

# American Cinematographer

International Journal of Fiction Picture Photography and Production Techniques

NOVEMBER 1977/\$1.50

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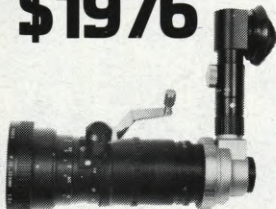
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*Bruce Shearin, sound  
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Davis Mountains*

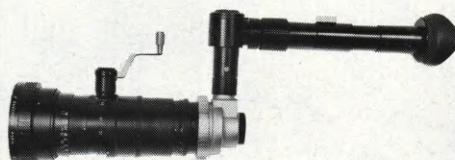


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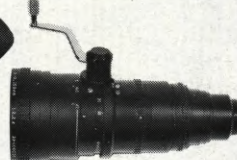
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## “On *American Enterprise*, TVC gave us beautiful dailies. Then they gave us beautiful prints—7,000 of them.”

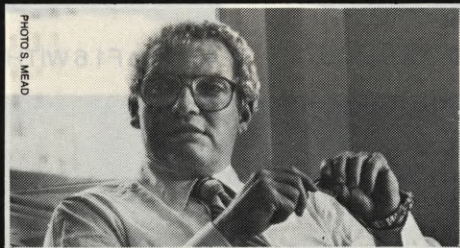
“The incredible story of *American Enterprise*—from an idea to the most widely-seen educational film series ever—began in the spring of 1975, when we presented Phillips Petroleum Company with an idea and a challenge: to tell the story of how this nation evolved from an underdeveloped country to the economic marvel it is today.

“A Series of five films was proposed. And, since America’s economic ‘sets’ were still largely in place—the mills of New England, the canals, the railroads, etc.—why not crisscross the country and use them?”

“Phillips accepted the challenge, and *American Enterprise* was born.

“For seven months our crews travelled more than 100,000 miles to 104 locations in 31 states. We had only one day per location.

PHOTO: S. MEAD



“Time was of the essence. We needed a stock and a lab