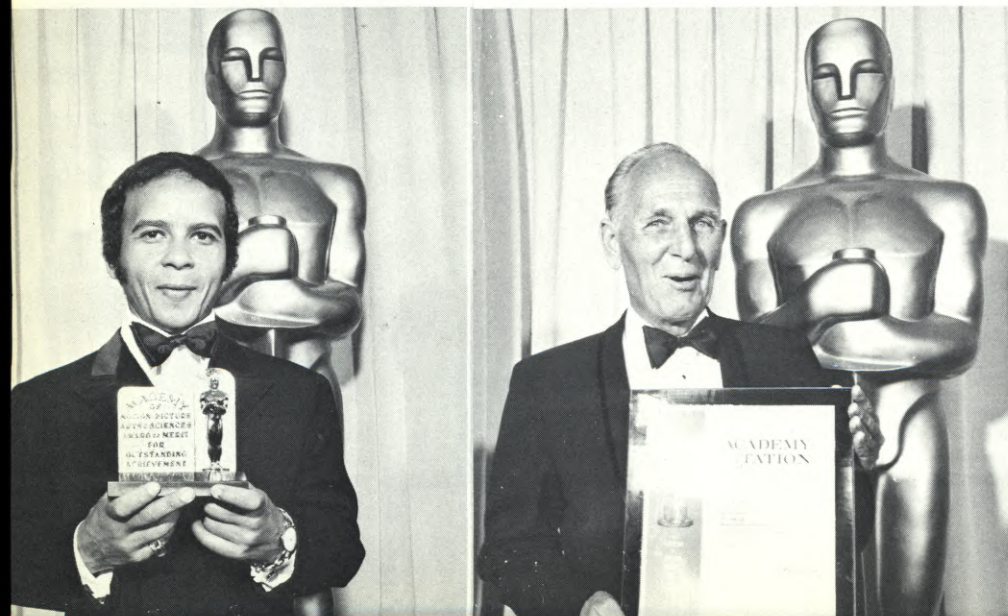
To Hazeltine Corporation for the design and development of the Hazeltine Color Film Analyzer.

This motion picture color film analyzer employs a cathode ray tube by which color quality can be observed and desired corrections made that relate directly to the printing process. In design and operation the analyzer exhibits a high degree of engineering skill using solid state circuitry to provide reliability and stability with faithful correlation to the color print.

To Fouad Said for the design and introduction of the Cinemobile series of equipment trucks for location motion picture production.

These mobile carriers are integrated units which transport motion picture production equipment and personnel to locations. The overall design is modular and provides easy and rapid access to camera, electric, sound, and grip compartments. The trucks in the series differ in size and exhibit the high degree of engineering merit important to the progress of the industry.

Two of the winners in the Scientific or Technical Awards categories. (LEFT) Fouad Said with Class II Academy Plaque awarded for the design and introduction of the Cinemobile location trucks. (RIGHT) Fenton Hamilton with Class III Academy Citation for the concept and engineering of a mobile battery power unit for location filming.



To Juan De La Cierva and Dynasciences Corporation for the design and development of the Dynalens optical image motion compensator.

This device attaches to a motion picture camera lens and compensates for unwanted camera movement in mobile photography. The Dynalens is a gyroscopically servocontrolled fluid prism in which correction for parasitic motion is introduced in the optical path by controlled refraction of light.

Class III (Academy Citation)

To Otto Popelka of Magna-Tech Electronics Co., Inc., for the development of an Electronically Controlled Looping System.

This computer control in a dialogue replacement system automates operational instructions such as start, stop, and repeat thereby reducing time, tedium and expense in post-synchronization operation.

To Fenton Hamilton of Metro-Goldwyn-Mayer Studios for the concept and engineering of a mobile battery power unit for location lighting.

Location lighting generator noises prevent the recording of usable sound tracks unless the generator is remotely located and baffled. This mobile battery replaces the generator unit providing noiseless power during photography. It consists of lead acid battery banks with a small generator for rapid recharging during scene changes.

To Panavision Incorporated for the design and development of the Panaspheed Motion Picture Camera Motor.

This silent camera motor has an electronic control which maintains constant speed of such accuracy that synchronism with a crystal controlled sound recorder can be maintained without connecting cables. The control is adjustable so that the motor may also be operated at variable speeds.

To Robert M. Flynn and Russell Hesty of Universal City Studios, Inc. for a machine-gun modification for motion picture photography.

This modification of the .50 calibre machine-gun features malfunction-free operation and provides synchronization of its firing with the camera shutter, either by wire or radio. It may be operated in close-ups without firing or when photographed, the color and length of flame can be predetermined.

ACADEMY AWARD WINNERS FOR CINEMATOGRAPHY—1928 to 1969

Year	Class	Cameraman	Picture Title	Studio
1969		Conrad Hall, ASC	"Butch Cassidy and the Sundance Kid"	20th-Fox
1968		Pasqualino De Santis	"Romeo and Juliet"	Para.
1967		Burnett Guffey, A.S.C.	"Bonnie and Clyde"	WB-7 Arts
1966	B&W	Haskell Wexler, A.S.C.	"Who's Afraid of Virginia Woolf?"	WB
1966	Color	Ted Moore, B.S.C.	"A Man For All Seasons"	Col.
1965	B&W	Ernest Laszlo, A.S.C.	"Ship of Fools"	Col.
1965	Color	Freddie Young, B.S.C.	"Doctor Zhivago"	MGM
1964	B&W	Walter Lassally	"Zorba the Greek"	Fox
1964	Color	Harry Stradling, A.S.C.	"My Fair Lady"	WB
1963	B&W	James Wong Howe, A.S.C.	"Hud"	Para.
1963	Color	Leon Shamroy, A.S.C.	"Cleopatra"	Fox
1962	B&W	Jean Bourgoin, Walter Wottitz	"The Longest Day"	Fox
1962	Color	Freddie Young, B.S.C.	"Lawrence of Arabia"	Col.
1961	B&W	Eugene Shuftan	"The Hustler"	Fox
1961	Color	Daniel Fapp, A.S.C.	"West Side Story"	U.A.
1960	B&W	Freddie Francis	"Sons and Lovers"	Fox
1960	Color	Russell Metty, A.S.C.	"Spartacus"	Univ.
1959	B&W	William Mellor, A.S.C.	"Diary of Anne Frank"	Fox
1959	Color	Robert Surtees, A.S.C.	"Ben-Hur"	MGM
1958	B&W	Sam Leavitt, A.S.C.	"The Defiant Ones"	U.A.
1958	Color	Joseph Ruttenberg, A.S.C.	"Gigi"	MGM
1957	One award	Jack Hildyard	"Bridge on the River Kwai"	Col.
1956	B&W	Joseph Ruttenberg, A.S.C.	"Somebody Up There Likes Me"	MGM
1956	Color	Lionel Lindon, A.S.C.	"Around the World in 80 Days"	Todd-U.A.
1956	Effects	John Fulton, A.S.C.	"The Ten Commandments"	Para.
1955	B&W	James Wong Howe, A.S.C.	"The Rose Tattoo"	Para.
1955	Color	Robert Burks, A.S.C.	"To Catch a Thief"	Para.
1955	Effects	John Fulton, A.S.C.	"Bridge at Toko-Ri"	Para.
1954	B&W	Boris Kaufman, A.S.C.	"On the Waterfront"	Col.
1954	Color	Milton Krasner, A.S.C.	"Three Coins in the Fountain"	Col.
1953	B&W	Burnett Guffey, A.S.C.	"From Here to Eternity"	Col.
1953	Color	Loyal Griggs, A.S.C.	"Shane"	Para.
1952	B&W	Robert Surtees, A.S.C.	"The Bad and the Beautiful"	MGM
1952	Color	Winton Hoch, A.S.C.	"The Quiet Man"	Argosy
1951	B&W	William Mellor, A.S.C.	"A Place in the Sun"	Para.
1951	Color	Alfred Gilks, A.S.C.	"American in Paris"	MGM
1950	B&W	John Alton	"The Third Man"	British
1950	Color	Robert Krasker	"King Solomon's Mines"	MGM
1949	B&W	Robert Surtees, A.S.C.	"Battleground"	MGM
1949	Color	Paul Vogel, A.S.C.	"She Wore a Yellow Ribbon"	R.K.O.
1948	B&W	Winton Hoch, A.S.C.	"The Naked City"	U-I
1948	Color	William Daniels, A.S.C.	"Joan of Arc"	R.K.O.
1948	Color	Joseph Valentine, A.S.C.	"Joan of Arc"	R.K.O.
1948	Color	William V. Skall, A.S.C.	"Joan of Arc"	R.K.O.
1947	B&W	Winton Hoch, A.S.C.	"Great Expectations"	Rank-U-I
1947	Color	Guy Green	"Black Narcissus"	Rank-U-I
1946	B&W	Jack Cardiff	"Black Narcissus"	Rank-U-I
1946	B&W	Arthur Miller, A.S.C.	"Anna and King of Siam"	Fox
1946	Color	Charles Rosher, A.S.C.	"The Yearling"	MGM
1946	Color	Leonard Smith, A.S.C.	"The Yearling"	MGM
1945	B&W	Arthur Arling, A.S.C.	"Picture of Dorian Gray"	MGM
1945	Color	Harry Stradling, A.S.C.	"Picture of Dorian Gray"	MGM
1945	Effects	Leon Shamroy, A.S.C.	"Leave Her to Heaven"	Fox
1945	Effects	John Fulton, A.S.C.	"Wonder Man"	Para.
1944	B&W	Joseph LaSelle, A.S.C.	"Laura"	Fox
1944	Color	Leon Shamroy, A.S.C.	"Wilson"	Fox
1943	B&W	Arthur Miller, A.S.C.	"Song of Bernadette"	Fox
1943	Color	Hal Mohr, A.S.C.	"Phantom of the Opera"	Univ.
1942	B&W	W. Howard Greene, A.S.C.	"Mrs. Miniver"	MGM
1942	Color	Joseph Ruttenberg, A.S.C.	"Mrs. Miniver"	MGM
1942	Effects	Leon Shamroy, A.S.C.	"The Black Swan"	Fox
1942	Effects	Farciot Edouart, A.S.C.	"Reap the Wild Wind"	Para.
1941	B&W	Arthur Miller, A.S.C.	"How Green Was My Valley"	Fox
1941	Color	Ernest Palmer, A.S.C.	"Blood and Sand"	Fox
1941	Effects	Ray Rennahan, A.S.C.	"Blood and Sand"	Fox
1940	Effects	Farciot Edouart, A.S.C.	"I Wanted Wings"	Para.
1940	B&W	George Barnes, A.S.C.	"Rebecca"	Selznick
1940	Color	Georges Perinal	"Thief of Bagdad"	Korda
1939	B&W	Gregg Toland, A.S.C.	"Wuthering Heights"	Goldwyn
1939	Color	Ernest Haller, A.S.C.	"Gone with the Wind"	Selznick-MGM
1939	Color	Ray Rennahan, A.S.C.	"Gone with the Wind"	Selznick-MGM
1938	Effects	Joseph Ruttenberg, A.S.C.	"The Great Waltz"	MGM
1937	Effects	Farciot Edouart, A.S.C.	"Spawn of the North"	Para.
1936	Effects	Karl Freund, A.S.C.	"The Good Earth"	MGM
1935	Effects	Tony Gaudio, A.S.C.	"Anthony Adverse"	WB
1935	Effects	Hal Mohr, A.S.C.	"Midsummer Night's Dream"	WB
1934	Effects	Victor Milner, A.S.C.	"Cleopatra"	Para.
1933	Effects	Charles B. Lang Jr., A.S.C.	"A Farewell to Arms"	Para.
1932	Effects	Lee Garmes, A.S.C.	"Shanghai Express"	Para.
1931	Effects	Floyd Crosby, A.S.C.	"Tabu"	Para.
1930	Effects	William Van Der Veer	"With Byrd at the So. Pole"	Para.
1929	Effects	Joseph T. Rucker	"White Shadows in the So. Seas"	MGM
1928	Effects	Clyde DeVinna, A.S.C.	"Sunrise"	Fox
1928	Effects	Charles Rosher, A.S.C.	"Sunrise"	Fox
1928	Effects	Karl Struss, A.S.C.	"Sunrise"	Fox



The magnificent Dorothy Chandler Pavilion of the Los Angeles Music Center takes on an aura of special magic on Academy Awards night.

THE STORY OF "OSCAR"

That classic golden statuette awarded by their peers is still the highest accolade to motion picture artists and technicians

High among the biggest international news stories of any year is the annual Awards Presentation of the Academy of Motion Picture Arts and Sciences—the Oscar Awards.

On his big night, Oscar reaches more than 30,000,000 homes in the United States and Canada on the combined television networks of the American Broadcasting Company and the Canadian Broadcasting Corporation, and news of the Awards is carried to every corner of the world by a corps of more than 500 press representatives of all media.

Those 500 newsmen and women outnumber by twice the total attendance at the first Academy Awards ceremony, held May 16, 1929, at the Hollywood Roosevelt Hotel. Only 250 people attended that first ceremony. It was slighted by the press and totally ignored by radio.

The Academy of Motion Picture Arts and Sciences came into being on May 4, 1927, when 36 leaders of the burgeoning film industry met and organized the Academy as a non-profit corporation, dedicated to the ideal of enhancing the cultural, educational, and technical progress of motion pictures.

A week later, on May 11, more than

300 gathered at an industry banquet at the Biltmore Hotel. Douglas Fairbanks, the Academy's first president, was moderator. Talks were presented by such industry leaders as Louis B. Mayer, Joseph M. Schenck, Will Hays, Mary Pickford, Cecil B. DeMille, Frank Lloyd, and Conrad Nagel.

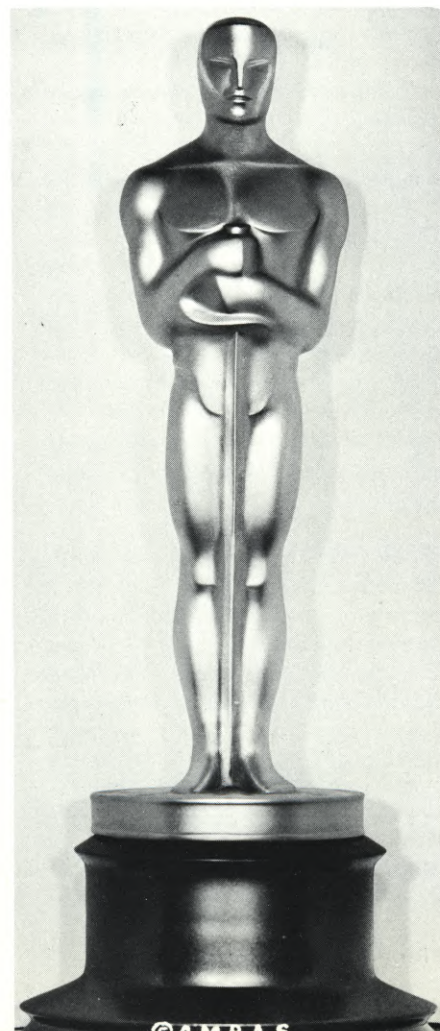
Mayer suggested that the Academy could focus attention on cinematic achievements by presenting awards of merit. Conrad Nagel agreed, saying "Whatever we give, it should be a symbol of continuing progress—militant, dynamic."

One man was inspired: art director Cedric Gibbons began sketching a figure on the tablecloth. It was that of a stalwart man, standing on a reel of film and holding a crusader's sword. He later put his idea on paper and a sculptor, George Stanley, molded the figure.

Oscar has remained unchanged to this day though the base on which he stands has been raised to give better proportion to the design.

In that first formative year, it took time for events to move; it was January, 1929, before voting was conducted for achievements during the year which ended July 31, 1928. The results were

Continued on Page 475



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So when we introduced the 635A we put it to a critical test. A major recording studio was loaned a dozen 635A's and asked to test them. The engineers weren't told the price, but they got the idea that it was somewhere near \$300.00.

They were so delighted with the sound

that they cut several big band recordings with nothing but 635A's. “Best \$300.00 microphone we've got.” Then we told them the price. They were shocked. They couldn't believe their ears.

Meanwhile, 635A's were beginning to appear in force on music and variety shows on every TV network. Mostly hand held. Something to do with ruggedness and good balance... but mostly because of the sound. Especially during ultra-close miking.

The rest is history. Radio and TV newsmen quickly adopted the 635A as

their new “workhorse”. After all, news only happens once, and the 635A was their best insurance against bad sound.

To most professional sound engineers, the E-V 635A is already an old friend, although it's only been around since 1965.

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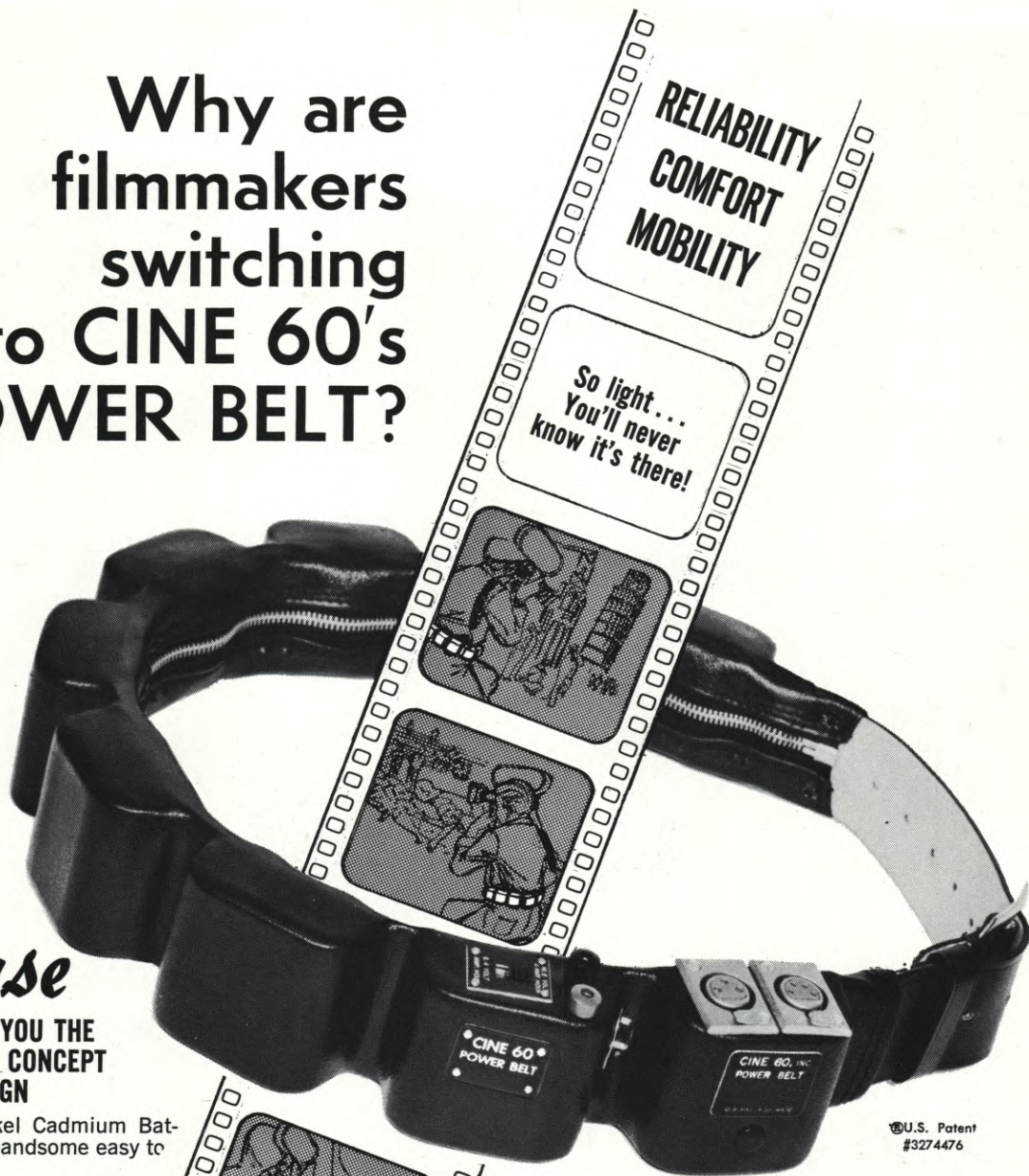
MODEL 635A Omnidirectional dynamic. Response 80—13,000 Hz. Output—55db. Balanced low impedance. Includes Model 310A stand clamp and lavalier neck cord. Fawn beige Micomatte finish. \$88.00 list, less normal trade discounts

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Goodbye to jerky starts. **Goodbye** to mid-zoom hesitation. **Hello** to long, steady zooms. If you have been afraid to simulate dolly moves, forget it . . . Cinema Product's two new "Joy Stick" zoom controls (integrated J2 for sound stage use, and the J3, the "one armer," for documentary and one man camera crews . . . tapes to panhandle) practically eliminate dollies.

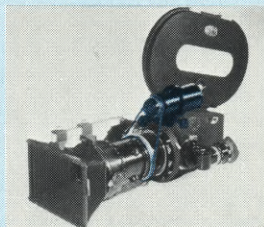


Eclair,

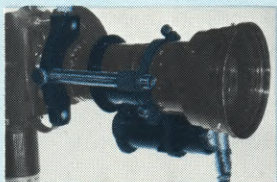
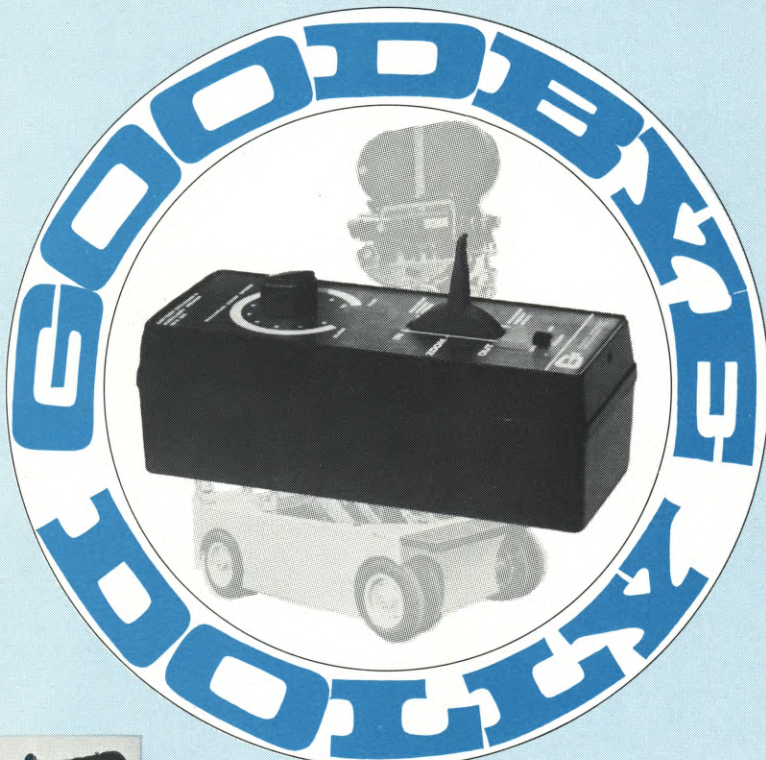
Steady zooms are guaranteed at all speeds, because drive unit incorporates an exclusive feedback generator to accurately sense speed and torque demands. Motor provides all the torque needed for constant zoom even with rough spots on lens. This unique servo feedback system assures smooth performance not heretofore available; from 1½ seconds to 1½ minute zooms, a 60

to 1 ratio.

Max rate knob is set to desired speed. By gradually pushing "Joy Stick" in desired direction, you then have continuously variable control from zero at



Arri BL



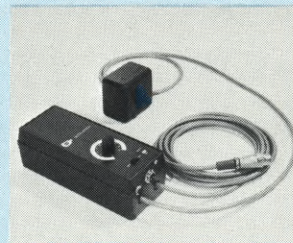
Arri

mid-position to the pre-set maximum speed in either direction, and you can "feather" on and off zooms that result in gradual starts and stops to duplicate dolly performance. All TV shows at Universal and Paramount are photographed with "Joy Stick" zoom controls. Cinema Product "Joy Stick" controls



Mitchell

meet sound stage requirements for silence at all zoom speeds of 5 seconds or slower for full zoom. Bracketry available for use with 3 lenses . . . Angenieux 12-120mm and 12-240mm (16mm format) and 25-250mm (35mm format) and cameras such as Eclair, Arriflex 16, Arri BL (16mm) and Arri and Mitchell (35mm). Highly efficient motor and large capacity, internal rechargeable battery guarantee all day shooting without auxiliary power.



J3,

Goodbye Dolly.

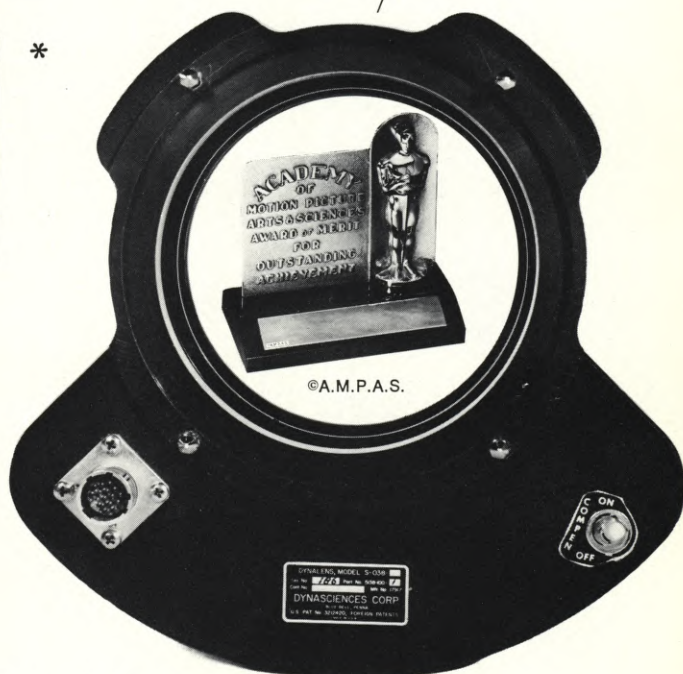
Detailed specifications available. Samuelson Film Service in Europe; Victor Duncan in the Midwest.



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**Class II Scientific or Technical Award to Juan de la Cierva and Dynasciences Corporation for the design and development of the Dynalens Optical Image motion compensator.*



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A1



A2



A3



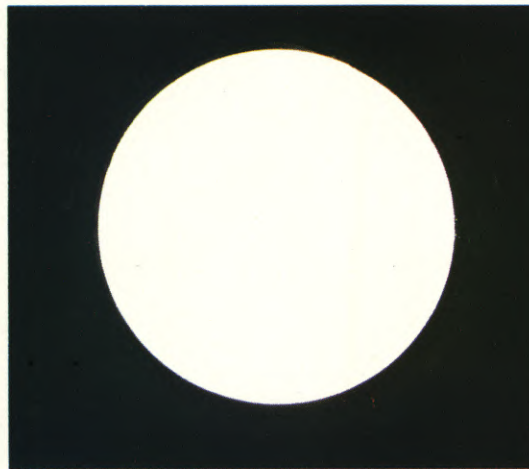
B1



B2



B3



Two examples of the 2 1/4 x 2 1/4 (still) composite shots used in the film: (A1) High contrast litho positive of building. (A2) Background shot of sunrise. (A3) Final composite made by sandwiching A1 and A2. (B1) High contrast litho positive of tower. (B2) Background of sun-tinted clouds. (B3) Composite of B1 and B2.

(FAR LEFT) Long shot of the earth, taken during one of the Apollo missions. (LEFT) Matte used to obscure everything except the earth, thus insuring an opaque black background for the shot.

MAKING OF "OMEGA"

Continued from Page 415

Through a series of A and B roll dissolves, the earth begins as a point of light, becoming larger until it fills the entire screen.

One of the main problems of photographing the transparency was the heat generated from the lamp. The box was really no more than an oven, for after

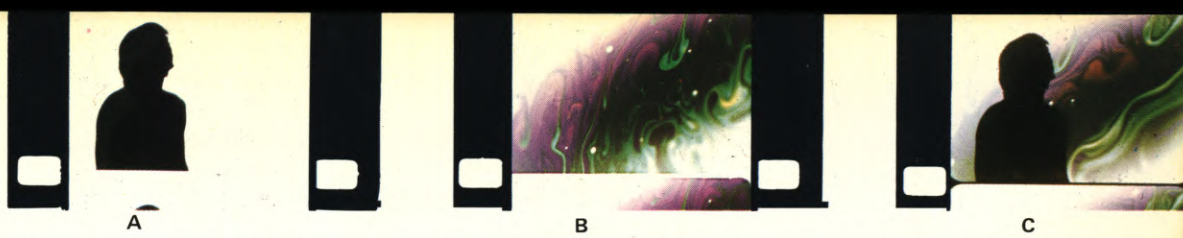
the lamp had been left on for any length of time the glass window became so terribly hot that the transparency would buckle and warp under the heat. After each take I turned off the lamp, but the box still retained the heat, so that every so often I would have to remove the transparency and let the glass cool off. Of course, once I was in close enough so that the front of the box filled the frame, I was able to remove the back

and sides to let the heat dissipate more quickly. For the panning shot at the end of the sequence, I used a fluid head tripod which I found to be absolutely necessary in shooting all pans and tilts for the film.

One sequence which gave me particular trouble was the sunrise near the beginning of the film, in which I wanted to show futuristic buildings with a silhouette effect. I placed the cutout

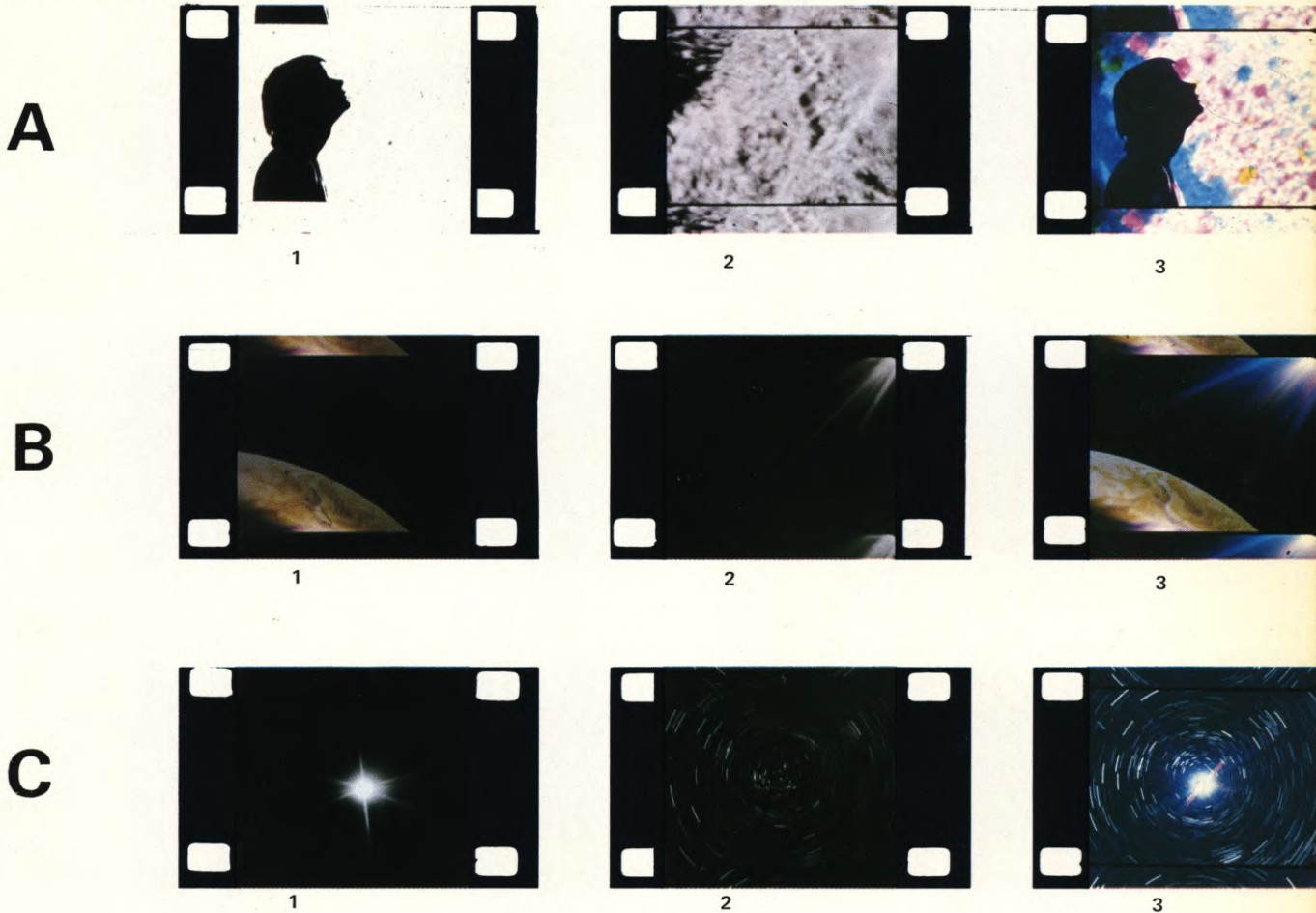
Several composite stills used in the film: (LEFT) Building silhouetted against an early morning sky. (CENTER) Top of the tower silhouetted against clouds. (RIGHT) A group of plants silhouetted against sunrise clouds.





Frame blow-ups of the separate stages used in producing various effects: (A) Positive male matte of silhouetted figure. (B) Negative of Kodachrome shot of the bubble surface. (C) Final ECO composite made by bi-packing A and B.

Progression of various effects: (A1) High contrast male matte of figure. (A2) Plus-X reversal original of background shot of turning glass. (A3) Final composite made by bi-packing A1 with A2, and phasing A2 through the printer three times through three different filters. (B1) Kodachrome shot of the surface of the bubble. (B2) Plus-X reversal shot of rays. (B3) ECO composite made by superimposing B1 over B2 while phasing B2 in the printer. (C1) Original reversal shot of "star". (C2) Reversal shot of "stars" spinning. (C3) Final composite made by superimposing C1 and C2, while phasing C2.

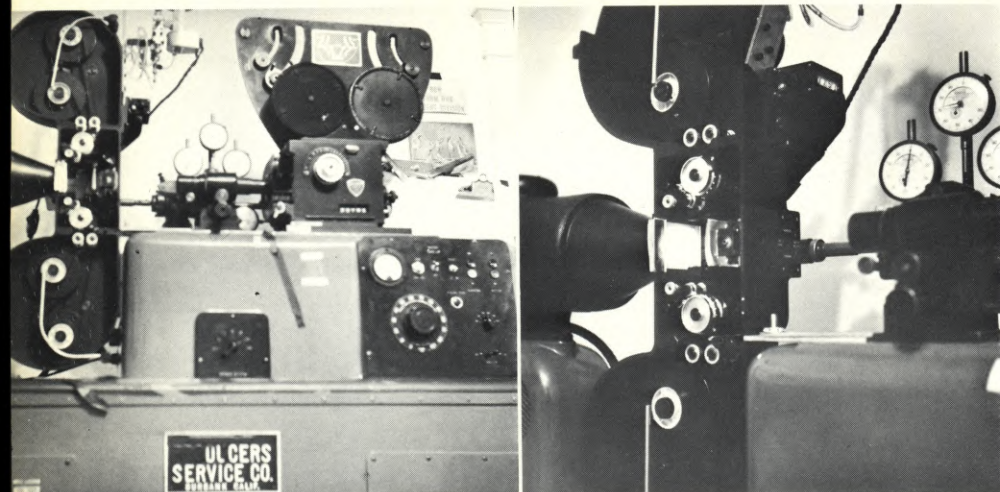


(A) Camera original high contrast female matte of silhouetted figures. (b) High contrast male matte made from A. (c) Reversal shot of "stars" spinning. (D) Final composite made by bi-packing B with C and exposing A onto D through a red filter.



(A) Camera original high contrast negative matte. (B) High contrast positive matte made from A. (C) ECO background made from phasing black and white images of a glass object. (D) ECO composite made by bi-packing B with C and exposing it through a red filter.





(LEFT) The optical printer used by the author to create all of the optical effects in "OMEGA". (RIGHT) A closer view, showing the projector gate of the printer with light source. Gauges on the camera lens are used for determining the position of the image on the frame.

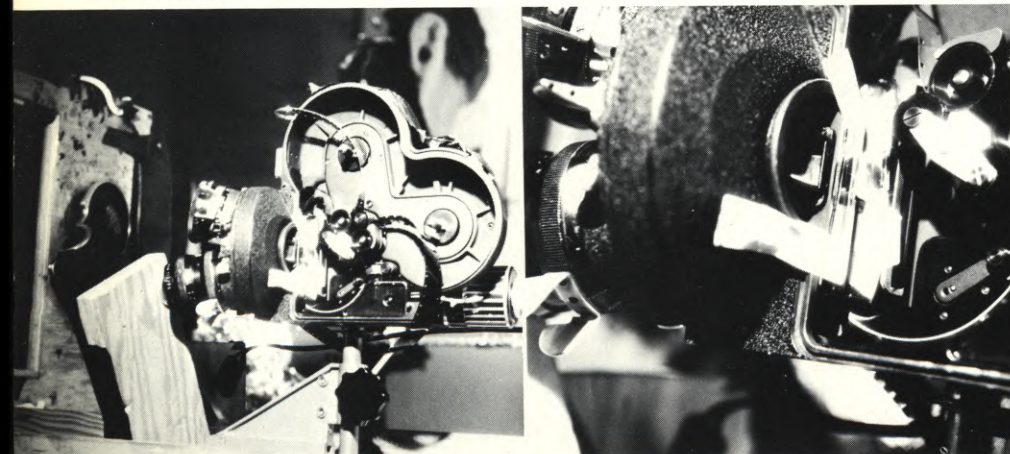
shapes of cardboard in front of a five-foot-square sheet of white cardboard which was illuminated by means of two 1000-watt quartz lamps. I shot them on Plus-X and overexposed the background about 4 stops. Then I had the negatives contact printed onto litho film to give as great a degree of contrast as possible. After selecting the backgrounds and foregrounds that I liked, I was ready to transfer them to 16mm.

In order to photograph the stills onto 16mm film, I had to construct an animation stand. At first I thought that I might be able to use the animation stand at UCLA's animation department, but I was told that that would be quite impossible. I thought out the design rather carefully, and decided that I could spend no more than \$75 to build it, which is quite inexpensive compared to the cost of any professional stand. Of course, my stand was much less complex than the professional models, but it worked nonetheless. I made no provision for moving peg bars on the table,

nor for the camera to move in any direction. The only move that I could make was a zoom with the aid of a zoom lens, but that was all I needed. With the generous help of Warren Hamilton of UCLA I was able to put the thing together in no time. He contributed much to my design in order to make the stand really solid, and once it had been put together, I set out to shoot the 2¼x2¼ transparencies.

For photographing the composite stills, I chose to use a 25mm lens on the Arriflex, plus a diopter. I taped the diopter, which I had picked up in a war surplus store, onto the lens and masked off all the glass area on the table top of the stand except where the transparency would be. By masking off this surrounding area, the lens would not pick up flare from the extraneous light, coming from below. The light source itself was provided by three 1000-watt quartz lamps reflecting off a white cardboard beneath the glass surface. This arrangement generated a tremendous amount

(LEFT) Rotoscoping an Arriflex by placing a glass pressure plate in the gate and taping it in place. (RIGHT) A closer view of the rotoscoping arrangement, showing detail of the mirror and pressure plate.



of heat at the glass surface and made shooting difficult. To photograph a still, I would sandwich a foreground silhouette of a building against a sunrise background and then put them into the unmasked area beneath the lens. Next I would move the two around until I found a composition I liked. Making sure that all dust was removed, I would then set the F-stop and shoot the composite. Of course I had previously tested most of the transparencies for the proper exposure—so that the final take would be correct.* To get the proper mood for certain shots I sometimes would have to use as many as six different transparencies plus various filter combinations. Naturally, this caused considerable light loss, so that many of these shots ended up being exposed at about F/1.4 at 2 fps. This whole sequence was quite difficult to shoot, taking about 80 hours in all.

At this time I would like to say something concerning the types of film stock that I used in the production. For the most part, except for the sunrise, a few shots of the earth, and the bubble, I shot the entire film in black and white. I did this because, by introducing the colors during optical printing, I would have control over the colors that went into each shot—and because there would be less grain and image deterioration in black and white, from generation to generation, than if I were filming in color. The types of film used were: Plus-X Reversal, Plus-X Negative, High Speed Infra-red, 7362 (High Contrast Positive), Ektachrome Commercial, and Kodachrome II.

I tried to use reversal film whenever possible so that I would not have to print to get a positive, for that could introduce registration error. I used the High Speed Infra-red film to photograph clouds in time-lapse and mattes of trees; and I used the 7362 for all of my matte work, whether in the original photography or in the optical printer. It was during the actual optical printing and shooting of the sunrise that I used most of the ECO. (It was actually only after shooting the sunrise that I began to get into real difficulties.)

The production contained several sequences which were especially difficult to make. The first had to do with showing a ray being projected from the earth into outer space. I wanted this to be a zoom shot, pulling back from a close-up of the ray, earth, and stars to a long shot of them. Usually my average

**(As it turned out, almost every shot in the film had to be pre-tested for exposure, whether in the original photography or in the optical printing.)*

shooting ratio for an effect was somewhere around 60:1, but for this shot it came to 100:1, because the shot had to be done in the camera. At first I tried zooming back from each element of the composite with the powered zoom lens, superimposing them over each other in the camera. However, I found that although I thought that I had started each take at the same moment, I would really never get all of the elements to pull back in sync, because of the small variations in starting time. So, finally I wired the camera motor and zoom lens motor into a double-poled switch so that they could be fired at the same instant. But in spite of this, there were still small variations in current, and so the speed from take to take varied. Thus, out of 400 feet of re-shooting the same shot, I got one good take.

My next problem was to show a large

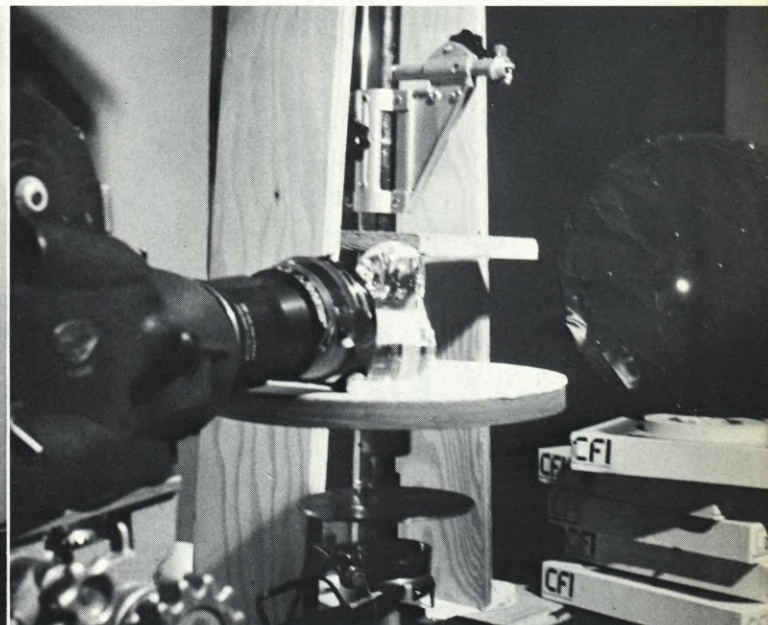
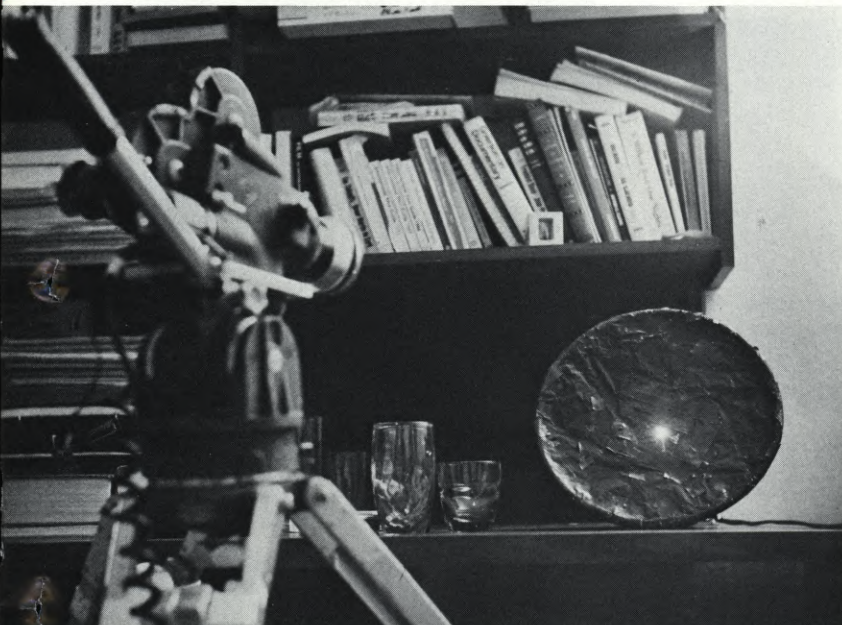
As it turned out, the rays moved away from the "star" in a beautiful pattern.

I made the star background for the sequence in the same manner as I had done the zoom through space, that is, with small holes in the foil. The sun was simply made from a clear circle surrounded with opaque paint on an animation cell, lit from behind, and overexposed about 8 stops. To produce the pan over in the star sequence, I had someone pan the camera to the right as I kept pulling the plastic along. The pan was made at several different speeds to get a variety to choose from. Next, I panned the star background to the right, making several takes at different speeds. Finally, I shot the sun, panning into it several times at various speeds.

After the film was developed, I synchronized these three elements so that they all panned over at the same

projected image about the size of a 12-field animation cell.

I had a special glass pressure plate made to replace the regular one and fitted it with a spring arrangement so that it would keep the film pressed against the aperture. I realized that I would not be able to fit a mirror above the aperture, simply because the 1/8-inch mirror that I was going to use was too thick. So, instead, I used a piece of aluminum foil, which could be fitted right next to the aperture. For a light source I used a small, portable, 100-watt slide projector which I mounted on a piece of board next to the camera. I removed the projection lens from the projector and moved the condensers outside of the case where the projection lens would normally be. Then I took a set of condensers from my 16mm projector and placed them between the



(LEFT) Photographing a "star", which is no more than a hole punched in a sheet of aluminum foil placed over a photoflood reflector. (RIGHT) Photographing a glass object placed on the turntable, using "pinpoint" light source and a 90mm macro lens, with +2 and +3 diopters. A simple device, discovered by accident, it created a scintillating effect on the screen.

star shining brightly out of the star background and then pan over to the sun. Making the star shine was difficult simply because I did not know how to do it. I had previously experimented with pieces of scratched plastic to create rays around a light source. I did not want the rays to remain stationary, but to move off the star into space. I decided that I might try moving the scratched plastic in front of the lens during a take. So, I took a 3-foot piece of plastic, scratched it against a rough surface to create very fine lines, and pulled it across the lens, which was pointing at a small hole in a piece of aluminum foil mounted over the reflector which was holding a 250-watt bulb.

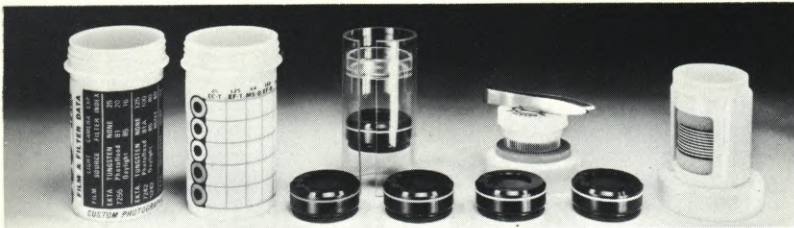
time and at the same speed. I ran them through the printer with the appropriate filters, but the first time they were out of sync, so I re-synchronized them and finally got a good shot.

The most difficult segment of the film was the traveling matte sequence, for in this series of shots I had to rotoscope and matte each frame of a 15-foot length of film, an operation which required 600 drawings. At first I did not know if the rotoscoping would work at all, and I really did not have the proper equipment for this type of work; in fact, all I had was my old R16 Bolex, but I tried it anyway. I mounted the camera on my homemade animation stand at a height that would produce a

condensers of the 100-watt projector and the camera. When the 25mm camera lens was set at F/1.4 I got a fairly bright image on the white paper covering the bed of the stand. I had no animation motor to power my Bolex, nor could I afford to buy one, so I had to use the unimotor, which was not intended for animation, but which worked very well nonetheless.

I loaded the camera with the sequence that I wanted to matte, turned the shutter selector to "time," and connected the cable release to the camera. The procedure for matting was as follows: I would lay a cell on the peg bar and over the sheet of white paper.

Continued on Page 456



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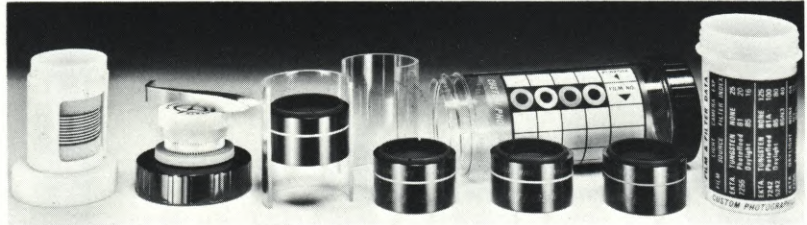
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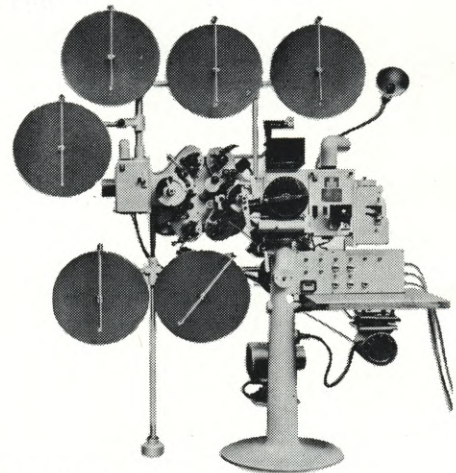
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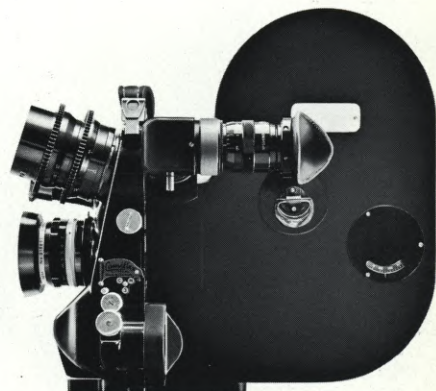
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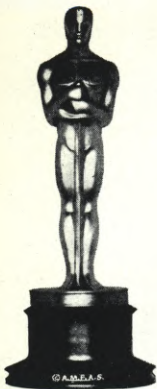
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BEST ACHIEVEMENT IN CINEMATOGRAPHY

“BUTCH CASSIDY AND THE SUNDANCE KID”

Conrad Hall, ASC, awarded coveted “Oscar” as top cinematographer of 1969, discusses challenges and techniques of photographing the winning film

By HERB A. LIGHTMAN

Rattling around in the unaccustomed spaciousness of a 747 “Jumbo Jet” en route across the Pacific, I was told that the in-flight movie to be shown was “BUTCH CASSIDY AND THE SUNDANCE KID”.

I had already seen, and enjoyed, this very entertaining picture twice—but no matter. I have been known to view a really superior film (“CITIZEN KANE”, “SEVEN SAMURAI”) as many as a dozen times, so I was looking forward to another go-round with “BUTCH CASSIDY”. It struck me, however, that it might be interesting this time to watch the picture *without the sound*, so that I might study the purely visual elements (photography and editing) of the production.

I settled back, free of the earphones, and gave myself up to purely visual contemplation of the images that flowed across the screen. Undistracted by dialogue, music and sound effects, I was able, for the first time, to give full attention to the photography, and I was stunned to discover how absolutely *right* each separate scene was in terms of mood, composition, camera movement and lighting. The style varied from raw and gutsy to soft and dreamy as the shifting moods of the action demanded, but it was always exactly appropriate to the specific segment of the story being portrayed.

In my previous two viewings of the film, I had, of course, been aware that it was beautifully photographed, but the photography had not jumped out at me to call attention to itself. Now I realized that this was precisely why it was so very good. The Director of Photography had sublimated his personal ego in favor of dedication toward telling the story in the most provocative and appropriate way. He had done so with the highest degree of professional skill and artistry, but without once calling attention to himself or shouting, in essence, “Look what a jazzy cameraman I am!”

(LEFT) Paul Newman, with willing passenger, Katherine Ross, clowns it up on a bicycle in a lyrically photographed sequence representing a mellow and merry time out of violence. (CENTER) A dramatically composed and lighted scene that takes place inside a box-car during railroad hold-up. (RIGHT) Gutsy photographic treatment is accorded the several sequences of raw violence that dominate the action of “BUTCH CASSIDY AND THE SUNDANCE KID”. The Director of Photography demonstrates his versatility with a wide range of visual styles, each of which is perfectly slanted to the mood and action indicated.

When the picture faded from the screen (somewhere in the neighborhood of Hawaii) I asked the stewardess for stationery and dashed off an impulsive in-flight letter to Conrad Hall, ASC, telling him what a really fine job I thought he had done in photographing “BUTCH CASSIDY”. It was not, God forbid, a fan letter, but simply a note to an old friend, saying: “Well done, buddy!”

On the night of the Academy Awards I encountered him just as he was entering the auditorium with the radiant Katherine Ross on his arm. There were happy hellos and I wished him luck. I saw him again backstage immediately after he had won the coveted “Oscar” and I took a picture of him to capture the moment (see Page 419). He was a lot more surprised that he had won than I was—and clearly on Cloud Nine.

Later in the week, at my request, he flew down to Hollywood from San Francisco to tell me about his part in filming “BUTCH CASSIDY”. In discussing his basic approach toward the photography of the picture, he said:

“I met with the director, George Roy Hill, at the very beginning and we spent a lot of time talking about the script. The story is about two hold-up men who are put out of business by advancing technology—by “Superposses” and banks that have become invulnerable. They try other means of earning a living, but they find they are not suited for anything else—not even the army wants them. So they just keep on going downhill until the final *dénouement*.”

“The objective in the filming was to have this inexorable envelopment of modern technology come over as some sort of symbolic thing, so that the law and advancing technology would be evidenced as symbols, rather than actual, recognizable elements of society. We had to do something visually to





(ABOUT THE DIRECTOR OF PHOTOGRAPHY: CONRAD HALL, ASC, is a graduate of the University of Southern California Cinema Dept., where he studied under the great Russian montage expert, Slavko Vorkapich. After graduation, together with two former classmates, he formed Canyon Films and became a cameraman "by accident" when they drew straws to see who would do the photography on their first color feature, "My Brother Down There", which was made in 18 days on a \$150,000 budget. Later he photographed footage for several Walt Disney nature films including: "The Living Desert" and "Islands of the Sea". He eventually became camera operator for such Directors of Photography as Robert Surtees, ASC, Ted McCord, ASC, Ernest Haller, ASC, Floyd Crosby, ASC, and Hal Mohr, ASC. His first assignment as director of Photography was on the "Stoney Burke" television series, followed by "The

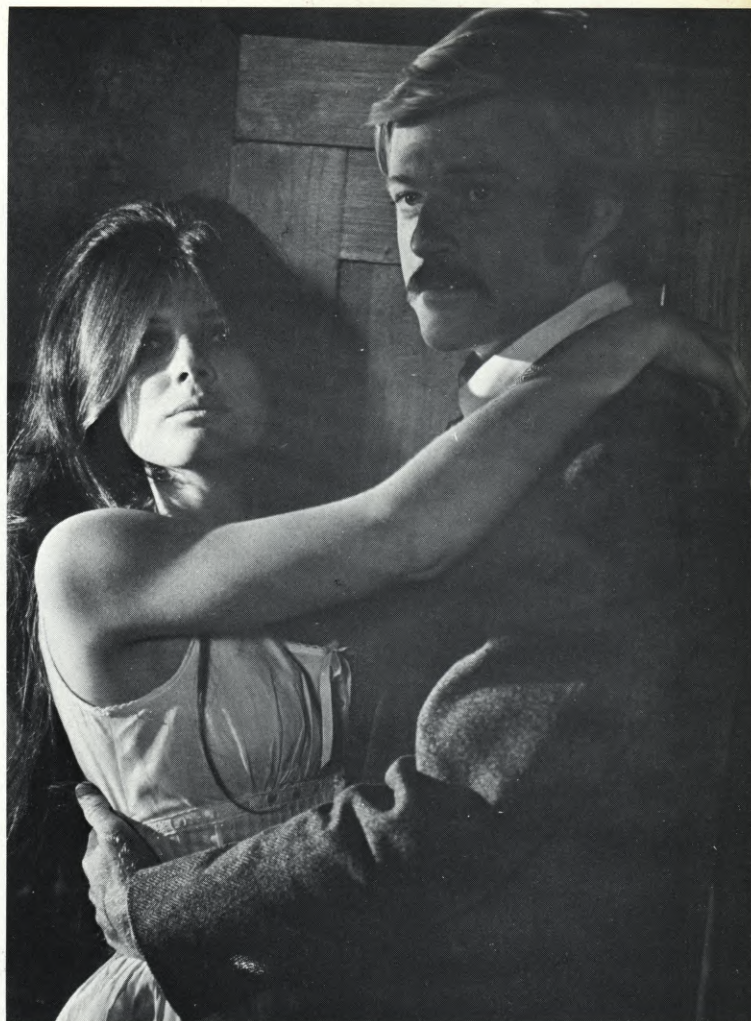
Outer Limits". Hall's feature credits include: "The Wild Seed", "Incubus", "Morituri", "Harper", "The Professionals", "Divorce American Style" and "Cool Hand Luke". He received a 1965 Academy Award nomination for his black and white cinematography of "Morituri" and was nominated again in 1967 for his stunningly dramatic photography on Richard Brooks' filmization of the Truman Capote best-seller, "In Cold Blood", which was shot entirely on location in Kansas and in the other locales where the grisly events actually took place. Since then he has functioned as Director of Photography on "Hell in the Pacific", "The Happy Ending" and "Tell Them Willie Boy Was Here". He is currently preparing to direct his first feature film from his own screenplay based on a William Faulkner novel.)

get this idea across—yet, in terms of action, we still had to have the traditional chase between the desperadoes and the law.

"We talked a lot about it and finally came to the conclusion that the best thing to do was to keep from recognizing any of the members of the Superposse as individuals, to keep them always at a great distance, to keep them moving at a steady, relentless speed, rather than hellbent for election—but never stopped. They are always moving, always coming on, not hurrying, but always overtaking. The men they are chasing stop to rest, but they never rest. They just keep coming. They are, in a way, superhuman.

"I felt that the best way to show this in visual terms was to use an extremely long lens and take advantage of things like heat-wave distortion to make the figures wispy, unrecognizable, yet somehow menacing. I'm not certain that it works all the time, because when you use a long lens there is a tendency to make things very beautiful. The lens throws the background and the foreground out of focus and creates a lovely, dreamy sort of aura that kind of works against anything you show being a menace.

"However, in this case, because the men of the Superposse are all dressed alike, because they are always far away and



Low-key lighting, with barely perceptible fill, goes far in creating an aura of romance in love scenes involving Katherine Ross and Robert Redford. Such sequences, interspersed with violent action, lend the film a dimension of light and shade that boosts it far above the level of the usual Western.

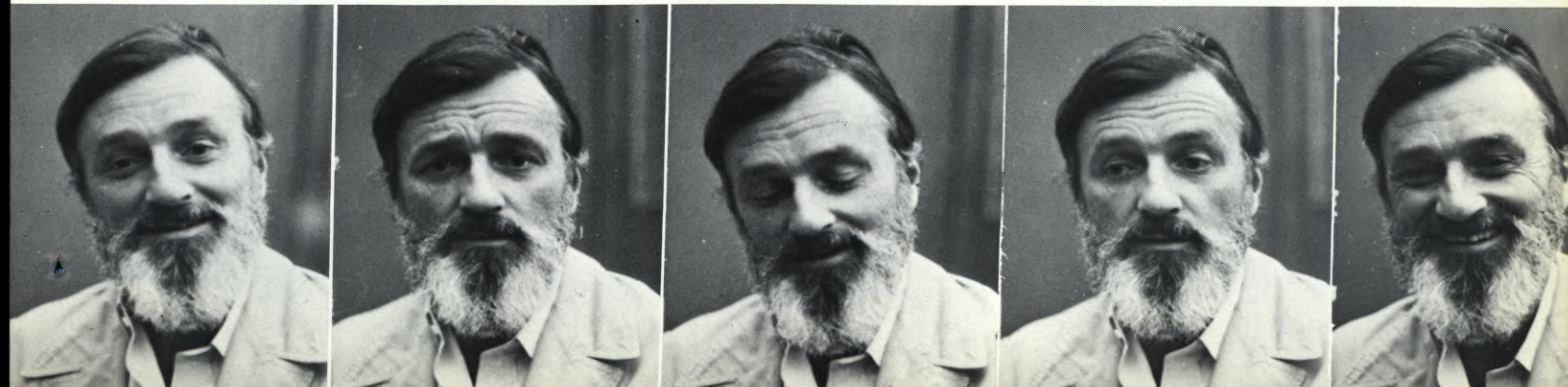
always keep coming, I feel that they actually become a menace. I tried to enhance this impression photographically by keeping them at a distance, enveloping them with dust, distorting them with heat waves and shooting them through out-of-focus leaves and such, in order to have them come over as symbolic rather than real beings."

The lens he used to achieve these effects was Panavision's 50mm-to-500mm Panazoom, racked out all the way.

"I had the attachments to extend the focal length to 1000mm," he comments, "but I didn't feel the need for all those extra millimeters."

While Hall's use of the long focal-length lens just described

Conrad Hall, ASC, expresses many facets of his complex and animated personality as he discusses techniques of filming "BUTCH CASSIDY" with the author. A thorough professional, highly trained in the classic tenets of cinematography, he now dares to break the rules in reaching out for more honest and interesting ways of telling a story on film. In seeming contradiction, he says: "There isn't a single new technique in 'BUTCH CASSIDY', as far as I'm concerned. It's what I've done all my life. Technique varies with each story, and you draw on your experience to try to tell the story as best you can."





(LEFT) Since "BUTCH CASSIDY" is a period piece, much of the interior action takes place supposedly by the light of kerosene lamps. To simulate the source accurately as coming from practical lamps in the scene, while still providing sufficient illumination for color photography, Hall hid peanut-type "gimmick" lights behind the actual flames and dropped the voltage to warm up the color temperature. (CENTER) The effect of a point source with little or no fill light suited the mood of this scene. (RIGHT) Simulated lamplight added much to the aura of romantic scenes.



An apple for the teacher. Katherine Ross, playing a school teacher turned genteel gun-moll, strolls with Cinematographer Hall on location in St. George, Utah. Other locations included Durango and Silverton, Colorado and Taxco and Cuernavaca in Mexico.

is not new (and he would be the last to imply that it *is*), there is one radical technique which he utilized in "BUTCH CASSIDY" that might be considered unique—and even quite dangerous in the hands of anyone but a master technician.

In short, he had deliberately over-exposed some of his exterior scenes *by two full stops* in order to wash some of the "postcard Blue" out of the sky.

"I had become obsessed with the *cliché* of the blue sky," he explained. "They look too pretty—especially in a film that's supposed to be very dramatic. Naturally, when you're shooting out on the desert or up in the mountains you've got a lot of blue sky. I tried my best to get rid of this by over-exposing the film radically and forcing the laboratory to print it back. This pales out the blue to something soft and light, and I could stomach that. Also, it's easier and faster to work this way because you don't need any booster lights

when you over-expose the film. There's no need to fill the shadows because you've already exposed far beyond what the normal exposure for shadows would be."

My mind boggled.

"But what happens to peoples' faces?" I asked, somewhat aghast. "When you're that far over-exposed you not only wash the color out of the flesh tones, but you lose the texture, as well."

"Well, I don't mind washing out the texture," he said. "I hate everything razor sharp. On 'TELL THEM WILLIE BOY IS HERE' I used the over-exposure technique almost all the way through the picture and the footage looks beautiful."

What could I say? He had just won an Academy Oscar by doing what made my blood run cold just to contemplate.

He went on to elaborate on the sharpness thing.

"I'm an 'against-sharpness' cameraman, for the most part," he said. "I dislike sharpness in the foreground and sharpness all the way to infinity. I used to love it at one time in my development as a cameraman—during my 'CITIZEN KANE' phase. I used to stop down to F/64, and that sort of thing. But I've changed, and I don't like that look any more. That doesn't mean that it's not valid, or that I might not use it if it worked for a story I was telling—which is the only

Continued on Page 472

In retrospect, Hall is unhappy with his night-for-night street scenes in "BUTCH CASSIDY"—claiming that they are over-lighted. "I have a tendency to use too much light," he says, "but I am trying to combat it." He is the severest critic of his own work.



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Cameraman Glen Kirkpatrick in close confines of control room.

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By STEPHEN A. KALLIS, Jr.

For film-makers on a shoestring budget: a painless way to convert your recorder for lip-sync shooting

If you have been thinking of shooting your films with double-system sound, and if your camera has a synchronous motor, for about \$30.00 in parts, and a little labor, you can construct a signal generator that can be used with a number of tape recorders to permit the synchronism necessary for double-system work. Furthermore, the construction is so straightforward that even if you are absolutely unhandy with tools, the labor charges for constructing the gadget should be well within the budget of even the most cost-conscious producer.

Before explaining how to build the unit, I would like to review briefly the way double-system sound works. In essence, double-system recording is when picture and sound are recorded on two separate media and are later combined for the final release. What is important in double-system work is that the picture and the recorded sound are somehow interlocked so that one does not lag behind the other.

In the early days of double-system sound recording, this was done rather easily. Since in many cases the sound track was recorded optically on photographic film, all that had to be done was to make sure that the optical recorder's film was running through the recorder at the same speed that the camera's film was running through the camera. This

was done through the use of synchronous motors.

A synchronous motor is a special type of AC motor whose speed depends upon the frequency of the alternating current rather than the precise voltage. If both the camera and the recorder have synchronous motors, therefore, and they are hooked up to the same power source, they will automatically be "in step" once they have come up to speed.

The recording medium need not be an optical film, incidentally. Sprocketed magnetic tape and a magnetic recording assembly could be substituted for the sound-recording film and the optical galvanometer, respectively, with the same results.

There are some problems with these methods, however, and they have become obsolete (or at very best, *obsolescent*). One disadvantage has been sheer bulk. Consequently, the industry has developed more compact recorders.

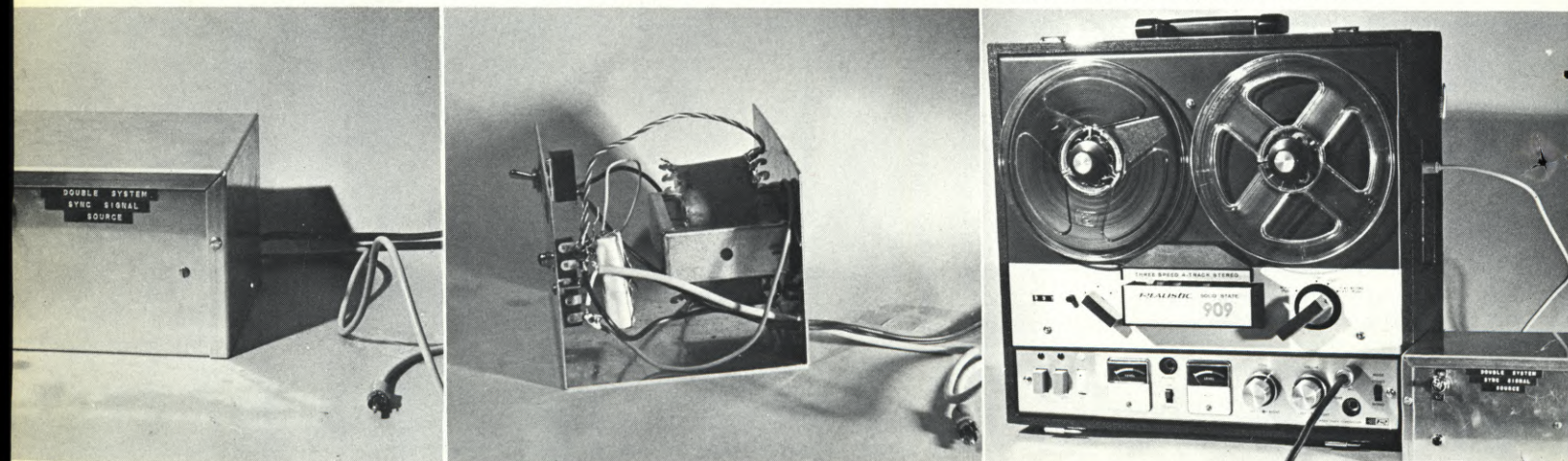
The development of the ¼-inch tape recorder led to its becoming the obvious successor to sprocket-driven recording media. The tape is compact, both because of its width and its thickness. However, standard ¼-inch tape has no sprocket holes; it is held against the drive capstan by friction provided by a rubber idler wheel. To interlock the progress of the tape through the tape

recorder with the film, some equivalent to the sprocket holes had to be devised.

Thinking back to what a synchronous motor is, we can see that while the solution to this problem is perhaps not obvious, it certainly is logical. Since a synchronous motor is dependent upon the frequency of the alternating current that powers it, if we could record the frequency of the line at the same time as we were recording the dialog, the dialog would have a reference signal for later interlocking. This technique is somewhat like putting "magnetic sprocket holes" in the tape, although the way it works is a bit more sophisticated.

In operation, the recorded synchronizing signal is compared to a standard line frequency signal. If the tape is going, say, slower than it should, the pitch of the recorded line frequency will be lower than it should be; similarly, if the tape is going faster than it is supposed to, the pitch of the synchronizing signal will be higher than it ought to be. In a laboratory, the playback equipment is engineered with circuits to control the speed of the unit's drive motor so that the tape will always pass through the playback unit at the proper speed to maintain the correct pitch. In simplified detail, then, this is how double-system recording, using unperfected magnetic tape, works:

(LEFT) The author's homemade synchronizing generator is small, compact and smooth, with only a switch and pilot light protruding from the front. (CENTER) Aluminum box shown with sides and top removed. All components are affixed to the walls in order to eliminate protrusions on the bottom and permit easy access from the top. (RIGHT) The synchronizer shown attached to one of a number of standard recorders with which it can be used.



One problem has been to make sure that the synchronizing signal does not interfere with the recorded dialog, and there have been several clever methods of overcoming this problem. Most of the solutions call for special recording heads or recording head orientations at the tape recorder, and these are known in the trade by such names as Rangertone, Perfectone, NeoPilot, etc. It is also possible to use one channel of a stereophonic tape recorder (subject to restrictions that I will discuss later) for the synchronizing signal, while leaving the other free for the dialog.

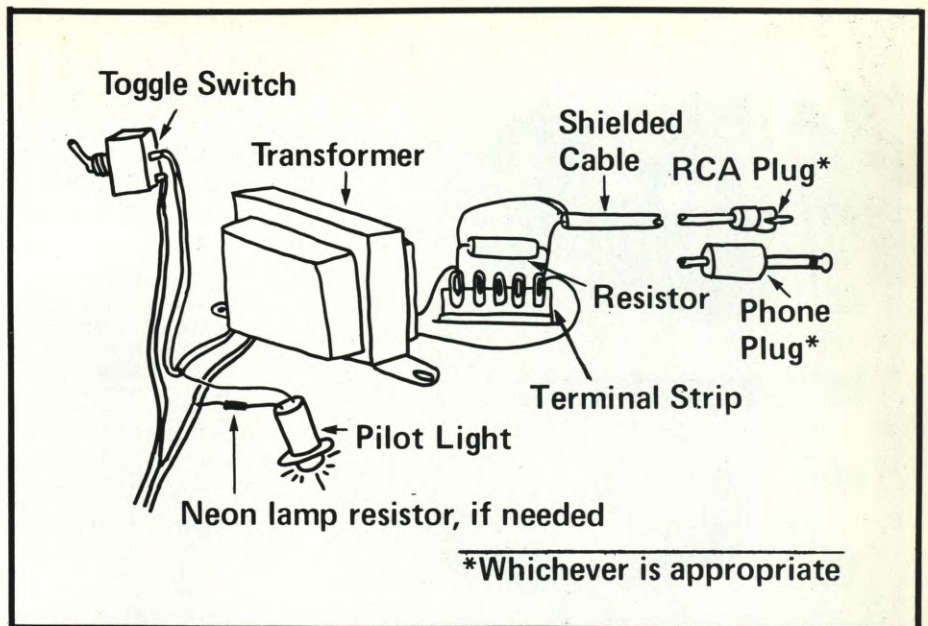
Since the current in a line is composed of alternating electricity, and since the current produced by a microphone is alternating electricity, an obvious question would be, why not just plug a power line into a tape recorder and use that for the synchronizing input? The answer is that what comes out of a power cord is far too powerful, both in voltage and amperage, so we have to produce a "buffer" device to reduce it to manageable proportions.

The first thing that is necessary is to cut down the voltage. Power line voltage is usually 115 volts; most recorders can handle input voltages of only $\frac{1}{2}$ – $1\frac{1}{2}$ volts. Along with this, we need to make sure that we do not feed too much current to the recorder. The input to a recorder is usually measured in thousandths of an amp; even the most minimal American house wiring will deliver a good 10 amps.

From these constraints, the design grew. The parts you need are simple: a step-down transformer, a resistor, a power switch, a pilot light, terminal strips to connect the parts to, an output cable, a power cord, and something to house the whole works in.

Actually, there are very few step-down transformers that will go low enough for our purposes: the only ones that do, and which are readily available, are transformers used in tube checkers. Such transformers are available through the larger radio-electronics parts suppliers such as Lafayette Radio and Allied Radio. It is doubtful if these will be available in smaller local shops. Consequently, plan on mail-ordering this component unless you are close to the corporate supply warehouse of one of the major suppliers. The rest of the items ought to be available locally; you should refer to the parts list.

The only tools you will need are an electric drill, a soldering iron, a screwdriver, and a small wrench or pair of needle-nose pliers. Mechanical assembly is very simple, and parts placement is not especially critical.



Rough sketch showing how the various components of the double-system synchronizing generator are hooked up in relation to each other. The only readily available step-down transformers that will go low enough for this purpose are those used in tube chargers and these must be ordered from one of the larger suppliers, such as Lafayette Radio or Allied Radio. The transformer may have to be mail-ordered, but all of the other components should be available locally.

First, the mechanical work should be performed on the box that will house the components. For lightness, strength, and workability, I selected an aluminum box. These can be drilled easily with the standard $\frac{1}{4}$ -inch electric drills usually found in every home workshop. As a general rule, I fit all components onto the walls of such boxes rather than the floor; since the components are to be bolted on, this permits the finished box to sit easily without any protrusions. Further, if you refrain from putting any of the components on the top (or "cover"), servicing will be easier—if it ever needs any.

In my model, I placed the pilot light and switch on the front of the unit, and

the transformer, the tiedown strip, and the holes for the cords on the back. Since the transformer will probably take up the majority of the internal space of the box, after mounting holes have been drilled for it, it should be mounted temporarily so that the other components can be placed around it to determine their positions.

Positioning the components, I repeat, is not particularly difficult, but sufficient room should be left between them to allow you to solder things easily. Be certain that your box is large enough; component sizes may vary a little, but you should have plenty of room inside a box with the minimum dimensions of 6

Continued on Page 458

PARTS LIST FOR SYNC GENERATOR

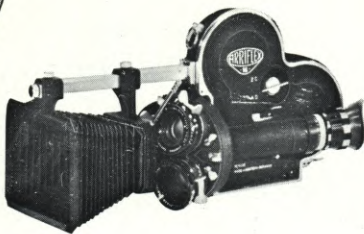
Transformer:	Chicago-Stancor P-1834-3 or equivalent
Toggle Switch:	Cutler-Hammer 8280-K-14 or equivalent
Resistor:	IRC PW-10 2-ohm power resistor or equivalent
Pilot Light:	Alco BNE-2 or equivalent (needs external 100,000 ohm resistor)
Terminal Strip:	H. H. Smith 848 or equivalent
Al. Box:	Premier AMC 1007 or equivalent
Output Cable:	Switchcraft 25AF84 or equivalent for RCA plug recorder input Switchcraft 05AK84 or equivalent for phone plug recorder input.
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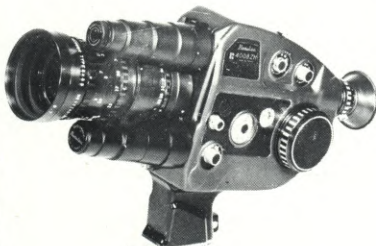
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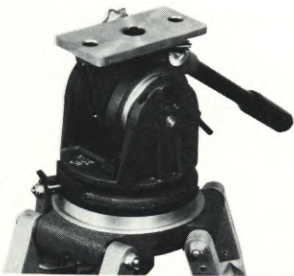
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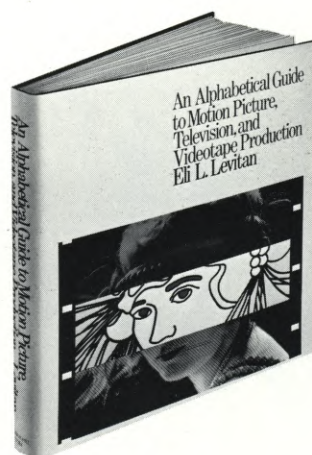
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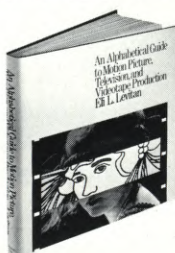
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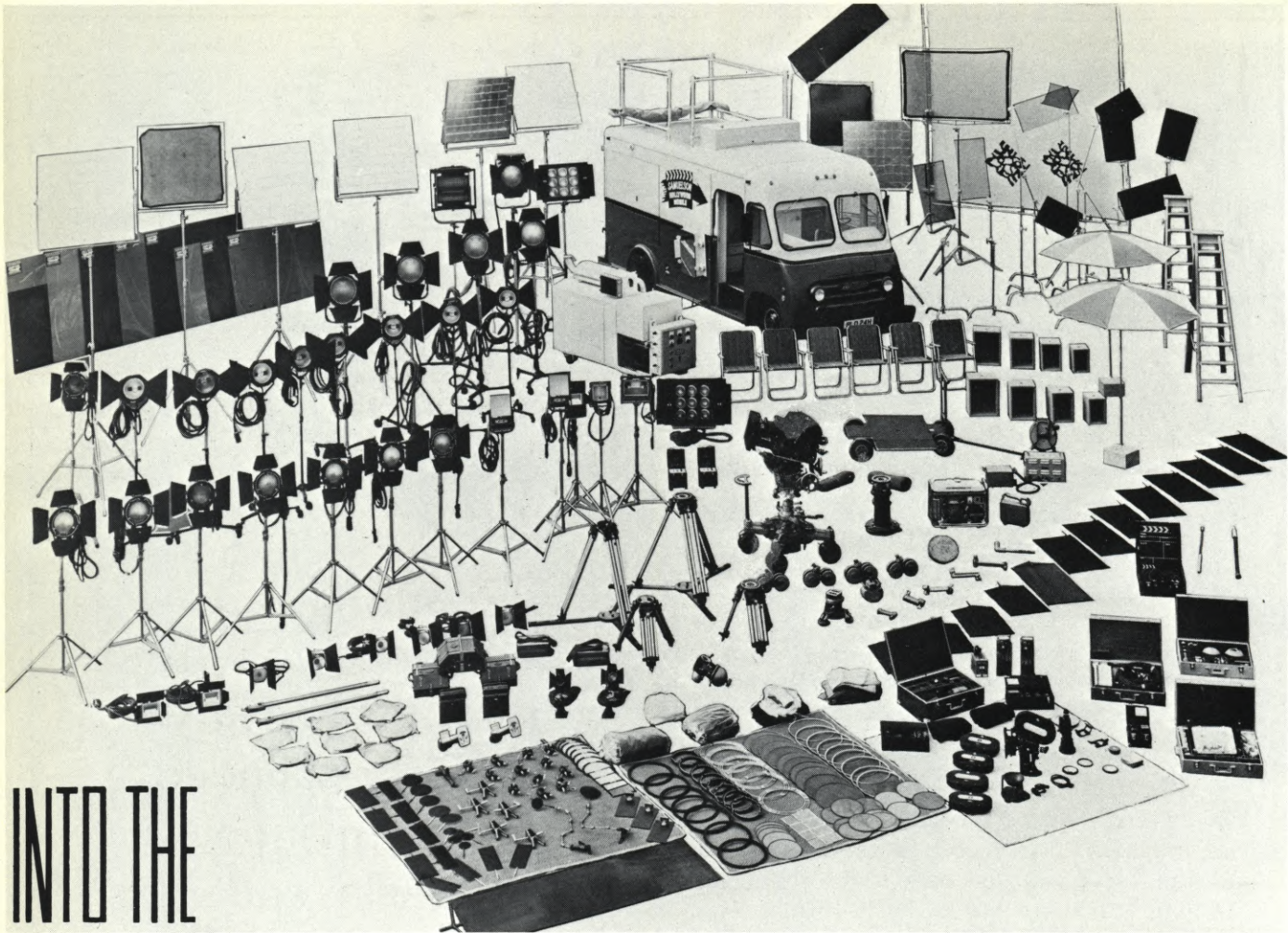
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THE "ERECTOR SET" CAMERA

How to modify the Canon Scoopic-16 camera to increase its film-load capacity and provide for a double-system sound recording capability

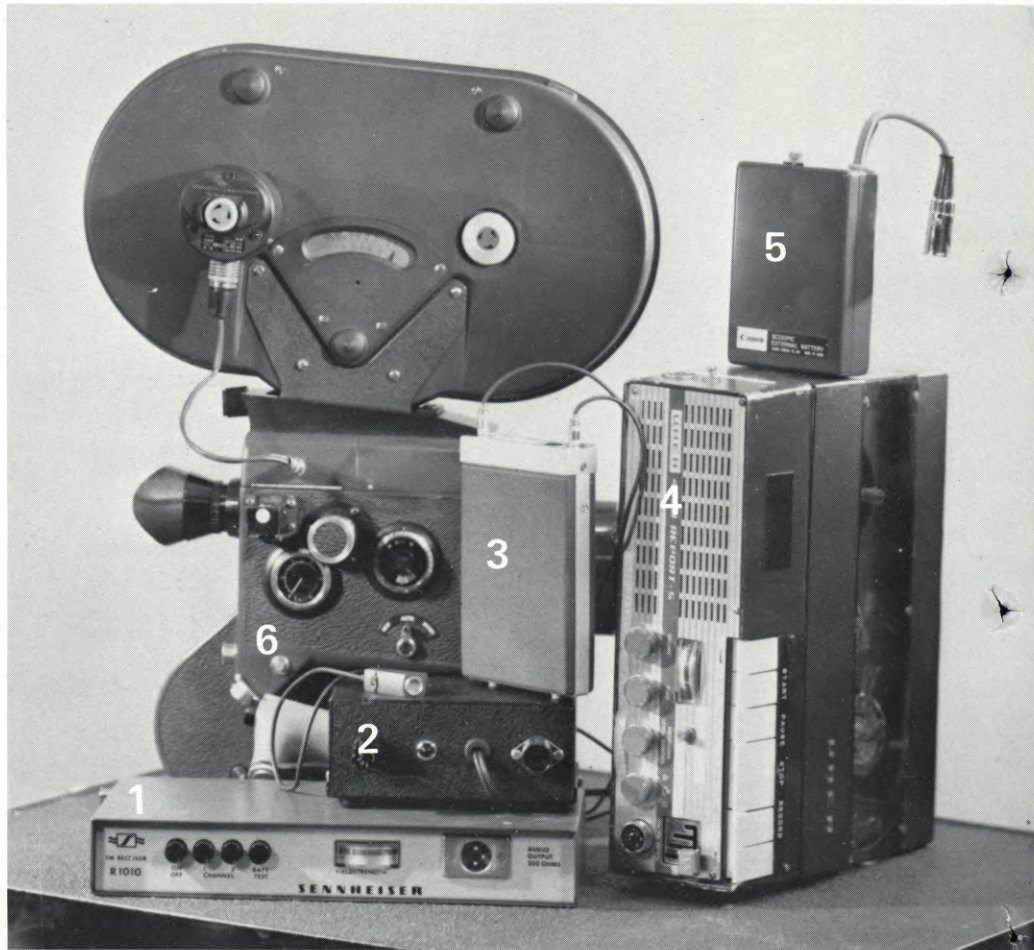
By I. HOWARD SPIVAK

Did you ever have the urge to take a 16mm camera and create an entirely different set of characteristics for the camera and still retain the original design capability and its "reason for being"?

This is exactly what I attempted to do with the Canon Scoopic-16 which was designed primarily for the newsreel photographer as a possible supplement to his sound equipment. The camera, as originally designed, is also for the photographer who needs a "grab" camera and is not interested in settings, lenses to change or exposure compensations.

The basic Scoopic utilizes a permanently mounted 13-76mm zoom lens (1-6 zoom ratio) that is battery-driven by a 12.5 volt interchangeable, rechargeable nickel-cadmium battery that I've found will actually operate the camera

Key to the modified Canon Scoopic-16 camera: (1) Bolex 12-volt torque motor, (2) Lock-in for 400' magazine, (3) Spirit level, (4) Sync-pulse generator outlet to recorder sync head, (5) Contact button for electric start marker, (6) Outlet to battery box or battery eliminator, (7) Selector switch for Off . . . Automatic . . . Manual, (8) Settings for film and camera speed, (9) Bolex 400' magazine, (10) Light meter, (11) Zoom lens, (12) Trigger button, (13) Eye-piece (adjustable), (14) Hand grip, (15) Sync generator.



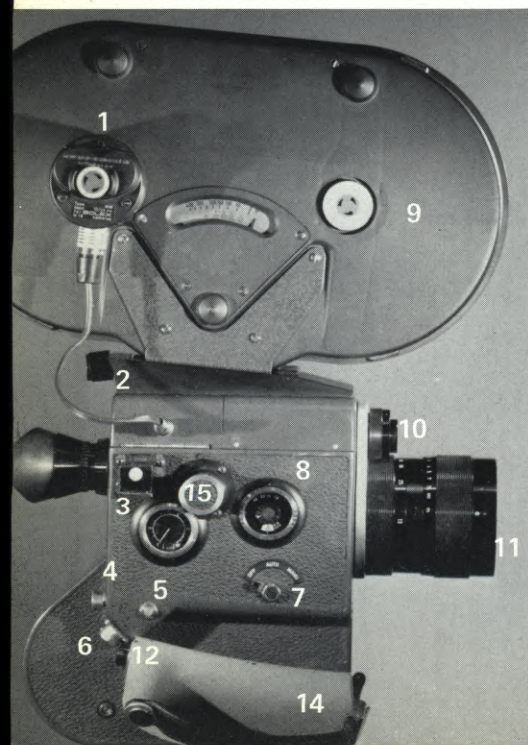
Key to sound elements applied to the modified Canon Scoopic-16 camera: (1) Sennheiser receiver for wireless microphone, (2) Sennheiser wireless microphone, (3) Sennheiser wireless transmitter, (4) Uher 4000 Report S with sync head, (5) Canon battery pack, (6) Battery eliminator.

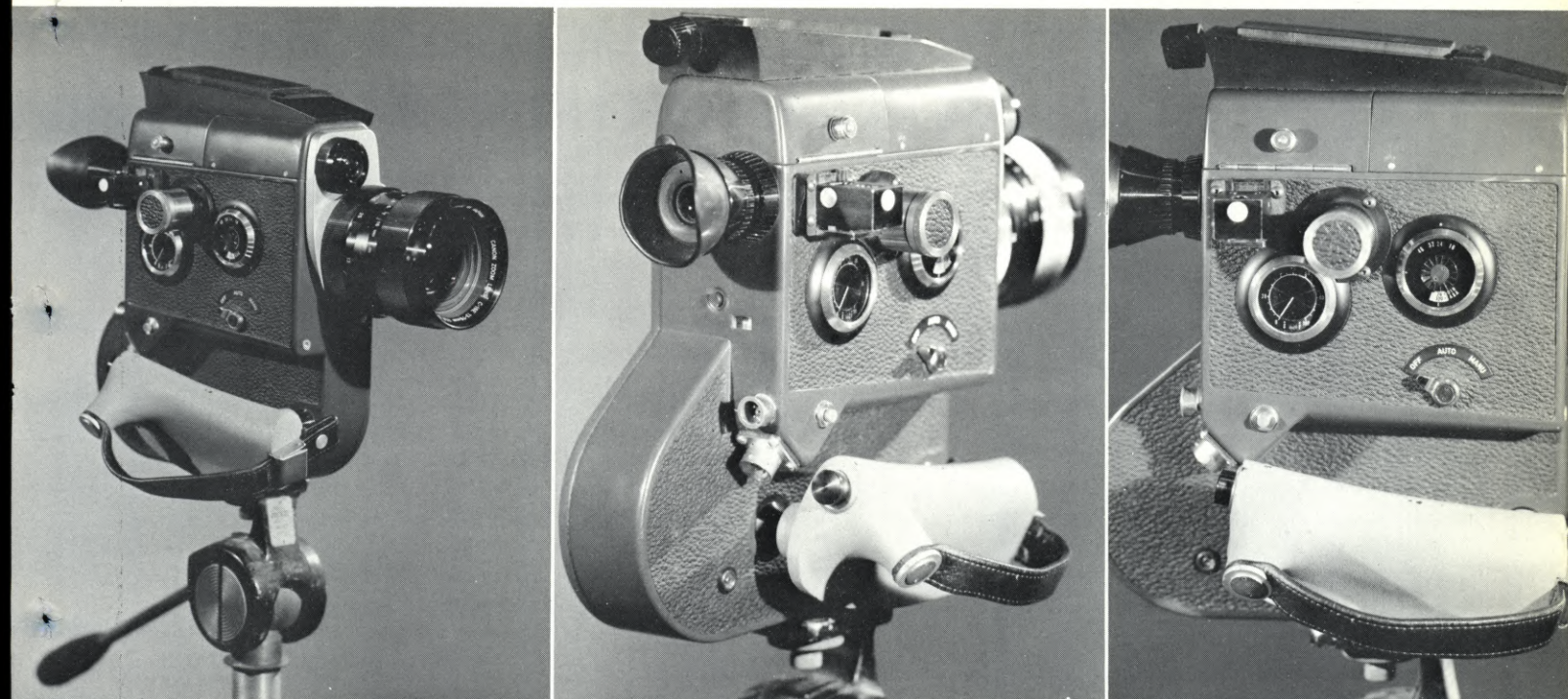
through at least eight 100-foot rolls. And, there is a miniature meter that shows the charge strength remaining in the batteries. The built-in Cds meter is surprisingly accurate. The thumb-action shutter release is also attached to the meter so that you are actually reading through the meter, and the motor is up to speed so fast that there is rarely a bright frame between changes. Loading the camera is automatic and the film is transported through the gates which form the loops and an automatic registration pin is tripped by the cover as you close it, so if the film is not

properly loaded, the door does not catch.

At this point, I guess it's obvious that we have a basic hand-held 16mm grab-camera for fast shooting and no-nonsense operation that sells for about \$1,250.00 . . . with everything built in.

I decided to try retaining all these qualities . . . which was why I bought the Scoopic in the first place . . . and attempt to add several extra capabilities to this basic unit. However, the cost was important. With the availability of several other pieces of equipment in my studio, it simply was not necessary for





(LEFT) The Canon Scoopic camera shown without the Bolex 400' magazine. (CENTER) Three-quarter view of the Scoopic without magazine, showing details of spirit level, lock for magazine and outlet connections. (RIGHT) Side view of the Scoopic, showing details of the connections. Elements added to the camera during modification increase versatility, while retaining the original design capability intact.

me to go overboard with another camera. So I decided to add "piece-meal" whatever I could to make the Scoopic more versatile.

The first step was to convert the camera to accept a 400-foot magazine. The conversion itself adds only a few ounces to the camera and can be accomplished in less than two days. The camera can still be operated using 100-foot loads. The battery inside the camera, however, cannot be used since this area is required in the conversion. The Canon accessory battery box which holds two Canon batteries must be used after the conversion... or, for that matter, any 12-volt battery source could be used.

The Bolex 400-foot magazine is used for this conversion. This magazine has a number of advantages over other magazines available: it is good looking and balances the Canon well; it is light and rugged; 200-foot and 100-foot daylight loading spools can be used if desired and by having only one chamber for both feed and take-up rolls, the smallest possible configuration is effected.

Film access from the magazine is through the battery compartment and the installation utilizes a Bolex 12-volt torque motor for film take-up. The power for this motor is supplied at a connector on the right side of the camera. The weight of this installation adds exactly 28 ounces to the camera. A light trap for the adaptor is supplied so

that 100-foot loads may be used in the camera in its original state. This conversion gives the Scoopic the capability of an eleven-minute, six-second camera time.

Using the battery box, the batteries will drive the camera at least 16 100-foot loads or at least two 400-foot magazines. All of the hand-holding characteristics of the camera are maintained with the addition of the 400-foot magazine. The camera can be loaded manually with a loop of film from the magazine or can be loaded automatically when the unexposed film is taped to a tag of take-up film. This conversion cost \$240.00 and the magazine cost another \$180.00.

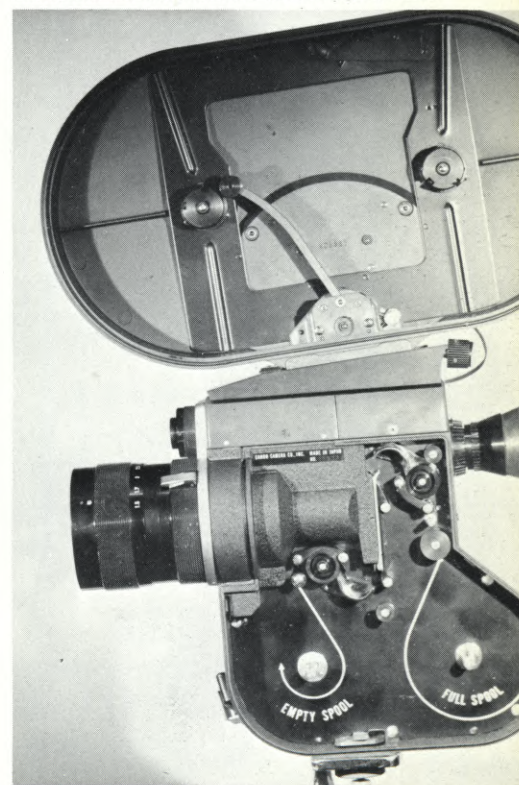
The next step was to put in a sync-pulse generator. This was accomplished by mounting the generator to the right side of the camera where it protrudes about an inch and a quarter. The output of this sync-pulse generator at 24 frames-per-second camera speed is 60-cycle alternating current at nominal 1.25 volts.

This generator adds less than one inch average drag to the camera motor and about 12 ounces to the overall weight. This generator signal is compatible with Nagra, Uher, Stellevox, Cass-Sync and other professional double system tape recorders in current use. The generator is permanently mounted, unobtrusive and does not interfere with normal camera operation.

The sync pulse generator cost \$225.00. The third step was really a sort of convenience to go along with the sync-pulse generator... I decided to put in an Electric Start Marker. This was

Continued on Page 470

Cannon's Scoopic 16, shown with sides removed from both the camera and the 400' magazine. When not used with larger capacity magazine, camera can be returned to original state.



SHOOTING A LOW BUDGET FILM TO "SELL" A CALIFORNIA CITY

A two-man crew combines showmanship with technical skill to promote a West Coast "fun city" on film

By FRANK TAYLOR

Buena Park, California has more attractions per square foot than almost any city in the United States. Within the boundaries of this community of 65,000 persons is Movieland Wax Museum, Knott's Berry Farm, Japanese Village and Deer Park, California Alligator Farm, Movieworld Cars of the Stars Museum and the vast Aviationland Museum.

Just 15 minutes away is Disneyland another tourist mecca. Yet, the city had a problem of identity. How should the city fathers go about telling the rest of the United States that Buena Park is a national fun spot—on a budget of less than \$16,000? Alex Goodman, manager of the Chamber of Commerce and a man with promotional experience on a national level, felt that a motion picture properly distributed on television would be the most effective way to carry a message to the living rooms of the nation.

Calling for bids, Goodman began the selection of a producer to implement the idea of selling his city with motion

pictures. There are nearly 500 active television stations in the country, and all of them use a certain amount of public service time. It was Goodman's idea to create a half hour documentary style picture that could be given to stations for free use as a public service.

Three proposals were presented by producers along the following lines. (1) A film introduced by a famous person with a standard documentary approach; (2) A straight documentary, (3) A theatrical presentation using a "family" who spends a day in the city with a celebrity cameo appearance.

After careful consideration, the last idea was accepted and I began work on "BUENA PARK—JUST FOR FUN" with a carefully prepared script, story boards which had been used in my initial presentation, and a one-man crew consisting of Alan Campbell, my assistant director. Since the family was to provide a major portion of the film's continuity, their costumes were of great importance. There were to be five members in our family from Kansas City: a

father and mother, a boy of 14, a boy of 12, and a daughter 6.

Mother wore a simple dress of white and pink with a large straw hat, father wore a lime green shirt with a bright fish pattern on the back and a white hat, the oldest boy's costume was a combination of brown hues, the second son wore blues, and the little girl a bright red sailor dress. Each of these colors reproduce exceptionally well in 16mm Ektachrome Commercial, our standard film.

The selection of actors was a difficult task. I needed professional people who would appear to be a family on the screen, yet work for the limited budget I had available and be able to devote long hours to the project. The people finally selected filled all of those qualifications superbly. The father, Anthony Jameson, Sr., a non-professional, took to the task of acting like a fish to water. His wife, Doreen, had been an actress in England for many years and was currently doing television commercials. Their son Anthony, Jr. had been a professional model and was well suited to the part.

(LEFT) Production Supervisor Pat LaTona uses a three-cornered suction base for the Miller Fluid Head (rented from Miller Specialty Company of Hollywood) to shoot a traveling shot from the rear deck of a convertible. (RIGHT) Using a Cine Special with 200-foot magazine, the author prepares to capture a prospector and movie "family" on film at Knott's Berry Farm in Buena Park, California.





(LEFT) Using the panorama of places like the Japanese Deer Park as locations, the author created a fast-paced promotional film for the Buena Park Chamber of Commerce. (RIGHT) Careful use of the Spectra meter helped cameraman Tony LaTona get precise exposure of actor Phillip Ahn and members of film family, Anthony Jameson, Jr., Anthony, Sr. and Grant Cannon.

Another non-professional, Grant Cannon, had a natural aptitude for acting as did Suzanne Taylor, my daughter, also a model of some experience. Since no cameraman has enough equipment, I felt it was important to establish a rapport with a film rental company and I went to see the people at F & B Ceco, where I had a long talk with the credit manager and the various department heads.

This resulted in a working relationship that proved to be mutually beneficial. I was given endless amounts of professional advice and counsel, and every piece of equipment rented, from a 5.9mm wide angle lens to a quartz light, was always in perfect condition. My basic camera was a Cine Special with a Par turret mount to accommodate four lenses. Backing this up was a Bell and Howell 70 DR and a rented Canon Scoopic zoom lens camera. To these were added, as needed, special lenses such as the 5.9mm wide angle already mentioned, 17-120 mm zooms, a 200-foot magazine for the Cine Special, and other minor bits of equipment.

The script was divided into four parts, the Movieland Wax Museum, which consisted almost entirely of interiors, the Japanese Village and Deer Park, (exteriors), Knott's Berry Farm which was about evenly divided between interiors and exterior shots, and the California Alligator Farm with a combination of interiors and exteriors.

To assure even light inside the Wax

Museum and still keep the beautiful set lighting of each group of wax figures, I asked the advice of both F & B Ceco and a friend, Tony LaTona, who had twenty years experience in this area. Six Mole Richardson 1K quartz lights with doors were chosen, and these when properly placed covered our requirements. Later, on larger sets, Mole Richardson 2K lights were used, but these put a heavy drain on the existing building circuits and caused a certain amount of trouble.

Three portions of the film were lip-synchronization and these presented special problems. The first one involved Phillip Ahn the famous character actor and was shot inside the Wax Museum while tours were being conducted. My sound man, Pat LaTona, used a Nagra recorder and a shotgun mike. We shot the scene wild with the Cine Special and matched it up later. This was not an ideal method, but worked well in our case.

Pat recorded background sounds before the start of our shooting so that we would have a section of sound to mix later if it was needed. He was to do the same thing outdoors and these sound tapes helped the editor build a professional sound track. We found subjects inside the museum to be extra difficult to shoot. In many cases they were displayed in sets which didn't allow us the full use of our equipment due to confined space.

A polished marble statue of Michel-

angelo's Pieta was white, reflected light like a mirror, and had a revolving color wheel overhead that changed the hues as we were photographing it. Four Mole Richardson 2K lights were needed in the room to bring the temperature up to a point at which we could expose Ektachrome EF, but the results are some of the best we obtained in the picture. Again the invaluable assistance of Tony

Continued on Page 464

The author, using his Cine Special, lies flat on the ground to film low angle shot of a Ghost Town musician.



A GOOD IDEA, THAT WORKS:

You change the NPR's magazine in 5 seconds or even less—and you don't touch the film.

Snap off the old magazine, check the aperture, snap on the new magazine. That's all. No threading; no loop to form; no blimp to climb in and out of. You don't need to touch the film at all. The film is threaded and the loop is formed inside the magazine when you load it, before shooting starts. The spring-loaded rear film pressure plate is on the magazine; the aperture is on the camera body. When you snap off the magazine, the aperture, registration-pin and claw are right before your eyes, visible and accessible for fast inspection or cleaning. Both double and single system magazines are available; and both types accept up to 400 feet of 16mm film on cores or daylight loading spools. The magazines are co-axial, and each side is light-tight. So, even with core wound film, most of the loading can be done in daylight. You can see what you're doing; and the whole thing is fast, easy and foolproof.



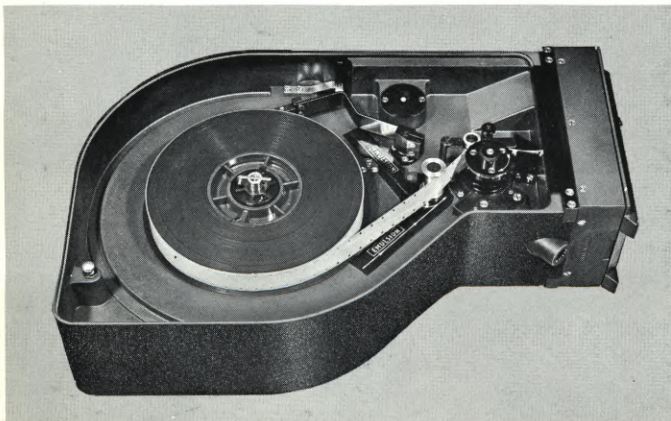
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A million and a quarter feet shot in eight months.

For the ABC TV show "Everybody's Talking," Hollywood cinematographer Baldwin Baker ran a million and a quarter feet of 16mm film through his NPR in eight months. That's 7,000 feet per day, five days a week. And he didn't lose a single frame.

Footage blown up to 35mm is "Stadiest ever seen."

The NPR's registration-pin holds vertical unsteadiness to less than one thousandth of frame height. Hollywood cinematographer Vilis Lapieniks has seen much of his footage, shot for Wolper Productions, blown up to 35mm. His NPR footage is, he says: "Without a doubt the stadiest and sharpest blown-up image I have ever seen." All three television networks regularly use NPR cameras to shoot documentary and news footage. Vilis Lapieniks recently used one to shoot an hour-long Tijuana Brass color TV Special with a \$750,000.00 budget.

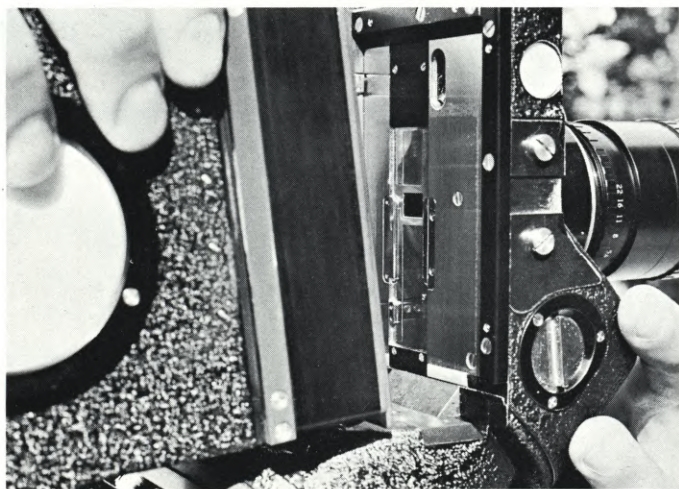


some notes on the instant magazine change.

**ACTUAL CASE HISTORIES
BELOW SHOW HOW THE
INSTANT MAGAZINE CHANGE
HAS HELPED FILM MAKERS.**

Unexposed gate survives blowing sand in desert.

New York film maker Michael Wadley took three cameras with him to shoot a mountain climbing expedition in Afghanistan. En route, he had to shoot in a desert, with sand blowing everywhere; but he managed to crouch under a coat and whip on a new NPR magazine in three seconds. The other two cameras, which had to be opened up and threaded, were both eventually rendered unusable by sand that got into their movements.



Changing magazines on the run—literally.

Shooting President Johnson's Far East tour for the U.S.I.A., Hollywood cinematographer Richard Moore said of his NPR: "When the President moved suddenly indoors, I was able to switch immediately to a faster film, literally as we followed him inside."

AMERICAN CINEMATOGRAPHER, MAY, 1970



Unobtrusive mag change doesn't disturb lions.

Shooting a Special on Africa for ABC TV, New York film maker Jerry Feil found himself within a few yards of a lioness and several cubs eating a newly killed antelope. By moving very slowly, Mr. Feil was able to slide off his empty, rear-mounted NPR magazine and clip on a new one without distracting the animals from their feed.

Catching unrepeatable action on Candid Camera.

Director Bob Schwartz reports that the shooting to aired-footage ratio on Candid Camera is about a hundred to one! The best action can't be repeated, of course, and often occurs at film runout. With earlier cameras, they used a system of secret warning lights, where possible, to let the interviewer know that he should stall the action while the hidden crew changed magazines. But with the NPR this is unnecessary, since the two-man crew can change the NPR's magazine in three seconds and let the camera's automatic clapper re-establish sync.

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THE MAKING OF "OMEGA"

Continued from Page 431

Next I would press the cable release to open the shutter and tighten a knob to keep pressing down. Then I would turn the camera motor on for an instant to advance the film and actually open the shutter. At this point, the image was projected onto the cell. I would then take an acetograph pen filled with acetate ink and trace the figure's outline directly onto the cell. Finally after completing the outline, I would release the knob on the cable release which let the shutter close halfway, then would remove the cell, switch the unimotor on for an instant to close the shutter completely, and lay the next cell in place, repeating the whole operation 12 hours per day until I finished.

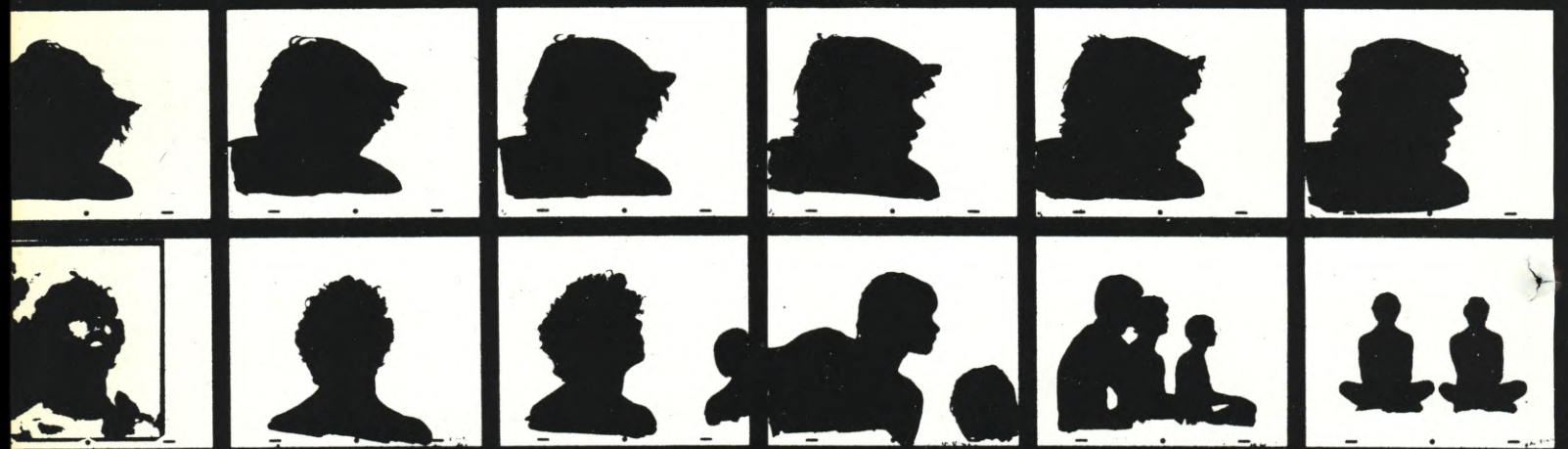
on top of the cell and press it flat against the other glass surface. I tried to make a hinged glass, but finally I ended up by just using a sheet of 1/4-inch glass and laying it over the cell by hand for each frame shot. The operation was quite tedious, for I would put a cell down, lay the glass over it, turn the motor on, and press the cable release to expose a frame. Then I would remove the glass, take away the cell, put the next cell in place, and lay the glass over it again, repeating the process 600 times for the sequence.

After the film was developed, I discovered that it did not fit the original one: it was two frames longer. I went back comparing the drawings to each other until I found two extra ones, removed them and re-shot the sequence. Once the animated sequence was developed and found to match the original

that time, and I saw a fantastic pattern in the viewfinder. I believe that somehow the pinpoint light magnifies or enhances the defects in the glass, and this is the whole secret behind this sequence of the film.

Once I discovered what could be done with the glass, I went out and looked for every type of glass object I could find. After I had collected a wide variety of shapes, I rented a turntable to put the glass on so that, as it turned, the patterns would constantly change. Over the 90mm macro lens I placed +3 and +2 diopters, and focused the lens to the nearest point, which was somewhere inside of the glass object on the turntable.

I used Plus-X reversal film in the camera, set the lens at its widest opening, which, I believe, was F/2.8, and set the camera speed at 24 fps. I turned on



(TOP ROW:) A consecutive series of roto-scoped mattes showing a figure turning his head to profile angle. (BOTTOM ROW) Random frames from other roto-scoped scenes in the film. Each frame had to be projected onto a cell so that the figure could be traced and opaqued with black ink. More than 600 separate frames were laboriously hand-traced in this manner to create necessary mattes.

After all the cells were outlined, I began painting them in, and this was the most time-consuming and boring operation of all. It took nearly a month to do this and once it was finished, I was ready to photograph the cells. I removed the film from the camera and replaced it with 7362 which I had to re-spool from 400-foot cores to 100-foot spools for my camera. I put the regular pressure plate back into the camera and moved the shutter selector back into the "instantaneous" position for regular shooting. I lighted the white piece of cardboard beneath the glass top with three 500-watt photofloods, because the film department would no longer let me use their 1000-watt quartz lamps, as I was not officially enrolled during that Summer.

To photograph the cells I really needed a glass with a hinge device to fall

unmatted scene, I was able to proceed to the next phase of the production.

In my script, I called for a sequence to have an "abstract" background with patterns of light constantly changing shape and color. Of course, I had no idea of how to do this, except possibly with animation, which I knew would be an almost impossible feat to accomplish. Actually, I found two ways of creating these patterns, one giving a basically geometric design to the light, and the other producing a more random pattern. I happened onto the first effect while experimenting with a 90mm macro lens, a piece of glass, and a pinpoint light source. I was just holding up a glass ashtray to see what it would look like through a macro lens. I happened to have one of my large, single "stars" shining through the foil mounted on the reflector as I looked through the glass at

the turntable to revolve at its slowest speed and looked through the viewfinder. As I watched, I saw patterns of light constantly changing shape in the most beautiful way. So, I turned on the camera and watched the fantastic play of light. Of course, there was no real color in the patterns themselves; and since the whole sequence was recorded on black and white film, there was no color at all. It was in the optical printing that I put the colors into the patterns by phasing the images through red, green, and blue filters.

The second type of "abstract" image was also shot with a 90mm macro lens, but this time the subject matter was quite different, for it was simply a bubble. I got the idea of using a bubble when several friends and myself were playing around with large bubbles at night. We would make a bubble about

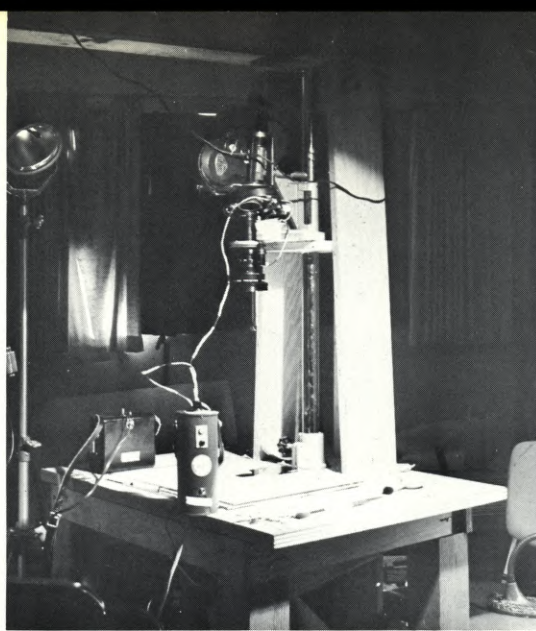
six inches in diameter and let it float off into the darkness while shining a flashlight on it. It was the most fantastic sight, for we would see this sphere hovering above the ground, displaying the most beautiful, constantly-changing colors. I wondered why this could not be recorded on film, so during the production I decided to try it.

Instead of actually having the bubble float in space, I decided that it should remain in a fixed place. I went out and got about five bottles of the bubble solution that kids play with, poured it into a glass bowl, put a plastic funnel into it, and mixed the solution around until the glass surface was covered with its thin film. Next I pulled the funnel out and blew a bubble into the bowl. Usually it would pop, but soon I was able to get a good-sized one. As I would pull the funnel out of the bubble itself, the bubble would bounce up and down for a few seconds, finally settling down before it popped. The main problem was to get a bubble which would last long enough to photograph.

I used two film stocks to shoot the bubble, ECO and Kodachrome II. I set the camera at 48 fps to make the bubble last longer and set the lens at around F/4 for ECO and F/5.6 for Kodachrome. I lighted the bubble with a piece of white cardboard which reflected the light from a 1000-watt quartz lamp. The bubble acted like a convex mirror so that everything reflected in it looked much smaller. So, even though the bubble was placed close to the piece of cardboard, the area that could be photographed was quite small, around an inch square. Also, I had to catch the reflection at just the right angle to get the most beautiful patterns reflected from the bubble. As far as giving motion to the patterns, I did nothing because, due to the very nature of the bubble, the patterns constantly changed.

After shooting a great many bubbles, I was able to get some very interesting material, which was later bi-packed in the optical printer with different mattes to produce the final composites. Sometimes a positive of the bubble was used and at other times a negative of it was employed. After all the shooting was completed, I was ready to cut the material for optical printing.

Before I actually did any optical printing, I had to edit down and synchronize all of my film. This was an especially hard task, for I was working exclusively with original material. I worked with the original because I did not have the money to make prints, and because matching the prints to the



(LEFT) Homemade animation stand on which is mounted an Arriflex camera with powered 12mm/120mm zoom lens. Camera is held in place by means of a clamp arrangement on a pipe taken from an old copy stand. (RIGHT) Bi-packing 16mm film in a Mitchell Camera, using a rare 16mm Bi-pack magazine. The upper compartment holds the raw stock and the lower, the material to be printed.

original would have added more time to the production. I used a viewer to do this crude editing, or *pre-editing* as I called it, for I knew that the viewer would be quite gentle on the film and would not scratch it. In all it took about a month to do the pre-editing. After the film was optically printed, I went back and edited it in the usual manner with a workprint.

The optical printing was almost the last stage of the production. It was here that the final pieces of the puzzle were fitted together. And this was a very difficult thing to do, because it demanded that I be able to visualize beforehand just how the final composite would really look. First, I would have to think up an image, then I would break it down into the various separate elements that actually went into it, go out and try to shoot these pieces, and then put the whole thing back together again in the optical printing. If the images had not fitted together perfectly at the

printing stage, I would have been doomed, but somehow I had chosen the right pieces and it all went into place perfectly.

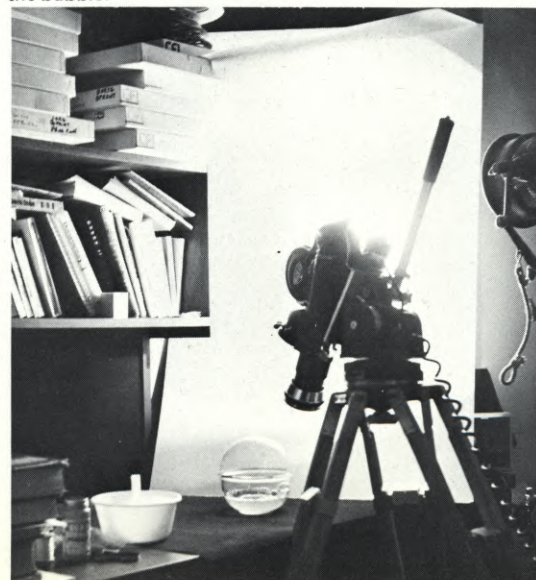
I had an extremely difficult time finding an optical printer. At first I was told that we had one in our department at UCLA and that one of the professors, Ralph Sargent, had built it. I went over to talk with him about it and found that he was the only one authorized to use it, and he was much too busy to do any optical printing for me.

By that time I was in rather desperate straits and even thought of building an optical printer myself; but I knew that if I did, it would not be very good, because I did not have the necessary parts.

I finally came across a printer when I wanted to try some 16mm bi-pack printing in a Mitchell Camera. I needed a 16mm bi-pack magazine and called Producer's Service to see if they had

Continued on Page 482

(LEFT) The Arriflex, equipped with 90mm macro lens, is used to photograph the surface of a bubble. Light for the scene was provided by a 1000-watt lamp reflecting from white cardboard onto the surface of the bubble. (RIGHT) A closer shot showing camera lens aimed at the bubble. It was necessary to work fast and achieve precise exposure in order to capture on film the delicate colors of the bubble.



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The Minolta Auto-Spot 1° Exposure Meter



A SLATING METHOD

Continued from Page 457

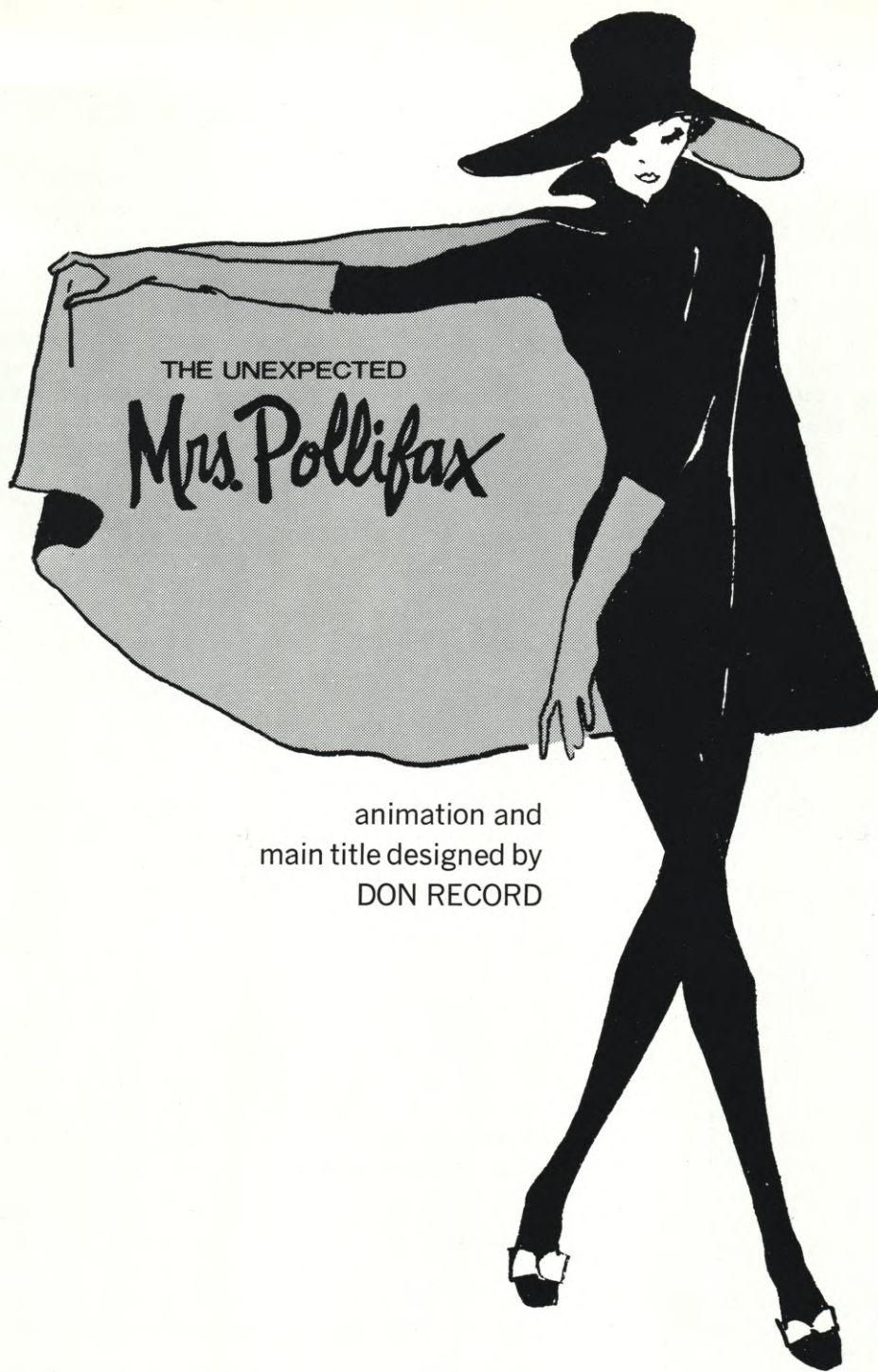
tor must be positive with respect to chassis ground. The voltage available from the Nagra recorder is negative (-10.5 volts) with respect to chassis ground. Also, the drain of the lamps (400 ma) even though only momentary would overload the regulator circuit in the recorder. Battery life is good because of the intermittent nature of the duty cycle, and alkaline batteries are normally used for extended battery life.

The type of lamps used are quite commonly available as are the size C batteries which simplifies replacement problems when on location. Also, the filament is near the end of the bulb so that it protrudes well into the clear plastic jewel of the pilot lamp socket assembly which makes it visible even at oblique angles to the camera. The system works quite well even in bright sunlight as the orange-yellow color temperature of the filaments shows up clearly unless the picture is completely washed out.

The front of the chassis used for the slate box was faced with a piece of masonite counterbored on the back side to clear the heads of the bolts that were used to mount the parts inside the box. The smooth surface of the masonite was painted white and the permanent lettering painted in black. A sheet of clear plastic was then attached to the masonite which has clear plastic pockets for the numerals and paper pads.

Since completing the slate box system, we have acquired a new Nagra IV tape recorder and find that this same system will work with it although an adaptor cable is required to connect between the 6-pin Tuchel connector from the slate box that normally plugs into the Nagra III sync connector and the 4-pin Tuchel connector for sync input on the Nagra IV. This system using the SQS sync generator with the Nagra IV may be actually preferred over using the internal sync generator option available for the Nagra IV because the sync generator plug-in module for the Nagra IV costs considerably more than does the SQS generator for the Nagra III. The system herein described is also more flexible in that it can be used with either type recorder.

Since this article was first prepared for publication, a commercial "slate box" has been announced. (See American Cinematographer, August 1969, p. 769, "Kingklapper".) To our knowledge, however, the BLOOP/MARKER option is not included in this commercial unit. ■



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A SLATING METHOD FOR CRYSTAL - CONTROLLED WIRELESS SYNC SYSTEMS

A functional way of identifying picture and track, while severing the "umbilical cord" between camera and recorder

By KEN HANSEN and JIM McGAVICK

Northwest Sound and Production Service, Seattle

The advantages of using a crystal-controlled sync generator for a tape recorder and a separate crystal-controlled motor drive system for a camera as a means of shooting double system sound and picture are obvious. The greater mobility provided because an "umbilical cord" is not required between the camera and recorder is a distinct advantage. Such a system is not, however, without some disadvantages.

Having recently acquired a crystal-controlled sync generator for our Nagra recorders for use when shooting with cameramen using a crystal-controlled camera motor drive system, we were faced with the problem of coming up with a means of establishing head sync without resorting to the usual clap stick or finger snap methods. Such methods are often undesirable if not impossible when shooting documentaries and similar scenes.

During our deliberations, we had occasion to see some rushes of a shooting crew which had been working on location and were using our screening facilities for viewing their dailies. They had used a rather unusual slating box with their conventional wired sync camera and recorder. The box was a small metal chassis which was attached to the carrying case of the recorder and had a pad of consecutively numbered "take" sheets and two incandescent

pilot lamps mounted on the front of it. At the beginning or end of a take, the soundman would voice slate the take and the cameraman would zoom in on the slate box. The soundman then pushed the button on a switch which momentarily turned on the lights and simultaneously operated the bloop oscillator in the recorder.

The thought occurred to us that this same procedure would also work in our wireless sync situation. No originality is therefore claimed for the development of the "slate box" to be described, but we have subsequently developed our own circuit which includes an additional function that we have found useful.

The schematic diagram for the slating box is largely self-explanatory, but a few additional explanations of the function of the inter-connecting cables and how the system operates may be helpful.

The Nagra SQS sync generator comes supplied with two pig tail cables, one of which connects to the recorder power connector for supplying power to the sync generator and the other normally connects to the sync input connector of the recorder. Since this sync input connector also contains the bloop oscillator connection, the sync signal cable from the generator must be intercepted so that the bloop oscillator can be activated. The slating box therefore

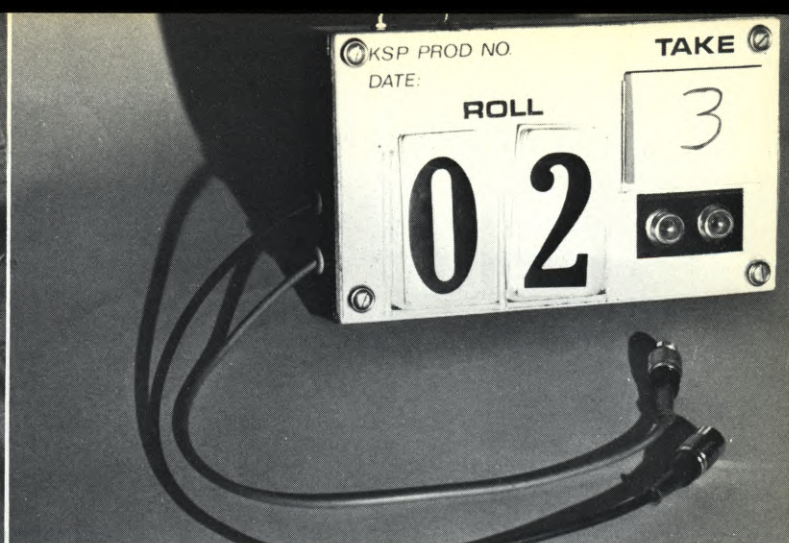
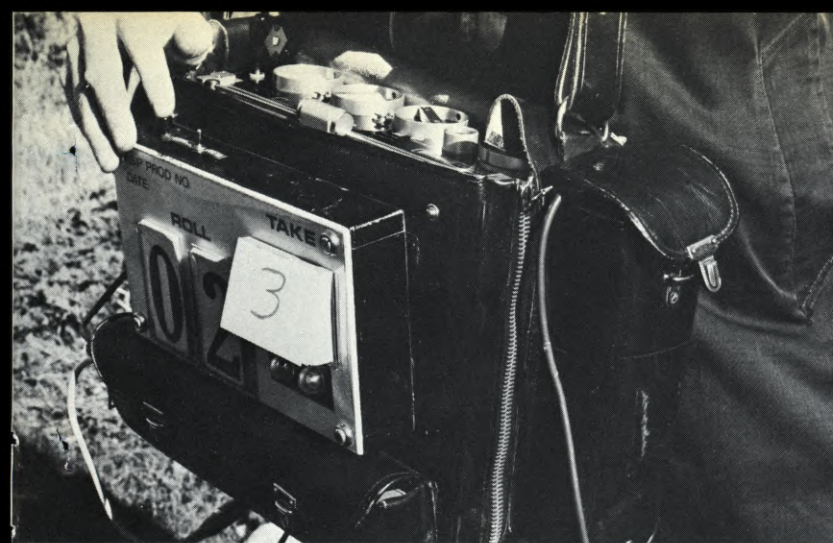
contains two pig tail cables. One of the cables mates with the sync generator output cable connector and the other cable plugs into the sync connector on the recorder. No modifications of the sync generator or its cables are necessary. The sync signal output thereby now runs through the slating box circuitry into the recorder and picks up the bloop oscillator operating voltage along the way when the slating push-button switch is pushed.

For normal operation, the MODE switch (labeled SW-1 in the schematic diagram) is set to the BLOOP position. When a camera take is to be slated, the soundman voice slates the tape recording and the cameraman focuses on the slate box. The soundman then pushes the SLATE push button switch (SW-2). The lights are illuminated and operating voltage is supplied to the bloop oscillator in the recorder.

In synchronizing the sound transfer with the picture, the editor syncs up the start of the bloop tone on the mag track with the first frame of picture that shows lamp illumination. In practice, we have found that the lamps build up to full brilliance very rapidly. Usually only two or at the most three frames show the filaments at less than full brilliancy. Incidentally, the bloop tone produced by the slate box is surprisingly clean. Apparently the bloop voltage supplied

(LEFT) The authors discuss operation of their "slate box" with cameraman working in the field. While they claim no originality for its development, they have designed a unique circuit that extends its functions. (RIGHT) At the beginning or end of a take, the sound man voice-slates the take and the cameraman zooms in on the slate.





(LEFT) The slate box contains two pig-tail cables, one of which mates with the sync generator output cable, while the other cable plugs into the sync connector on the recorder. (RIGHT) When soundman pushes button, lights flash on and bloop oscillator inside recorder is activated.

from a camera in a conventional wired sync situation contains a lot of hash that is produced by the camera motor and causes distortion and noise to appear on the bloop oscillator waveform.

On occasion, we have found it desirable to allow the recorder to run continuously and have the camera run intermittently without having a bloop tone appear in the sound track when the camera starts. Here again, the problem is to establish head sync for the camera takes. With this slate box, the soundman switches the MODE switch to the MARKER position. When the camera takes are to be slated, the cameraman focuses on the slate box as before. The soundman does not voice slate the take but merely pushes the SLATE switch. The lights come on as before, but instead of a bloop tone appearing in the recorded track of the recorder, the sync signal to the recorder is interrupted for the duration of the slate sequence.

The Nagra SLO resolver contains a MARKER oscillator which is triggered by the absence of a sync signal on the tape. In the transfer process, the MARKER TONE output is connected to the signal output of the tape recorder so that it is recorded in the transfer along with the audio from the tape. The editor then uses the marker tone signal to establish scene sync keeping in mind that the marker tone sync point is displaced about 5 frames because of the difference in spacing between the sync signal recording head and the sound signal recording head on the Nagra recorder. Shooting some test footage takes using both the BLOOP/MARKER system and conventional clap stick slates in a given take will give editors the correct "feel" of this slating system.

With this slating system, the original continuous uninterrupted recording is available without bloop tones for other purposes if necessary. This system is

also useful for shooting with two or more cameras where one camera may be running continuously for a master shot and the other camera(s) are used for sync cut-aways or shots from other angles. Because no voice slates are made by the soundman when using this type of slating, very careful notes are required to keep track of the various camera takes.

The chassis used for the slate box was selected to allow for fairly large numerals on the front of the box. The slate box and the sync generator case are attached to the recorder carrying case lid with strips of "Velcro" which is a trade name for the prickly plastic material now used in many fastening situations such as on the overlapping covers of the camera Barney for Eclair cameras. In our area, it was available at the sewing materials department of a downtown store. The mating strips of the material were glued to the recorder carrying case cover and the backs of the slate box and the generator carrying case pouch.

The recorder carrying case used was the regular Nagra HTQ leather case with a pouch for the sync generator. The generator pouch is normally riveted to the lid of the carrying case but was removed from the case so that it could be relocated to allow more room for the

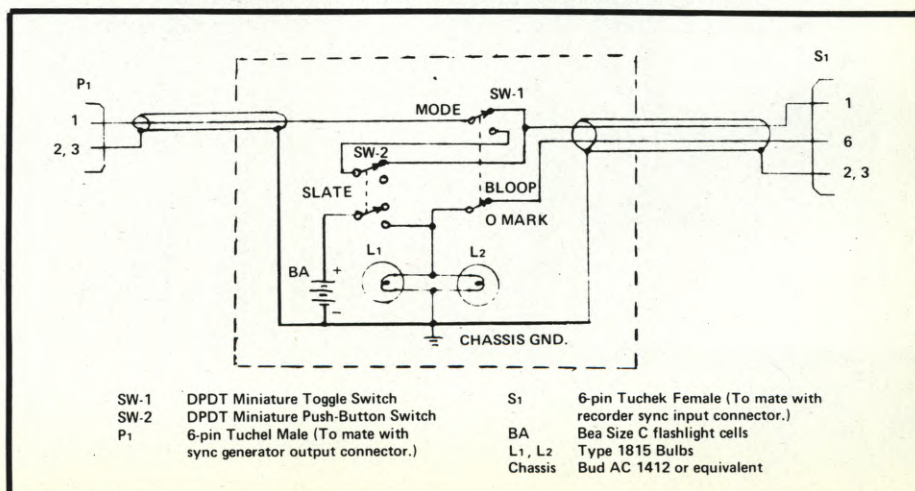
slate box. With the slate box and sync generator in place on the recorder carrying case, the lid that covers the controls of the recorder will not snap shut. This is not a problem because this cover is always open when the recorder is being used and would only be closed when transporting the recorder. When transporting the recorder, it is advisable that the slate box and sync generator be removed from the recorder case lid since they make the recorder rather clumsy and bulky to handle and are more subject to being accidentally damaged. Although not shown in the photographs, a shield has been placed around the SLATE switch to prevent it from accidentally being pushed in when placed in an accessory carrying case and running down the batteries.

Two lamps in parallel were used for the bloop lights as a back-up measure in case a lamp should burn out at an inappropriate moment when replacement would be inconvenient if not impossible. The chances of both lamps burning out at the same time appears to be almost nil.

Separate batteries were used in the slate box for the bloop lights and oscillator rather than trying to take power from the recorder because the operating voltage for the bloop oscillator

Continued on Page 454

SCHEMATIC DIAGRAM FOR WIRELESS SYNC SLATE BOX



SYNC GENERATOR

Continued from Page 441

by 5 by 4 inches. Also, no holes should be drilled so close to the edge of the box walls that you would have any trouble closing the box when the components have been mounted.

Drilling the mounting holes will be very easy except for the holes for the pilot light, the power switch, and the lines. No normal drill bit for a 1/4-inch drill will make a hole large enough. By drilling a smaller hole at the desired spot, however, you can achieve holes of the correct size by reaming them out to size with a countersink bit, which works very well on aluminum as long as you don't bear down too hard on the drill. (Needless to say, in all drilling operations, safety glasses or other eye protection is strongly recommended, especially when there are little shards of aluminum which are likely to fly about from the drill bits.) On a countersink-enlarged hole, especially the one through which the cords will pass, it is a good idea to drill it slightly undersize and bring it up to size with a circular file, thus dulling the sharp edge that could cut the wires in time.

The transformer should be removed, and wires attached to the correct secondary terminals. With each transformer, a specification sheet is supplied that lists the output voltages of the various secondary terminals. Depending upon your recorder's characteristics, one of the lower values should be chosen (that is, 1.0, 1.1, or 1.4 volts). For use with a stereo recorder, use the higher value—the lower values are better matches for the sync systems special to the motion picture trade. Wires should be soldered to the proper terminal or terminals; for clarity and to avoid confusion, these wires should be of a color different from that of the "primary" wires to be attached to the power source. Each lead should be longer than you think necessary, since it's easier to trim a little away than to add a bit. The wires should be able to handle several amps.

After the secondary wires have been soldered onto the transformer, all the hardware should be mounted into place and bolted down firmly. After that, the final wiring and soldering can begin.

There is no particular order to the soldering. The line cord should have one lead soldered to a terminal on the back of the switch, and on the other switch terminal a lead from the primary side of the transformer can be attached. A lead from the "transformer side" of the switch can be run to one of the terminals of the pilot light. *Never*, by the



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way, solder a terminal until all of the wires that are going to be attached to it have been soldered.

The other lead from the power line, and the other transformer primary lead, should be attached to the other terminal of the pilot light. If you are using a neon-bulb pilot light that needs an external resistor, the switch-to-pilot-light wire can have the resistor attached to it somewhere; sometimes the resistor's own leads will be long enough to act as the wire. In either case, however, make sure that the power cord and the wire to the pilot light are insulated from the walls of the aluminum box. Otherwise it might give you a rather powerful shock if the conditions are right.

The secondary leads should be attached to the ends of a terminal strip. To those same terminal strip ends should be attached the leads of the power resistor. Also, to each of the end terminals should be attached one lead of the output cable. Neglecting the terminals for a moment, the result will be as if you had attached one lead of the output transformer to one lead of the output cable (likewise with the corresponding leads), and that the resistor was bridging the gap between the two. Now check to make sure that nothing is shorting to the box, and solder. Electrically, you are finished.

After you have finished fastening the top in place, you might like to add some labeling to facilitate your operation, such as an "on" label for your switch, but this is for convenience; the pilot light will let you know if the unit is functioning.

Ideally, the way to check the operation of the unit is to hook it up to an oscilloscope and check its waveform. However, an AC voltmeter will give you an approximate voltage reading, and you can tell fairly well by ear how "pure" its waves are by plugging it into the "AUX" or "TUNER" jack of a high-fidelity amplifier and listening for the hum over your speakers. However, if you do this latter, you'd better have a good speaker system and a good amplifier. Otherwise, a good signal will come out sounding terrible because of your sound system's failings!

OPERATION:

First of all, it is necessary to have a good tape recording system. I do not say this jokingly, because this signal generator is useless if you try to operate it with an inexpensive, marginally-engineered recorder. I do not mean that you should have to spend \$1,000 for a recorder, but (especially in the case of a stereo recorder, which is often the

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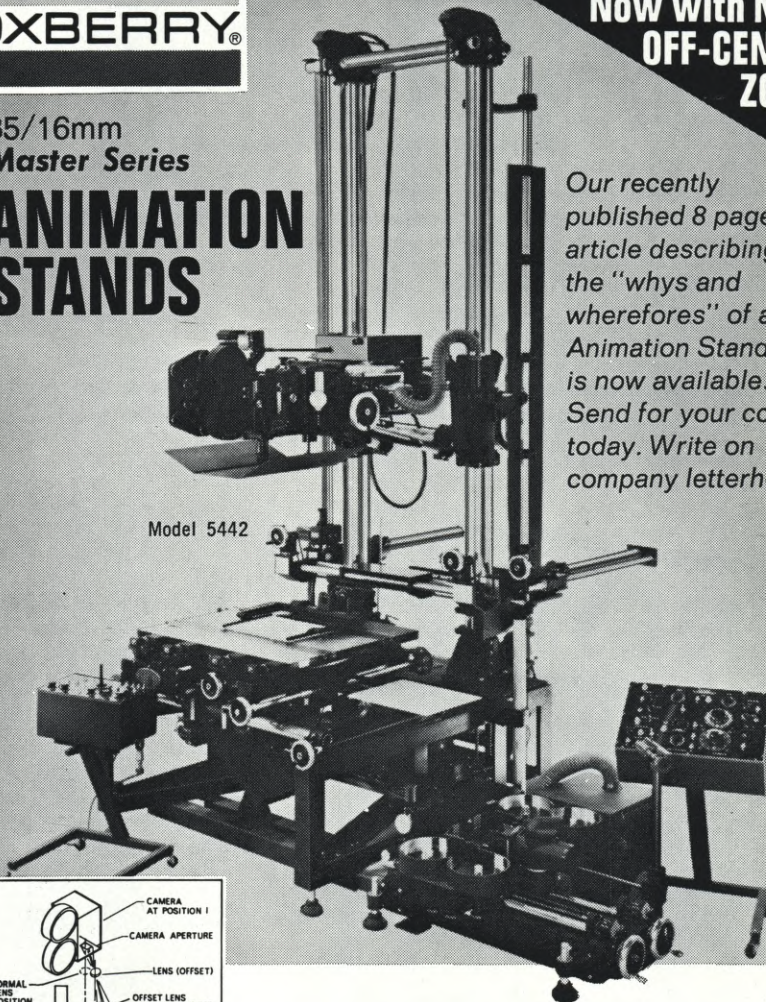
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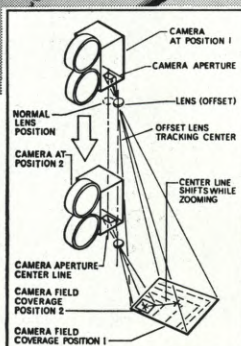
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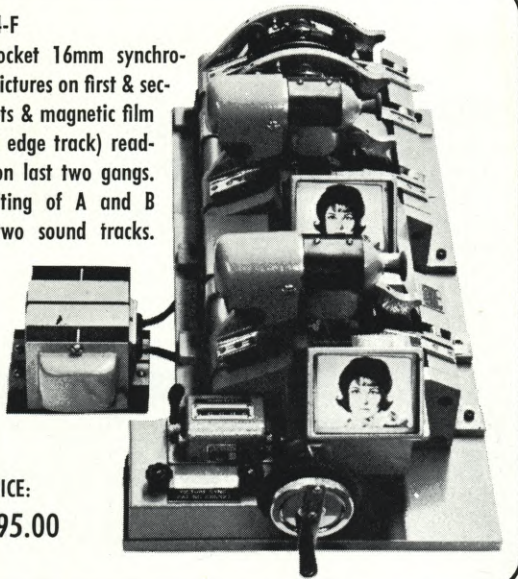
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cheapest way to go) the tape transport mechanism should have a constant speed, and the recorder's electronics must be capable of recording a 60-Hz tone cleanly, without distortion. If the signal is recorded with distortion, it may not be clean enough for the playback unit to utilize for synchronizing.

Secondly, the recording system should have VU meters or their equivalent. A blinking-light neon indicator or its equivalent is not sufficient.

The generator should be plugged into the "AUX" or "RADIO" jack of the recorder (if it is a stereo recorder) or the sync input for the specialized motion picture recorders. Make sure that the end of the generator's cable matches the input jack for the recorder.

Set the synchronizing channel's recording level so that when the generator is on and the system is recording, you are at 0 dB or 100% modulation (depending on the type of meter you have). Then when the camera is on and you are up to speed, synchronize the picture and sound with clapsticks.

On stereo recorders, there is no standard channel for dialog and/or sync. I have found that recording the dialog on the left track and the sync channel on the right is most compatible with the types of monaural recorders you might want to use for monitoring the sound track later.

Also, not all labs will handle stereo recorders, and most of those that do will only handle two-track stereo. If you have a four-track machine that you are contemplating using, seriously consider having the head exchanged for a two-track head. If you think your lab can handle the reduced signal level of a four-track recording, you might send a trial recording with sync track for them to test, but don't be too disappointed if the results are poor. Also, if you *do* send a test from a four-track machine, remember to record on one side of the tape only. Recording on all tracks will render it impossible for your lab to help you; they will pick up both sync and dialog when they play it.

Another thing: as a general rule, record at the fastest speed that your tape recorder will allow you. Don't be shy: there's a lot of tape on a reel. The faster the speed, the more certain you are to get a clean sync signal (your dialog track will also have higher-quality sound, but that's just a dividend).

By following these simple instructions, and being careful during construction, you, too, can have double-system sound with a minimum of effort. And besides, it's a lot of fun to slap those clapsticks closed. ■

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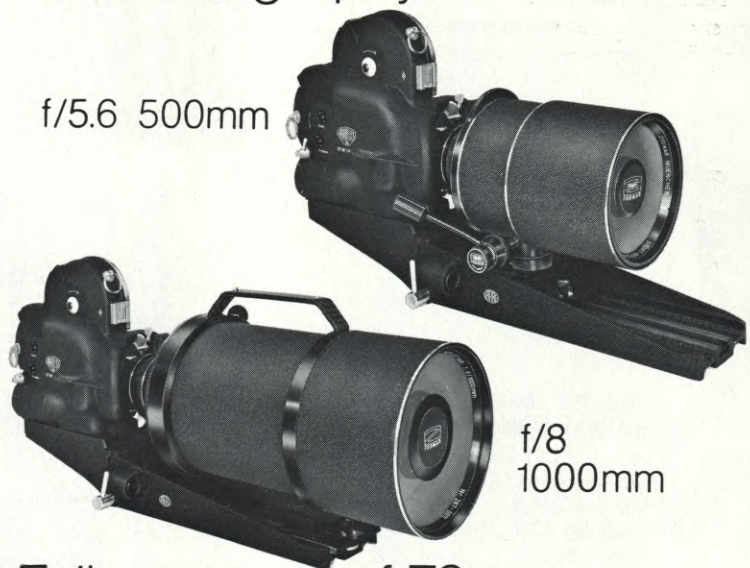
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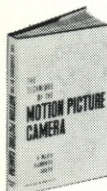
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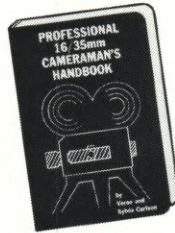
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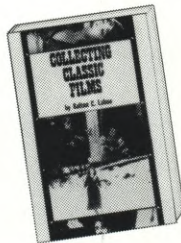
The author is a free-lance Director of Photography of Documentaries, T.V. Commercials, and Feature Films. He is also a consultant to a medical research institute, lectures to film groups, and conducts camera courses for professionals. He is a member of the IATSE (Cameramen), SMPTE, SPIE, and SPSE. His wife Sylvia collaborated with him in the writing of this outstanding book. More than 380 pages and over 130 illustrations. This definitive work is a result of 21 years of experience in the film industry. Covers everything for the Studio Cameraman and Assistant. Also for In-plant, Newsreel, Documentarist, and the Experimental Film Maker. Profusely illustrated with actual photographs—not diagrams—and liberally supplied with data tables and charts. This unique handbook also provides guidelines, tips, warnings, and "tricks of the trade". The book draws upon firsthand knowledge as well as the experiences of other talented professionals. The result is the finest guide book of its type ever published for the professional as well as the aspiring cameraman. In connection with all specific Cameras, Magazines, Lenses, and Accessories . . . every phase of installation, operation, and usage is fully covered. **\$15.00**



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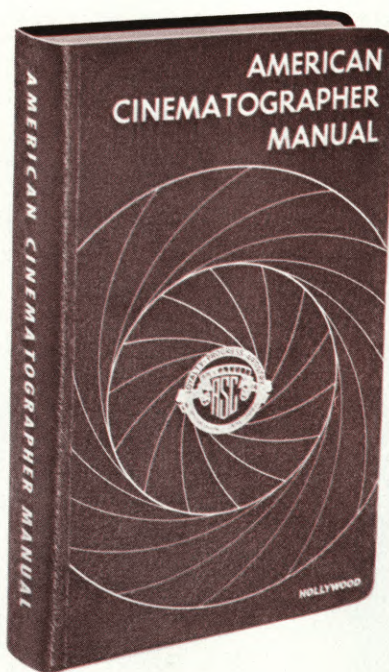
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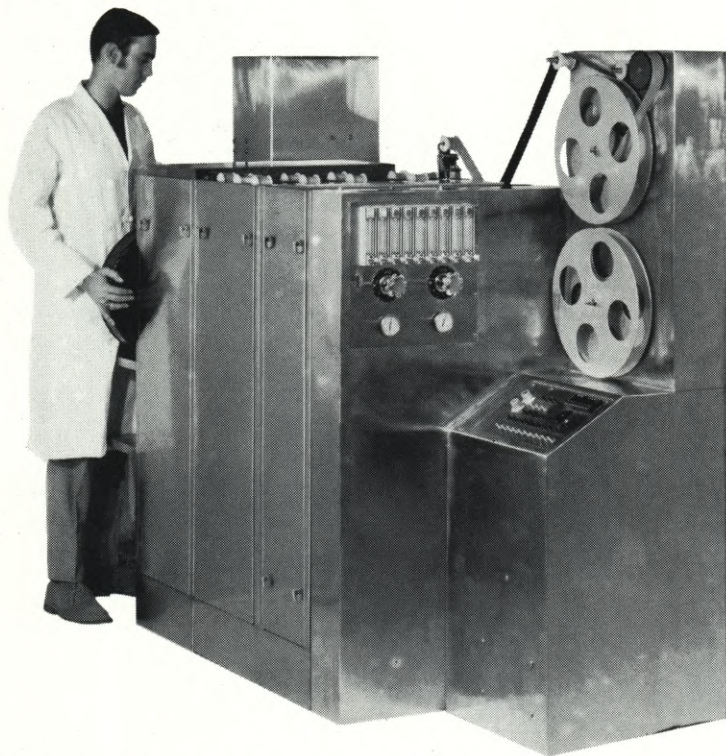
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LOW BUDGET FILM

Continued from Page 449

LaTona was appreciated here.

Because of school restrictions, we were forced to work on Saturdays and this was both an advantage and a problem. On Saturday the various attractions had their biggest crowds which helped to give the film excitement, but it also reduced our work week to one-seventh of what it should have been. This made the shooting stretch out over a longer period of time and tended to make the actors weary of the project.

If I were doing this film again, a schedule would have to be worked out which permitted a full week's continuous production, finishing the main portions of the film in a short period of time. There are several reasons for this. Props needed for continuity become lost or misplaced over a period of several months. There are only seven hours of effective daylight and if the actors arrive late, this is reduced still further. If there are delays with equipment failures or in moving from location to location more time is lost. Finally, if the weather is bad, you are delayed a whole week before you can try again.

Another change I would consider is transportation. We had to carry a complete battery of lights, sometimes four 2K's, and six 1K's with accessory cases, stands, a Miller professional tripod, two cameras, four people, film, light meters, costumes, and folding reflectors in a four-passenger Toyota sedan. This was some trick.

Had we been shooting on a straight-through schedule, it would have been possible to haul all this equipment to Buena Park, leave it in storage each night and bring it all back at one time. On very important scenes where we had an actor such as John Carradine or Andy Devine for only a day, we used all our cameras to shoot the same scene at once. This helped in editing later, and covered any chance of a malfunction in the equipment.

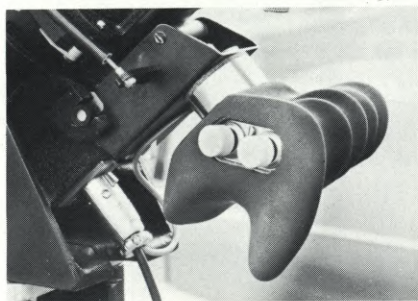
When shooting outdoors, since the family wore hats, we tried to use reflectors when possible or quartz lights with dichroic filters. This gave us shadow detail and cut down the harsh contrast of sunlight. At other times we tried to use open shade, if at all possible. The subtle lighting this afforded was worth the extra trouble and loss of higher F. stops.

We rented a special camera mount from the Miller Specialty Company for a traveling shot, since it has suction cups to grip flat metal surfaces and is easily

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adjustable. The combined weight of the mount, plus my Cine Special however, caused problems. We placed the unit on the rear deck of a Mustang convertible and shot backwards, but the sheet metal was too light and a certain amount of "bounce" resulted. This gives the scene a feeling of motion on the screen, but I would hand-hold the camera next time.

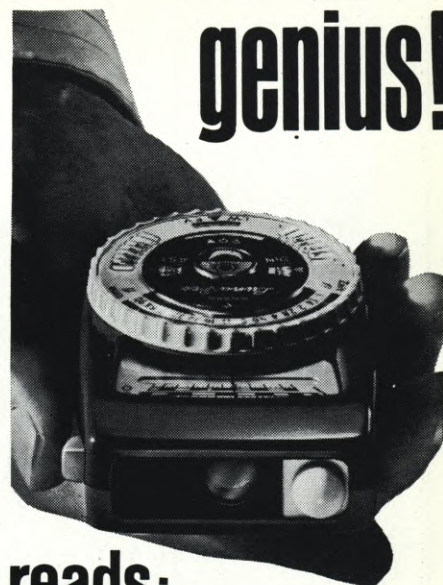
Before shooting the film, we ran some test footage on both the Cine and the Bell and Howell 70 and Scoopic to make sure the frame lines were the same and to check speeds. On a moving shot in traffic I shot the cameras at 32 fps to smooth out the bumps in the pavement and any movement on my part. This also worked well in shooting action of fish jumping through a hoop of fire as it holds the action a bit longer, giving the audience time to see clearly what is going on. This is a trick I learned from Leon Shamroy, ASC.

During the course of production we shot 14,000 feet of film. This was later boiled down to 973 feet. Even though this is quite a wide film ratio on a low budget I don't regret doing it. In the cutting room we could chose from the finest footage, and weren't forced to settle for shots that were of poor quality. In recording the sound effects for the picture, it was decided that the cost of renting a recorder, the tape used, a soundman's time, and the spill noise that was bound to creep in would make it cheaper to buy the effects later. This proved to be the case.

As an added touch, an artist was hired to create animated titles for the picture. The man, Donald Burgess, had done similar things for Saul Bass and had exceptional skills in this field. His titles could have won an award by themselves. Unfortunately, however, they were largely deleted by the client later.

In the finished film, there are 280 scenes. Over 200 of them were lit with artificial sources of light or a combination of artificial light and the sun. As is well known, smog in Southern California is a serious handicap to movie-makers. We had our share of these headaches too. On long shots it was almost impossible to hide the fact that the sky was draped with a brown scum, but a tree branch cut off some of this and helped frame the picture on a few occasions. When we couldn't find a tree, we snipped off a branch and hand held it in place.

At other times we would shoot from low angles since the sky overhead was generally clear. This resulted in a bright blue background. A haze filter helped somewhat, but on days when it was bad,



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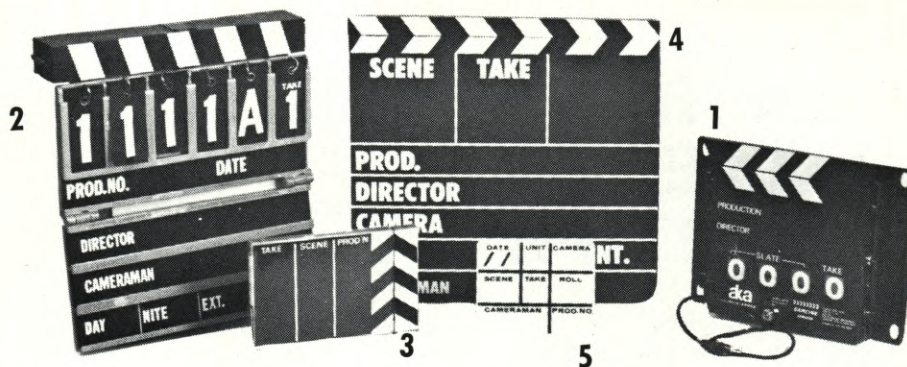
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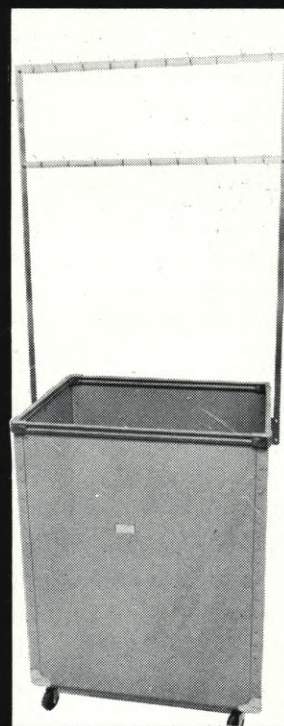
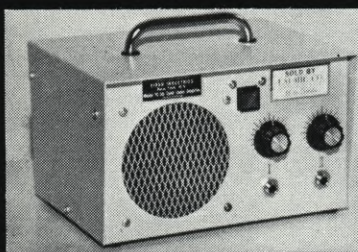
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there was little anyone could do except concentrate on close-ups and eliminate subjects that needed to be shot at a distance.

One scene in the script called for a jungle, and we found a perfect one in the vast Knott's Berry Farm complex, an ape suit was rented and a scene we had expected to take a day was finished in about two hours. It was all hand-held. Again, the freedom of movement hand-held camera work offers more than compensates for the slight amount of "jiggle" that may result.

Hollywood Film Enterprises, who handled my lab work, prepared work-prints in less than one day in many cases when the need for them was apparent. They were also very generous with advice, technical assistance, and temporary use of their projection room for client viewing of footage. When it came time for the 1st answer print, they followed my log of corrections and effects to the letter and virtually nothing needed to be changed or altered.

Music for the film was provided by Korla Pandit, an internationally known composer and organist. A giant theatre pipe organ was found which was made for Paramount Studios before the end of silent movies in the home theatre of an organ buff. Since he also had sound recording equipment, we cut the music track in one 27½ minute "take." The extra cost of having an original score was offset, I felt, by the synchronization of the music to the action on the screen. Canned music can never equal a live score, in my opinion.

Clarence Thompson, owner of Telesound Studio in Hollywood came to my rescue with the various sound effects needed for the movie. While this wasn't in my contract to Buena Park, I felt the addition of effects only served to improve the movie and create the vital image the city wanted to present to audiences. The addition of extra production values, expensive costumes, outdoor lighting, careful mixing in the Telesound Studios (which I have found second to none in the industry), and editing by Pete Appleton helped to blend five months of hard work into a finished product.

Since the completion of "BUENA PARK—JUST FOR FUN", I am even more convinced that the careful planning in the pre-production stages of all important details not only saves time, it saves money. The small producer like myself must rely on the services of people like Telesound Studios and F & B Ceco and Hollywood Film Enterprises. So the careful selection and advice of these veterans can prevent

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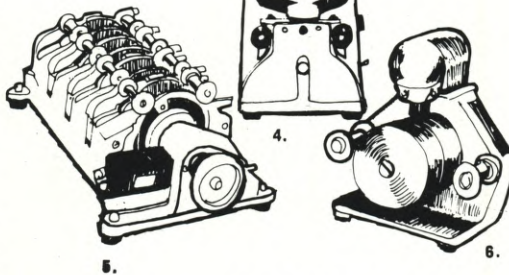
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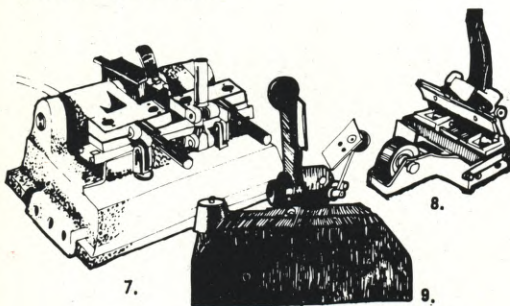
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costly mistakes and errors.

As an example, Clarence Thompson at Telesound Studios offered to test my sound equipment before going on location with a piece of test footage to make sure the "wild" sequence would match up later. It was possible to tell from his check that we were on safe ground. A roll of test film in each camera given to the lab before you begin production will also help check meters, shutters, speeds, and operation. The cost of this is less than \$20 yet there are still cameramen who rent equipment without checking it first and later discover a malfunction has ruined most of their work.

When renting a Scoopic from F & B Ceco I made it a practice to copy down the serial number of the first camera I used, then reserved that same camera each time thereafter. During the week if I hadn't used the Scoopic for a few days, we shot a test roll to make sure it was still functioning properly before working with our actors on the weekend.

As we progressed with "BUENA PARK—JUST FOR FUN", the extra complications of sound, lighting and actors required extra personnel. My production supervisor, Pat LaTona, proved there is no substitute for his job. He checked continuity, arranged for props, locations and checked rental lists. When it was needed, he shot film and ordered food.

Most small productions like ours require each person to wear a number of hats, and our actors helped unpack gear, carry it to new locations and even make their own costumes. Once when we were caught without a silk cravat, Doreen Jameson loaned us her slip which doubled nicely for the missing piece of costume.

To assure a built-in audience for the movie, Alex Goodman, the Chamber manager, signed a contract with Sterling Movies of Hollywood that guaranteed more than 200 television play dates in the first year of release. This will be an estimated audience of some 10,000,000 people. It now seems certain "BUENA PARK—JUST FOR FUN" will help sell the city to millions of tourists from all over the United States who will be making vacation plans with their families.

A promotional film need not be dull or handled in the usual trite manner. It can be fun for the audience and rewarding for the producer and cast. There was certainly never a better time for this type of film to be made. The problems and profits make this aspect of motion picture production very rewarding. ■

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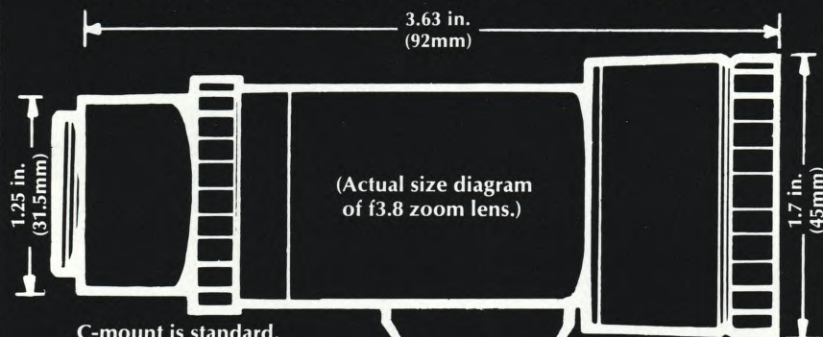
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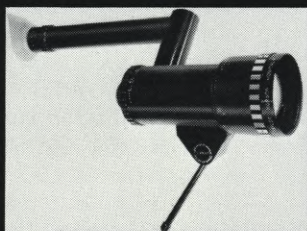
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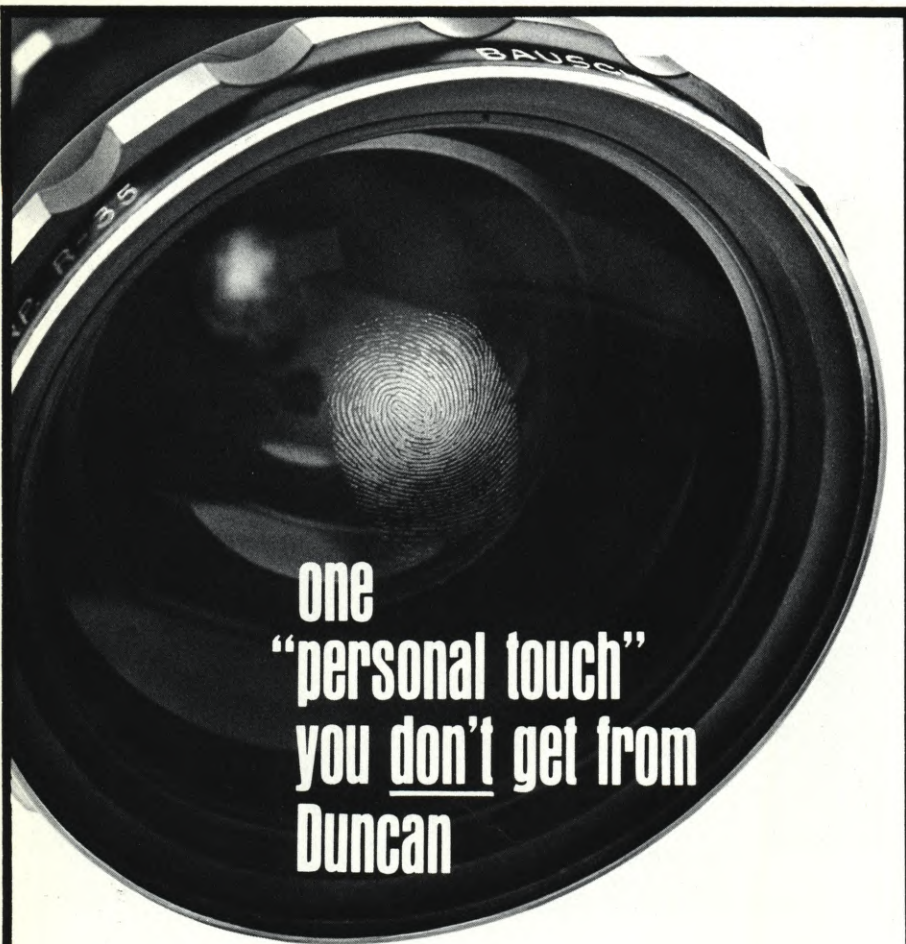
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"ERECTOR SET" CAMERA

Continued from Page 447

accomplished by installing a low current six-volt light near the film aperture. Simultaneously with illumination of the start marker, there is a six-volt output to the bloop oscillator through the sync-pulse cable.

This start marker actually eliminates the necessity of clapping at the beginning of each scene to provide synchronism. This cost \$225.00 . . . but eliminates the need for an additional man on the crew to clap the slate.

Then, to make the unit into a truly well-integrated studio unit, I added a 12.5 battery eliminator for about \$18.00 and, a 25-foot cable from the camera to my Uher 4000S (with a Rangertone Sync Head) for about \$20.00. Also, the addition of a Sound Barney for \$110.00 is a must for the studio-sound operation. This barney consists of layers of sound deadening fiberglass and wool sheet covered overall with canvas duck. The noise level is sufficiently reduced to afford filming when using directional or lavalier microphones or when shooting medium and long shots at exterior locations. And, the barney makes an excellent dust cover as well.

So, what I have now is a camera capable of hand-held and grab shooting, no-nonsense photography, which also affords me the opportunity to shoot sync-sound with 400-foot magazine capability and which literally comes apart to provide me with as much or as little capability as I want.

And, all this facility cost \$1,250.00 for the camera, \$240.00 for the magazine conversion, \$180.00 for the Bolex Mag., \$225.00 for the sync pulse generator, \$18.00 for the battery eliminator, \$225.00 for the electric start marker, \$20.00 for the connecting cable and \$110.00 for the sound barney . . . giving a grand total of \$2,268.00. To get this same facility with other equipment with the same quality and ease of operation would cost at least another thousand. The last item I added was a spirit level for about \$6.50 . . . just to keep me and the Scoopic level!

All the engineering was done by Cinema Engineering, 5625 Melrose Avenue, Hollywood, California . . . 90038 . . . talk to Paul Hinkley.

PS: As I was completing this article, I decided to make one last addition: a Bloop Oscillator for \$49.00. This will work in conjunction with the electric start marker and will put a 1000-cycle signal on the sound track at the same time the miniature light flashes the film.

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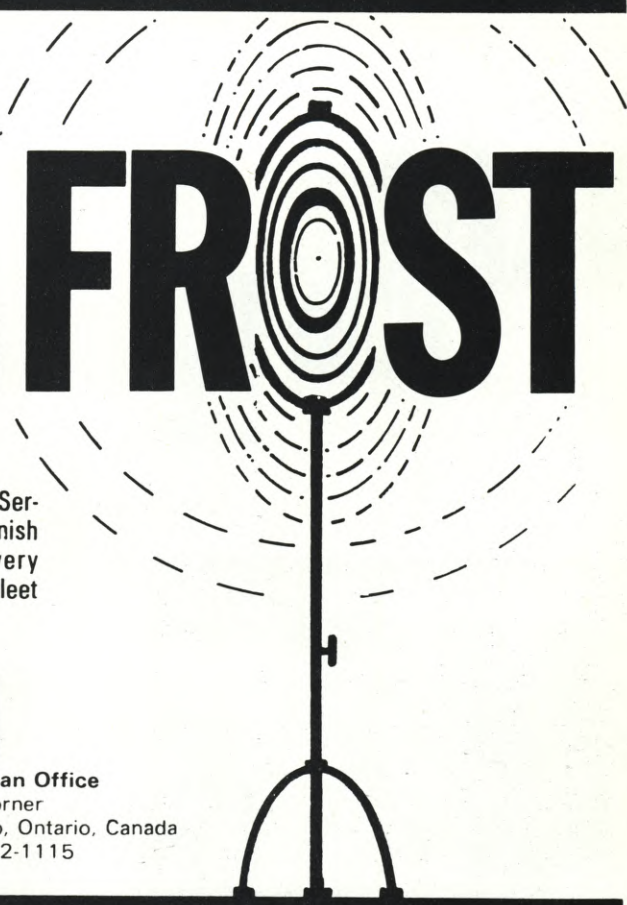
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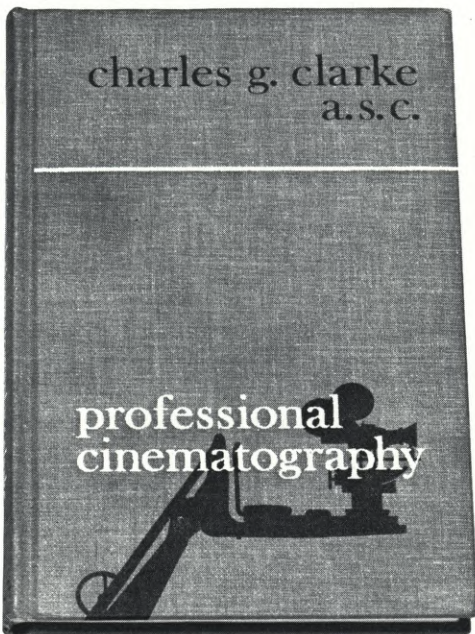


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ABOUT THE AUTHOR: Charles G. Clarke, ASC, a top Director of Photography at 20th Century-Fox for many years, and an ASC member, taught Advanced Cinematography at the University of California at Los Angeles, where he recognized a need for practical professional guidance for students striving to be the industry's future Directors of Photography. It is this need which has given rise to his publication of a book on the subject and subsequently the latest revised edition of Professional Cinematography. The first edition of this valuable book has become required reading at many universities and schools offering courses in cinematography.

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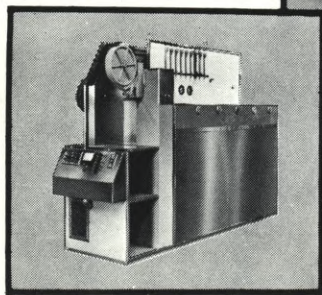
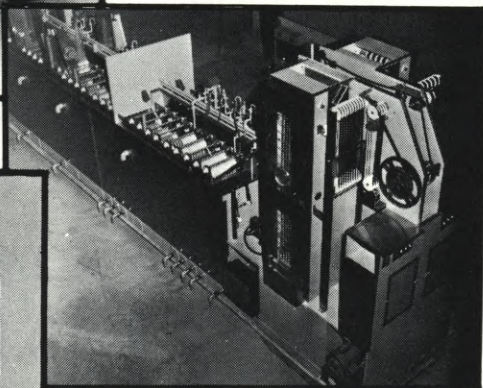
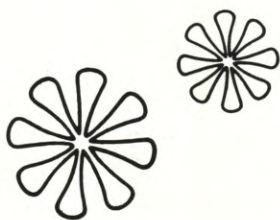
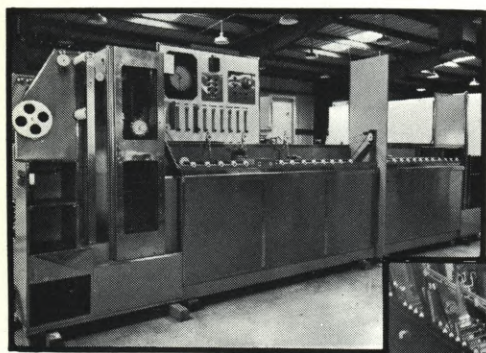
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"BUTCH CASSIDY"

Continued from Page 438

criterion as to whether anything is valid or not anyway. But, generally speaking, I prefer to place the focus on that part of the story that is important and leave the part of the story that is *not* important out of focus. Therefore, I like to focus on the people—and I like to change focus back and forth, if it can be done smoothly without calling attention to what is happening. This can help tell your story, because it directs audience attention to whatever it is you're focused upon. This is not new or anything; it's just the way I like to do it now."

I asked him about his approach to the lighting of interiors on the picture and he said: "I tried not to put too much light on inside. I don't know if I always succeeded, but there were several scenes I liked. I wish I could do a picture in which I liked all of my work, but that hasn't happened yet and I'm not sure that it ever will. Anyway, there was this one scene that is supposed to take place in a police station in Bolivia. Someone comes in from outside and talks to the people and then they all rush out. There was an F/12 light outside and a level of F/4.5 inside—way out of balance, but that's the way I feel it should be. I was using a FAY light with spun-glass diffusion for fill, and I started out with all five lamps burning. One by one, I turned all of them off. Then I chickened out and turned one of them back on to shoot the scene. It looked fine, but it might have looked better with no fill at all.

"I have a tendency to put too much light on things, and I'm trying to combat that. What I want to do is make the *film* work instead of *me*. I'd like to be able to open up the lens to expose for what it is I want to see, and damned with what I *don't* want to see.

When you've known Conrad Hall for any length of time, one of the things that impresses you most about him is his complete honesty. He is, in particular, brutally honest about himself and his work, so I was not especially surprised to hear him say: "I hate my night-for-night street scenes in 'BUTCH CASSIDY' because there's too much light on them. They're lit up like a studio lot. You tend to do that when you're working for a major studio and they load you up with so much lighting equipment—especially when it's cold. People start turning on lights and you go over and start turning them off. But it's easy to get confused about your concept and end up settling for less than

what you really want. That's something every cameraman is faced with. You don't realize at the time that you're doing wrong, even when you view the dailies. It's later, when the film's all put together and you see that street all lit up like a Christmas tree that you realize you could have done better. All you can do is try to never let it happen again—or try never to be cold when you're lighting, or settle for less than what you really think is the best."

I mentioned the famed bicycle sequence in the film, that light-hearted romp on two wheels which is a sequence that seems to stick with the audience.

"That sequence was simply having fun with the camera, as far as I was concerned," he commented. "But, in terms of mechanics it means talking somebody into shooting it at the right time of day . . . shooting just as the sun is going down, with the long shadows reaching out . . . being able to move around to locations you've picked for certain effects—like finding a fence with the slats out, and waiting for the sun to kick into the lens to create a marvelous visual effect. You have to send everyone home except the principals and work with a very small crew in a jeep so that you can move around. You don't tell anybody what to do. You just turn them loose in a field and tell them to have fun with the bicycle and chase cows, or something like that. But it's not all as haphazard as it sounds. You've got to have a very good operator and an assistant who's really sharp with the follow-focus, plus someone to use judgment with the zoom lens . . . when to go in . . . when to pull back. You should usually have two cameras going on a thing like that. It's the spontaneity that's important. That whole thing was shot with the zoom racked out to telephoto length, using heavy fog filters. We used #3 fog filters on that sequence and #2's on most of the other exteriors. Again, it was a matter of destroying the sharpness of the image."

I reminded him that his striking photography of "HELL IN THE PACIFIC" (the world's worst title!) was razor sharp almost all the way through.

"I didn't use any fog filters on that," he admitted, "but for a different reason. I didn't feel that the story warranted any beautification."

He could sense the question that was running through my mind.

"No," he said, "you certainly couldn't call 'BUTCH CASSIDY' a beautiful story—but it was, essentially, a comedy. It read like one. The script was full of hilarious one-liners, and that's the way George Roy Hill seemed to

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want to stage it. He wanted it to be clever and still have a sense of history about it. You could have done the picture in an entirely different way—made it a serious film about the phasing out of banditry, just as they did in 'THE WILD BUNCH'. But the director chose not to do it that way, so I selected a style of photography that would enhance the fun of the piece and give him what he wanted."

I commented upon the effectiveness of starting the film in sepia and then very subtly dissolving to full color in the midst of a panoramic long shot.

"That was planned precisely in the script, either by the writer or the director—I don't know which," said Hall, "but the shot in which the change takes place is something George sent me out to shoot by myself. I went out with a small crew at about 5 o'clock in the morning and shot the scene in the pre-light of dawn. It was a shot in which the sun comes up and hits them as they're riding toward the mountains. I knew that the color would not have to be toyed with, since it would look like sepia because the rays of the sun are almost that color at that time of morning. The sepia sort of melted into gold as we panned around to blue mountains in the background for a marvelous transition."

Since "BUTCH CASSIDY" is something of a period piece and many of the scenes have kerosene lamps as an apparent source, I asked him about his method of getting this effect to look realistic on the screen.

"A typical example is the sequence after the chase in which Redford and Newman are having dinner and Katherine is serving them," he said. "There are two practical kerosene lamps in the scene and we have to presume that the light is actually coming from them. Since we're shooting in color we can't get enough exposurable light from the actual flame to photograph the scene, so my approach is to hide a small peanut-type lamp (sometimes called a "gimmick") behind the flame itself. Then they take it down on the dimmer to a point where the drop in voltage will lower the color temperature to a yellowish cast nearer to the color of lamplight. Now, this creates a very hot looking flame—much hotter than it would appear in a real situation, but it does give the illusion of the flame actually lighting the scene.

"The other alternative is to beam a light down onto the lamp itself to sort of brighten it. This never looks to me quite as real as the first method, because it's not hot enough to cast that much

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light onto the actor's face. Neither one of them is really satisfactory to me, but they are the two ways that are used most often.

"Of course, there will come a time when we won't have to worry about creating such effects to make them look real. Someday Eastman will make a film that is as fast as the human eye, and then there won't be any actual lighting involved. You'll simply be concerned with the story and the telling of it from your point of view. I can hardly wait for that day."

He had a mischievous gleam in his eye, and he might have been putting me on.

But then, again—he might have meant it . . .

THE STORY OF "OSCAR"

Continued from Page 422

published on Feb. 18 and the first presentations were held at the Hollywood Roosevelt Hotel on May 16. Since the winners had been known for several weeks, there were no surprises. From that time on, however, suspense became an element of every program.

Fifteen golden statuettes were presented by President Douglas Fairbanks and Vice President William C. DeMille, chairman of the program. All of the winners were men except a young girl named Janet Gaynor, who was honored for acting achievements in three pictures: "Sunrise", "Seventh Heaven" and "Street Angel".

Miss Gaynor was there to receive her Oscar but Emil Jannings, cited for his acting in "The Way of All Flesh" and "The Last Command", had left Hollywood for his home in Berlin. He had been permitted to take his Oscar with him. He never returned to Hollywood; he died in Germany in 1950.

"Wings" was voted the best picture of the year 1928, and an Award went to "Sunrise" for artistic production quality. Frank Borzage won an Oscar for his direction of "Seventh Heaven" and a comedy direction Award was presented to Lewis Milestone.

Even during that first year the Academy, recognizing the need for special honorary Awards, presented two—one to Warner Bros. for producing the first talkie, "The Jazz Singer", and the other to Charles Chaplin for producing, directing, writing and starring in "The Circus".

A hint of things to come at future Awards programs was the appearance of Al Jolson—not to receive an Award, but solely as an entertainer. Many other

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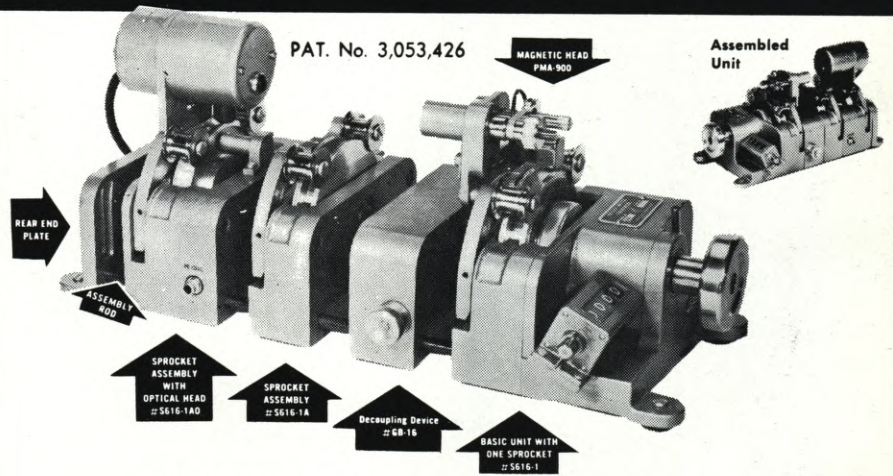
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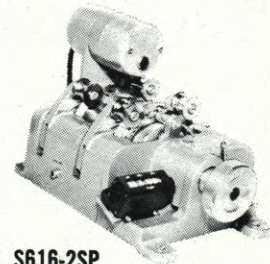


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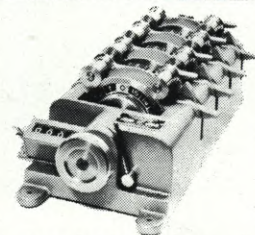
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great personalities were to follow him.

The first Awards ceremony went off with little exploitation, but within a week the Academy Awards were the talk of the industry. When the second Awards program was held on April 3, 1930 (1928-29), the little golden statuette was a star in his own right. Interest was so high that a Los Angeles radio station did an on-the-spot broadcast for an hour. The Awards have had broadcast coverage ever since.

The list of achievements honored that year was reduced to seven—two for acting and one each for best picture, direction, writing, cinematography, and art direction. A musical, "Broadway Melody", was named best picture and the late Warner Baxter received the Best Actor Award for his performance in a Western, "In Old Arizona".

Mary Pickford won an Oscar for her work in "Coquette". Frank Lloyd was honored for his direction of "The Divine Lady"; among his competitors was Lionel Barrymore, who had directed "Madame X".

The third presentations were held that same year, in order to eliminate the time lag after the Academy's year-end, on July 31, 1930. The Awards continued on the split-year basis until the 1934 Awards year was made to coincide with the calendar year.

In spite of a \$10-a-plate price, the third banquet, held on Nov. 5, 1930, was a sellout. A beautiful but much flustered Norma Shearer was honored that year for her performance in "The Divorcee"; George Arliss received an Oscar for his equally moving performance in "Disraeli". "All Quiet on the Western Front" was named the Best Picture, and a second Award was given to its director, Lewis Milestone.

It was decided that winners of previous years' Awards should present the Oscars at the fourth banquet, held in November, 1931. The affair had assumed national importance by this time; Vice President Charles Curtis came from Washington to bring his personal greetings and to convey those of President Herbert Hoover.

A boy named Jackie Cooper had been nominated as that year's best actor—the first juvenile so honored—for his role in "Skippy". He was seated next to Marie Dressler at the banquet. He fell sound asleep on Miss Dressler's ample shoulder. The Award in the acting category went to Lionel Barrymore; as he accepted the statuette for his work in "A Free Soul", Barrymore lauded his competitors, including Jackie—who slept peacefully through the speech.

Continued on Page 478

BOOK REVIEW

THE TECHNIQUE OF EDITING 16MM FILMS By John Burder. New York: Hastings House, Publishers 1968. Illustrated. 152 pages.

This book is an excellent companion to Ernest Walter's text on editing 35mm film. There is a difference in handling and editing 16mm and 35mm as this book clearly demonstrates even though the basic principles are the same.

The author has essentially written a how-to-do-it book. He is mainly concerned with the actual craftsmanship of editing 16mm film rather than any artistic discussion of film editing. This is all to the good because there have been a number of excellent books on the theory of editing but very few on the down-to-earth labor that it takes to put a 16mm production together.

Detailed attention is given in this book to sound editing because this often proves to be the most complex and hazardous to the embryo editor. The author examines the many types of soundtrack, narration, effects and arrangements for dubbing alongside the same operations on the picture side.

There is considerable detail on negative cutting methods or assembly of camera original materials into A and B (or C and D) rolls. The preparation and use of opticals and titles are covered plus the day-to-day operation of the cutting room.

Mr. Burder is a British film technician and writes mainly from the British point of view. This presents no real problems in this book since the differences in operations in this country and England are slight. But there are differences and this should have been explained since this book has been aimed at the American market. For example, the method of marking a workprint for opticals is different. Also, the author discusses various film-examining machines, but for some unknown reason leaves out one of the most popular—the Moviola. These are very minor points but they are things that the American reader is sure to notice. The author has included an excellent glossary which does much to clear up the differences in terms used in the United States and England.

Production of motion pictures in the 16mm format is on the increase. This book is certain to be a welcome reference and textbook to those film-makers who work with 16mm film.

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THE STORY OF "OSCAR"

Continued from Page 476

When the best-actress Award was announced and Miss Dressler was named for her role in "Min and Bill", she eased Jackie from her shoulder onto his mother's lap and arose to receive her statuette from Norma Shearer.

Miss Shearer, incidentally, might have had the embarrassing task of handing herself the Oscar, since she also was a nominee. After that the Academy avoided such awkward situations by having actresses present Awards to actors and vice versa.

Other Awards for that year went to "Cimarron" as the best picture and Norman Taurog as director of "Skippy".

Actor Lawrence Grant became the Academy's first master of ceremonies at that 1931 event. Many great stars have had the honor since. Bob Hope has been master of ceremonies more often than any other; he made his 14th appearance in this capacity in 1968.

Jerry Lewis has served three times; Jack Benny, James Stewart, and David Niven twice each. Others have been Conrad Nagel, Will Rogers, Irvin S. Cobb, Lionel Barrymore, George Jessel, Bob Burns, Director John Cromwell, Robert Montgomery, Paul Douglas, Fred Astaire, Danny Kaye, Donald O'Connor, Fredric March, Thelma Ritter, Claudette Colbert, Joseph Mankiewicz, Celeste Holm, Jack Lemmon, Rosalind Russell, Sir Laurence Olivier, Tony Randall, Mort Sahl, Frank Sinatra, and even Donald Duck.

Oscar got his name in 1931. Margaret Herrick, today the executive director of the Academy, saw the statuette and studied it carefully, "Why, he looks like my Uncle Oscar," she said.

Sitting in an adjoining office was a newspaper correspondent who wrote "Academy employees have affectionately dubbed their famous gold statuette Oscar." The nickname stuck and became world-famous.

The 1932 program was enlivened by the announcement that there was a tie vote in the actor division between Fredric March for "Dr. Jekyll and Mr. Hyde" and Wallace Beery for "The Champ".

Each was handed a statuette while one Academy official looked on in horror. The supply of statuettes was now one short. So the man raced to the Academy office and back with an extra trophy just in time for the Best Picture Award. Since then, there have always been more than enough Oscars on the stage.

The Short Subject Awards came into being that year and Walt Disney made the first of many trips to the podium to receive Oscars for the year's Best Cartoon. He also received an honorary statuette for creating Mickey Mouse.

Before his death in 1966 Disney collected another 24 Oscars. He also received the Thalberg Award and three Honorary Awards, for a grand total of 30—more than anyone else, by far.

Other Awards for 1931-32 went to Helen Hayes for "The Sin of Madelon Claudet", to director Frank Borzage for "Bad Girl", and to "Grand Hotel" as the Best Picture.

Will Rogers convulsed the 1934 banquet with his irreverent humor. He wound up the show by inviting nominees May Robson and Diana Wynyard to the speaker's table.

The room was hushed, expecting another tie. But Rogers kissed them both, told them they had delivered sparkling performances, then announced that the Award went to Katharine Hepburn, who was absent, for "Morning Glory".

Charles Laughton, yet to come to America, won for his performance in "The Private Life of Henry VIII", and "Calvacade" was honored as the best picture.

Director Frank Capra had an embarrassing experience that year. Nominated for the first time, Capra, later to win three Awards, got to his feet and started for the rostrum when Rogers said, "Come and get it, Frank."

Capra was about 40 feet from his chair when he realized that Rogers was motioning to Frank Lloyd, the real winner (for "Cavalcade"). Capra later described his return to his seat as "the longest crawl in history."

It was one of the many unrehearsed incidents which have highlighted the Awards through the years.

In 1935, when achievements for 1934 were honored, "It Happened One Night" swept the Awards. Miss Colbert, not expecting to win, was getting on a train for New York at the moment her name was announced as winner of the Best Actress Award.

She was whisked off the train and Santa Fe officials were induced to delay its departure while a taxi sped her to the Biltmore Hotel, fortunately only a short distance away. Irvin S. Cobb cut short a presentation to Shirley Temple to give Miss Colbert her Oscar.

She said, "I'm happy enough to cry, but can't take the time. A taxi is waiting outside with the engine running." She departed and the show resumed.

Clark Gable, male star of "It Hap-

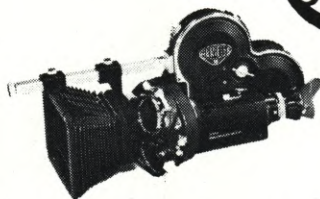


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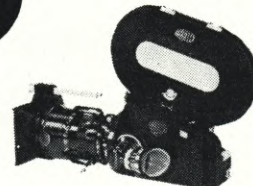
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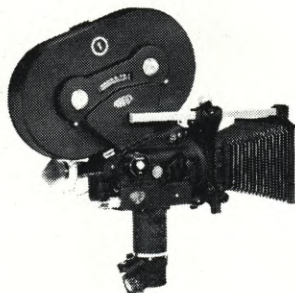
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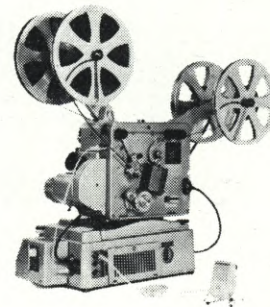
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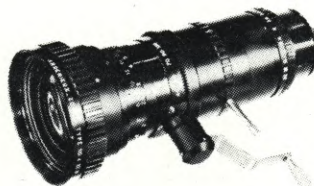
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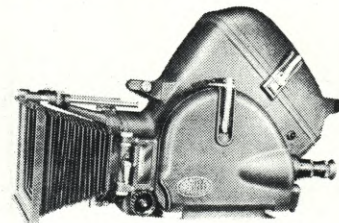
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pened One Night", and Frank Capra, its director, also received Awards that night. Miss Temple's Oscar was the first honorary juvenile Award.

Since then, other child actors who have received the miniature statuette include Mickey Rooney, Deanna Durbin, Judy Garland, Margaret O'Brien, Peggy Ann Garner, Claude Jarman, Jr., Bobby Driscoll, Vincent Winter, and Jon Whitely.

Bette Davis became an official write-in candidate that year; many thought her performance in "Of Human Bondage" rated a nomination. (The Academy now has a rule forbidding write-ins in the final balloting.) And three new categories—Film Editing, Musical Scoring, and Best Song—were added to the voting that year, which was the first that Price Waterhouse & Co., international firm of public accountants, was employed to count the ballots to ensure secrecy of the results.

The 1936 affair, honoring achievements for 1935, gave the Best Picture Awards to "Mutiny on the Bounty", the Best Actress accolade to Bette Davis for "Dangerous", the Best Actor Award to Victor McLaglen for "The Informer", and the Best Direction Award to John Ford, also for "The Informer".

The Academy began recognizing motion-picture pioneers that year by presenting an honorary Oscar to David Wark Griffith. In later years it similarly honored Mack Sennett, Harry M. Warner, Douglas Fairbanks, Walter Wanger, Ernst Lubitsch, Adolph Zukor, Sid Grauman, Col. William Selig, Cecil B. DeMille, Jean Hersholt, Louis B. Mayer, Joseph M. Schenck, Joseph I. Breen, "Broncho Billy" Anderson, Buster Keaton, Lee De Forest, Stan Laurel and Yakima Canutt.

Highlights of the 1937 Show were the presentation, for the first time, of Oscars to a supporting actor and supporting actress. The honors went to Walter Brennan for "Come and Get It" and Gale Sondergaard for "Anthony Adverse".

Other winners that year were "The Great Ziegfeld" as Best Picture; Paul Muni as Best Actor for "The Story of Louis Pasteur"; Louise Rainer as Best Actress for "The Great Ziegfeld", and Frank Capra as Best Director for "Mr. Deeds Goes To Town".

In 1938 Miss Rainer became the first player, male or female, to repeat as an Oscar winner and the only actress to win in two consecutive years. Later in Academy history Bette Davis, Olivia de Havilland, Vivien Leigh, and Ingrid Bergman joined Miss Rainer as two-time Academy laureates.

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Other winners that year, which honored achievements for 1937, included Spencer Tracy as Best Actor for "Captains Courageous", Joseph Schildkraut as Best Supporting Actor for "The Life of Emile Zola", Alice Brady as Best Supporting Actress for "In Old Chicago" and Leo McCarey as Best Director for "The Awful Truth". The Best Picture Award went to "The Life of Emile Zola".

The Irving C. Thalberg Memorial Award, established in 1936, went to Darryl F. Zanuck. Over the years this honor, given for consistent high quality of production, also has gone to Hal B. Wallis, David O. Selznick, Walt Disney, Sindey Franklin, Samuel Goldwyn, Jerry Wald, Arthur Freed, Cecil B. DeMille, George Stevens, Buddy Adler, Jack Warner, Stanley Kramer, Sam Spiegel, William Wyler, Robert Wise and Alfred Hitchcock.

The year 1939 was one of repeats. Bette Davis, for "Jezebel"; Spencer Tracy, for "Boys Town", and Walter Brennan, for "Kentucky", all got their second Oscars. Fay Bainter won as Best Supporting Actress for "Jezebel", and the Best Picture was "You Can't Take It With You". Miss Bainter also had been nominated as Best Actress for her performance in "White Banners". She was the first actress to run in two categories in the same year.

Another highlight that year, which honored achievements for 1938, was director Frank Capra's third Oscar for "You Can't Take It With You". Walt Disney received an honorary Oscar for Snow White and seven little ones for the Dwarfs, and Edgar Bergen received a wooden statuette with movable jaws in honor of his wooden friend, Charlie McCarthy.

For several years before 1940, results were given in advance to newspapers for release at 11 p.m., but in 1940 guests arriving for the affair, honoring 1939 achievements, could buy the 8:45 p.m. edition of a newspaper which announced the winning achievements.

So few were surprised when "Gone With The Wind", Robert Donat for "Goodbye Mr. Chips", Vivien Leigh for "Gone With The Wind", Thomas Mitchell for "Stagecoach", Hattie McDaniel for "Gone With The Wind", and Director Victor Fleming for "Gone With The Wind" were honored.

Miss McDaniel was the first Negro to be voted an Oscar. Since then Sidney Poitier has won an acting Award, Dorothy Dandridge was nominated, and in 1948 an Honorary Award was given James Baskette for his portrayal of

Continued on Page 484



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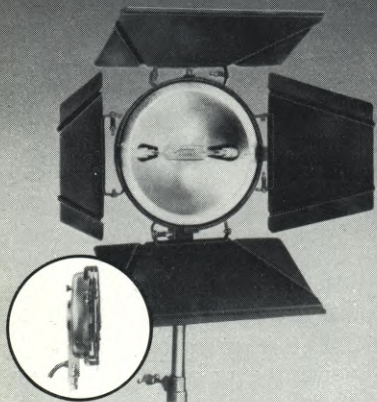
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THE MAKING OF "OMEGA"

Continued from Page 453

one. They told me that only two such magazines had ever been made, and that someone by the name of Jan Buehre was renting one from them. I went over to see Jan and he let me use the magazine over the weekend. As it turned out, he also had a 16/35mm Acme optical printer and was doing opticals for commercials, television series, almost anything one can think of, and of excellent quality.

After watching him operate the printer for some time, I asked him to let me rent it from him on an hourly basis when he was not using it and he finally agreed to do so. Had he not let me rent it from him in this way, I would never have been able to complete the film. With this machine I was able to do many more effects than I would have been able to do with a homemade printer. In fact, my film would have been nothing without the effects that I was able to produce with this equipment. Also, the registration of the printer was absolutely perfect, and I found the registration in 16mm to be as good as 35mm, even when shooting with an Arriflex or Bolex.

Operating the printer was quite difficult at first, for there were many things I had to remember. To my surprise I discovered that the machine normally ran at an extremely slow speed: six feet per minute; and thus it took quite a while to print an effect which required three to ten passes through the printer. The main thing I had to watch for were "hairs" in the aperture. In 16mm, these "hairs" or strands of fiber from the cleaning pad will somehow get into the aperture and so one has to be constantly on the lookout for them. I had to re-print many composites because of them. A typical sample of the sort of printing I had to do is exemplified in my rotoscoped, traveling matte shot.

The positive sequence that I rotoscoped was actually printed on an ordinary contact printer. I had two strips of film, one the positive print and the other, the original negative. I took the animated female matte original and made a male matte positive in the optical printer. Then I took the female matte again and bi-packed it with the positive and shot it on 7362 developed as a reversal. Next I took the original negative sequence and bi-packed it with the female matte, shooting it on 7362, developed as a reversal. What I ended up with was a shot of a figure surrounded with black instead of his actual back-

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ground. Then I took the background made from the glass and phased it in the printer through a Wratten 29 red filter, 61 green filter and 47B blue filter.

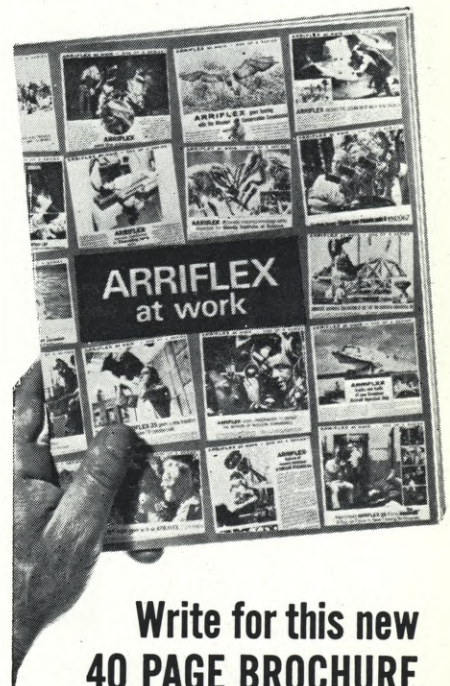
After the ECO was developed, I bi-packed it with the male matte and shot it on ECO. Next, I rewound the film and ran the matted positive through with the 29 red filter and then ran the matted negative through with the 47B filter. I also had another matte of a glowing band which was run through. Thus, what was finally produced was a composite of a figure in red and blue, having a glowing band of light around his wrist with multicolored, moving shapes in the background. As one can see, making these composite images is extremely difficult, to say the least.

I would like to conclude this article by saying that making this particular film would have been impossible without the aid of an optical printer. I firmly believe that this is a basic filmmaker's tool, and that every filmmaker should have access to one. There is so much that can be done with this machine. I feel, also, that the field of special effects is only in its infancy, and that more trained people are needed to develop it further. I believe, too, that every film school ought to have an optical printer, so that the students can create their own special effects, learning the problems involved and how to solve them. As we all know, most film students are not wealthy, and so they cannot go out and have any effects done at a lab. Therefore, they usually do not incorporate such effects into their productions, which is unfortunate, for there is so much that can be done with them.

Most film schools, of course, do not have the funds to rent or purchase an optical printer for student use. (I believe that the least expensive model costs about \$40,000.) And so, unfortunately, the students will never have the opportunity to work with this magnificent machine.

Despite the tremendous amount of time and work involved, I consider myself very lucky to have had the chance to do so in the making of "OMEGA". Perhaps some of the commercial companies that have optical printers, recognizing the need to train a new generation of special effects experts, will make this equipment available to qualified student filmmakers at little or no cost during off hours, so that this fascinating art will not die, but will grow as the motion picture industry continues to grow. ■

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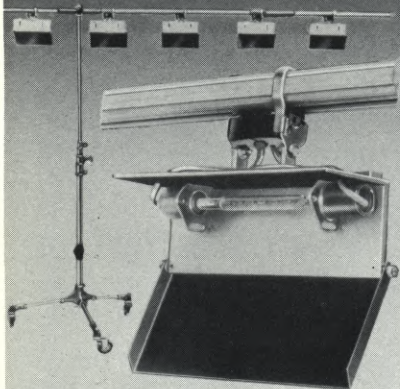
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THE STORY OF "OSCAR"

Continued from Page 481

Uncle Remus on the screen.

Novelist Sinclair Lewis accepted a posthumous writing Award for Sidney Howard for his screenplay of "Gone With The Wind". Lewis, who had played a small role in the film, made an amusing acceptance speech: "As an actor, I know the value of writers. Without their imagination and eloquence, which produce the words we speak, we actors would be nothing."

The Special Effects Award came into being that year. The first went to 20th Century-Fox for "The Rains Came".

The boo-boo on the news release in 1940 brought into being the sealed-envelope system for the 1941 Awards. It has been used ever since. A record crowd arrived early to hear a special radio message to the Academy from President Roosevelt. James Stewart won the Best Actor Award for his performance in "The Philadelphia Story". Several days later he was in uniform, the first major Hollywood star to enlist.

That year "Rebecca" was the Best Picture and Ginger Rogers, theretofore a dancer, was named the Best Actress for her dramatic work in "Kitty Foyle". Walter Brennan won the Best Supporting Actor Award for "The Westerner" and became the only player ever to win three Oscars. The Best Supporting Actress Award went to Jane Darwell for "The Grapes of Wrath", and director John Ford won his second Oscar for the same film.

War came before the next banquet in 1942, and the stars and patrons who had worn gorgeous ermine wraps, evening gowns, and orchids to previous dinners were asked to dress informally.

Wendell Willkie was a speaker at this event. James Stewart returned in uniform to present an acting Award to Gary Cooper for his title-role portrayal in "Sergeant York". Donald Crisp was in uniform to receive the Best Supporting Actor Award for his work in "How Green Was My Valley", which was named the Best Picture.

Mary Astor won Best Supporting Actress honors for "The Great Lie". John Ford won his third directorial Oscar for "How Green Was My Valley" and for the third time was absent; this time he was at sea, making movies of naval battles. Documentary films had come into their own and were placed on the ballot for the first time.

The big story that year was sister versus sister. Joan Fontaine and her sister Olivia de Havilland were nomina-

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ted for the Best Actress Award. Miss Fontaine won, for "Suspicion".

The Oscar was made of plaster for four years, starting with the 1943 program, which honored achievements for 1942, since metal was an essential war material. After the war the plaster statuettes were exchanged for metal ones.

Winners that year were "Mrs. Miniver", James Cagney for "Yankee Doodle Dandy", Greer Garson for "Mrs. Miniver", Van Heflin for "Johnny Eager", and supporting actress Teresa Wright for "Mrs. Miniver". Miss Wright also ran in the Best Actress category that year, for "Pride of the Yankees". No performer ever has won in two acting categories in the same year.

William Wyler's wife accepted his Award as best director for "Mrs. Miniver". That night Major Wyler was on a bombing raid over Germany.

The 1943 ceremonies, honoring 1942 achievements, was the last to be staged at a banquet. Hollywood considered it ridiculous to dine on chicken under glass when food was being rationed. The 1944 program was held at Grauman's Chinese Theater and Oscars were given to "Casablanca", Paul Lukas for "Watch on the Rhine", Jennifer Jones for "The Song of Bernadette", Charles Coburn for "The More the Merrier" and Katina Paxinou for "For Whom the Bell Tolls". Director Michael Curtiz won an Oscar for "Casablanca".

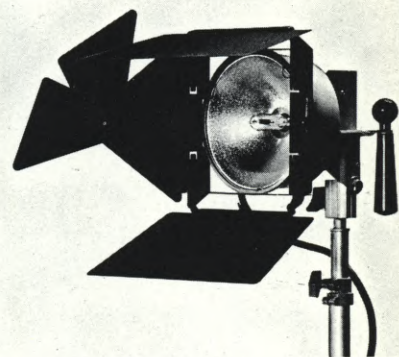
The entire program went on network radio for the first time the following year. "Going My Way" was voted the Best Picture, and won acting Awards for Bing Crosby and Barry Fitzgerald (supporting actor) and the direction Award for Leo McCarey. Fitzgerald was up for both Best Actor and Best Supporting Actor Awards for the same role. Rules were then adopted to make it impossible for this ever to occur to another actor.

Ingrid Bergman was voted Best Actress for "Gaslight" and Ethel Barrymore as Best Supporting Actress for "None But the Lonely Heart". This made Lionel and Ethel Barrymore the only brother and sister to win Oscars. John Barrymore was never even nominated.

By 1946 the war was over and stiff shirts returned. The big winner that year was "The Lost Weekend", which also brought Oscars to its star, Ray Milland, and its director, Billy Wilder. James Dunn, for "A Tree Grows in Brooklyn", and Anne Revere for "National Velvet", won the supporting Awards.

Joan Crawford missed the suspense of the actual ceremonies that year because she was sick in bed when her

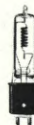
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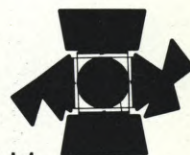
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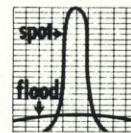


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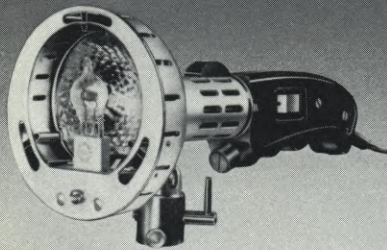
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name was announced as best actress for "Mildred Pierce". Being at home didn't ease the tension for her; she said later "I don't see how anyone could ever live through this suspense a second time."

The Academy Awards Presentations occasionally provide a touch of pathos. It's unlikely, however, that many will produce a more poignant moment than one in 1947, when Harold Russel won two Awards for his role in "The Best Years of Our Lives".

He held them proudly in his two artificial hands when he stepped from the podium after being honored as Best Supporting Actor and receiving a special honorary Oscar for bringing hope and courage to his fellow veterans.

"The Best Years of Our Lives", named the Best Picture, also brought Fredric March and director William Wyler their second Oscars. Other winners that year, which honored achievements for 1946, were Olivia de Havilland for "To Each His Own" and Anne Baxter for "The Razor's Edge".

Sir Laurence Olivier was voted an honorary statuette for producing, directing and starring in "Henry V".

The 20th Awards gave Oscars to Ronald Colman for "A Double Life", to Loretta Young for "The Farmer's Daughter", to Celeste Holm for "Gentlemen's Agreement" and to Edmund Gwenn for "Miracle on 34th Street".

In accepting his Award, Gwenn, who had played Santa Claus in the film, said: "Now I know there *is* a Santa Claus." Elia Kazan took the Best Director Award for "Gentlemen's Agreement", which won the Best Picture honors.

That year established another precedent—honoring a foreign-language film. The Award went to "Shoe-Shine". Since then, Oscars have gone to "Monsieur Vincent", "The Bicycle Thief", "The Walls of Malapaga", "Rashomon", "Forbidden Games", "Gate of Hell", "Samurai", "La Strada", "The Nights of Cabiria", "My Uncle", "Black Orpheus", "The Virgin Spring", "Through A Glass Darkly", "Sundays and Cybele", "8-1/2", "Yesterday, Today and Tomorrow", "The Shop on Main Street", "A Man And A Woman" and "Closely Watched Trains".

In 1949, when achievements for 1948 were honored, "Hamlet" became the first British production ever named Best Picture. Sir Laurence Olivier won an Oscar as Best Actor for his work in the film to make himself and Vivien Leigh, a previous winner, the only husband and wife so honored.

Walter Huston and his son John Huston won as Best Supporting Actor

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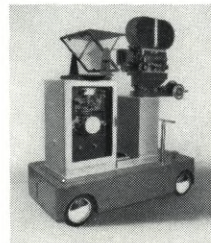
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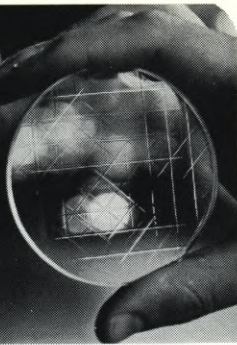
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and Director on the same film, "The Treasure of The Sierra Madre", and became the only members of the same family to win Oscars in the same evening. Claire Trevor was named Best Supporting Actress for "Key Largo" and Jane Wyman won the Best Actress Award for "Johnny Belinda", in which she played a mute.

She said simply, "I kept my mouth shut once. I think I'll do it again."

The Academy thought it was time that recognition be given to costumes in motion pictures, and added Costume Design as a voting category. Edith Head now leads the winners in this class with seven Oscars.

The following year Olivia de Havilland won a second Oscar for her performance in "The Heiress". Broderick Crawford entered the charmed circle for the first time for his work in "All the King's Men", which also won as Best Picture and brought the Best Supporting Actress Award to Mercedes McCambridge, who held out hope for all performers by saying "To every waiting actor, let me say 'hold on'. Look what is waiting."

Director Joseph Mankiewicz won an Oscar for "A Letter to Three Wives" and Fred Astaire was among those who received honorary statuettes that year.

At the Awards ceremony in 1951, honoring achievements for 1950, "All About Eve" won as Best Picture; George Sanders, Best Supporting Actor, and Joseph Mankiewicz, Best Director, were honored for the same film, which received 14 nominations—an Academy record.

Josephine Hull was the Best Supporting Actress for "Harvey". The Best Actress Award went to Judy Holiday for "Born Yesterday" and Jose Ferrer was named Best Actor for "Cyrano de Bergerac".

The next year three acting Awards went to players in "A Streetcar Named Desire"—Vivien Leigh, Best Actress; Karl Malden, Best Supporting Actor; and Kim Hunter, Best Supporting Actress. Humphrey Bogart was named Best Actor for "The African Queen". The musical "An American in Paris" was voted Best Picture.

George Stevens won the Best Director Award for "A Place in the Sun", and Gene Kelly won an honorary Award.

The year 1953, when achievements for 1952 were honored, marked a milestone in Oscar's life, as the Awards Program in its entirety was broadcast on television for the first time. Some 80 million viewers saw "The Greatest Show on Earth", Gary Cooper for "High

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Noon", Shirley Booth for "Come Back, Little Sheba", Anthony Quinn for "Viva Zapata!", Gloria Grahame for "The Bad and the Beautiful", and director John Ford for "The Quiet Man" win the Oscars.

Cooper's Oscar was his second, making him, Fredric March, and Spencer Tracy the only two-time winners in the Best Actor category. Bob Hope and Harold Lloyd were among the recipients of honorary Awards that year.

In 1954, when 1953 achievements were honored, "From Here to Eternity" was cited as the Best Picture and Frank Sinatra and Donna Reed received supporting Awards in that film. William Holden received the Best Actor Award for "Stalag 17", and Audrey Hepburn, in her first starring role on the screen, was voted Best Actress for "Roman Holiday". Director Fred Zinnemann was honored for "From Here to Eternity".

Marlon Brando, after being nominated without winning for the three previous years, got an Oscar in 1955 for "On the Waterfront". That picture won as Best Picture and brought a Best Supporting Actress Award to Eva Marie Saint and the Best Director Award to Elia Kazan.

Edmond O'Brien was honored for his supporting role in "The Barefoot Contessa" and Grace Kelly, tearfully, accepted a statuette as Best Actress for "The Country Girl".

"Marty", a small-budget picture (reported as less than \$400,000), was a big winner in 1956. It was voted Best Picture, and Ernest Borgnine, who had been playing villains on the screen, was named Best Actor as its hero. Director Delbert Mann won an Oscar for the same film.

In 1957 Ingrid Bergman won her second Oscar, this time for "Anastasia". In Paris, she had intended to listen to the program by radio but had been so nervous she took sedatives—and she was sound asleep through all the excitement of her winning.

At this 1957 ceremony, honoring 1956 achievements, Yul Brynner was honored for his acting in the musical "The King and I". The Best Supporting Actor Award was carried away by Anthony Quinn for playing Gauvain in "Lust for Life", his second such Award.

Dorothy Malone won the Best Supporting Actress Award for "Written on the Wind". The Best Picture Award that year went to "Around the World in 80 Days", and director George Stevens won for "Giant".

The 1958 presentations saw "The Bridge on the River Kwai" winning as

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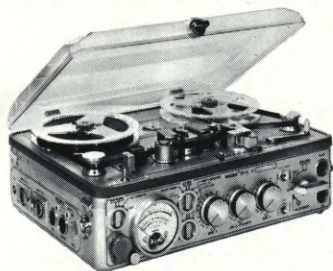
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Best Picture. Alec Guinness, star of that film, heard in England that his performance had been named best of the year. And a comparative newcomer to the screen, Joanne Woodward, was presented the Best Actress Oscar for "The Three Faces of Eve".

A former television comedian, Red Buttons, won the Best Supporting Actor Award for "Sayonara" and Miyoshi Umeki won the Best Supporting Actress honor for the same film. Director David Lean also received an Oscar for "The Bridge on the River Kwai".

In 1959 Susan Hayward won the Best Actress Award for her performance in "I Want to Live!" She had been nominated, without winning, in four previous years. (Bette Davis leads all performers, male and female, with nine nominations.)

Others honors that year went to "Gigi" as Best Picture, Vincente Minnelli for his direction of that film, Burl Ives for "The Big Country", and Wendy Hiller for "Separate Tables".

The 1959 Awards were highlighted by the record number of statuettes won by "Ben-Hur"—11, including the Best Picture Award and others for art direction, cinematography, costume design, William Wyler's direction, film editing, music scoring and sound.

Contributing to the total were Charlton Heston, who was voted Best Actor, and Hugh Griffith, Best Supporting Actor.

Simone Signoret won for her performance in "Room at the Top", and Shelley Winters won the Best Supporting Actress Oscar for her performance in "The Diary of Anne Frank."

The 1961 ceremonies, honoring 1960 achievements, were held in the Santa Monica Civic Auditorium. The move was dictated by the fact the Hollywood Pantages Theatre had reduced its seating capacity for a special engagement and no other auditorium of comparable facilities was available in the Los Angeles area. The television and radio show were commercially sponsored for the first time in three years, and shifted from NBC to the ABC network.

Burt Lancaster, for "Elmer Gantry", and Elizabeth Taylor, for "Butterfield 8", were the big winners that year. Supporting honors went to Peter Ustinov for "Spartacus" and Shirley Jones for "Elmer Gantry".

Selected as the best picture of 1960 was "The Apartment", which also brought two Oscars to its creator, Billy Wilder, for direction and (with collaborator I.A.L. Diamond) for story and screenplay written directly for the screen.

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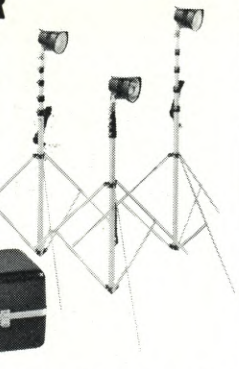
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The story of the 1962 Presentation, honoring 1961 achievements, was "West Side Story". The musical won a total of 10 Oscars, including Best Picture, Best Supporting Actor (George Chakiris), Best Supporting Actress (Rita Moreno) and Best Directors (Robert Wise and Jerome Robbins).

Other top honors went to Sophia Loren, who won the Best Actress Award for "Two Women", and Maximilian Schell, who took the Best Actor Oscar for "Judgment at Nuremberg".

Highlight of the 1963 Presentation, honoring 1962 achievements, was Gregory Peck's victory in the Best Actor category for "To Kill A Mockingbird". He had been nominated on four previous occasions. Anne Bancroft captured the Best Actress Award for "The Miracle Worker", on her first nomination.

"Lawrence of Arabia" was named the Best Picture and captured six other Oscars, including one for its director, David Lean. Supporting honors went to Ed Begley for "Sweet Bird of Youth" and Patty Duke for "The Miracle Worker".

"Tom Jones" was cited as best picture of the year at the 1964 Presentation honoring 1963 achievements. Director Tony Richardson received one of the three other Oscars voted for the film.

Sidney Poitier was a winner for his performance in "Lilies of the Field", and Patricia Neal was honored as Best Actress for "Hud", her first nomination. Supporting awards went to Melvyn Douglas, also for "Hud", and to Margaret Rutherford for "The V.I.P.s".

Eight Academy Awards were accorded "My Fair Lady" when 1964 achievements were honored at the 1965 Presentation, including Best Picture of the year. Also recognized were Rex Harrison, Best Actor, and George Cukor, Best Director.

The Best Actress was Julie Andrews, and Best Supporting Actress was Lila Kedrova—Miss Andrews for "Mary Poppins" and Miss Kedrova for "Zorba The Greek".

Make-up achievement was recognized with an honorary award to William Tuttle for his outstanding work in "The 7 Faces of Dr. Lao".

That year the same five films were nominated in the Best Picture, Best Screenplay and Best Directing categories: "Becket", "Dr. Strangelove", "Mary Poppins", "My Fair Lady" and "Zorba The Greek". The 13 nominations accorded "Mary Poppins" set a record for musicals.

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The 1966 Presentation was broadcast for the first time in color. There were five Oscars apiece for a spectacular musical, "The Sound of Music", and a dramatic spectacular, "Doctor Zhivago".

Three of the four acting winners received their Awards on their first nominations: Lee Marvin, Best Actor, "Cat Ballou"; Julie Christie, Best Actress, "Darling"; and Martin Balsam, Best Supporting Actor, "A Thousand Clowns".

A second Oscar for Shelley Winters, for her role in "A Patch of Blue", made her the only actress ever twice honored in the Best Supporting Actress category.

"The Sound of Music" was adjudged Best Picture, and its director, Robert Wise, also was cited.

What was considered to be the closest competition in years for Oscars in nearly all categories generated tremendous interest in the 1967 Presentation.

Elizabeth Taylor became the sixth to win a second Award for Best Actress for her portrayal of a college professor's shrewish wife in "Who's Afraid of Virginia Woolf?"

For the second successive year, three Acting Awards went to individuals who were nominated for the first time: Paul Scofield was named Best Actor for his performance in "A Man For All Seasons", Walter Matthau won Best Supporting Actor honors for "The Fortune Cookie", and Sandy Dennis was named Best Supporting Actress for "Who's Afraid of Virginia Woolf?"

"A Man for All Seasons" was adjudged the Best Picture and its director, Fred Zinnemann, was awarded his second Oscar.

That 1967 Awards Program almost didn't go on the air. Television performers were on strike, and it appeared that the Awards could not be broadcast. Despite the substantial financial loss if the television broadcast were cancelled, the Academy took the position that the Awards were more important than the reporting of them, and that the show would go on, broadcast or no broadcast.

Two hours before the start of the Presentations the strike was settled—and the 1967 Oscarcast joined that of the previous year as the two greatest attractions ever presented by a single television network theretofore.

The 1968 Awards Program and broadcast were postponed for two days in a gesture of respect for Dr. Martin Luther King, who was assassinated a few days before the awards were to have been held and whose funeral was held the day the awards were scheduled to be presented. Bob Hope, again the master

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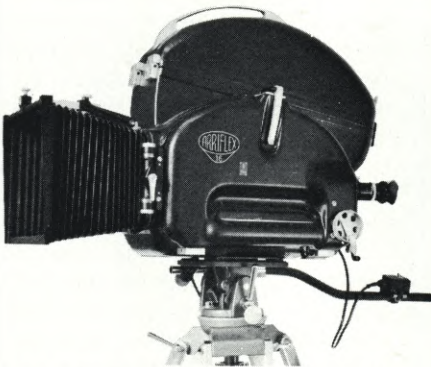
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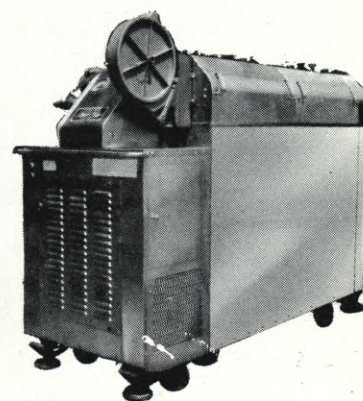


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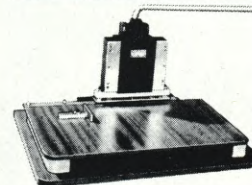
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of ceremonies, had a difficult task; the nation still was shocked and grieved. That he did it with exceptional taste and style was attested by the press covering the event.

"In the Heat of the Night" won the Best Picture Award for 1967 at the 1968 Oscar Night. Rod Steiger was named Best Actor for his role in that film. Best Actress was Katharine Hepburn for "Guess Who's Coming to Dinner"; this was her second Oscar. She won her first in 1932/33 for "Morning Glory". Best Supporting Actress was Estelle Parsons in "Bonnie and Clyde". Mike Nichols won the Oscar as Best Director for "The Graduate".

In 1969 the Awards Program originated in a new theatre—the beautiful Dorothy Chandler Pavilion of the Los Angeles County Music Center. The 41st Awards were marked by a genuine rarity: a tie between two ladies for the Best Actress Award. Barbra Streisand and Katharine Hepburn had identical vote counts and each was awarded an Oscar—Miss Streisand for her first motion-picture role, that of Fanny Brice in "Funny Girl", and Miss Hepburn for her portrayal of Eleanor of Aquitaine in "The Lion in Winter". This was Miss Hepburn's third Oscar (only one other performer, Walter Brennan, has won three Awards) and her second in two years. Cliff Robertson won the Best Actor Award for his role in "Charly", and "Oliver!" won the Oscar as Best Picture. Sir Carol Reed was given the Award as Best Director for "Oliver!"; Jack Albertson and Ruth Gordon won Oscars as Best Supporting Actor and Best Supporting Actress for their roles in "The Subject was Roses" and "Rosemary's Baby", respectively. For the first time the Awards Program was broadcast on overseas television reaching 32 countries by delayed broadcast of film and video tape. The live broadcast again went to Canada and, for the first time, to Mexico as well. And for the first time an Award had to be withdrawn, when the documentary film that was given the Award at the ceremonies on April 14, 1969, was found to have been ineligible (it had first been released in 1967, which disqualified it for consideration for the 1968 release year). The Award then was given to the film with the next highest number of votes—"Journey Into Self".

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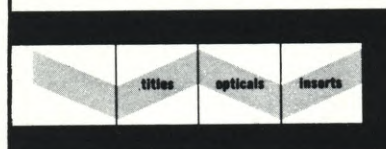
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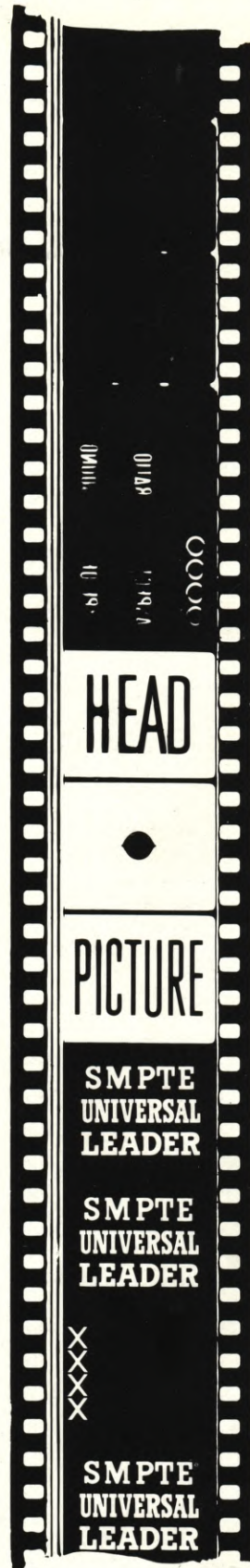
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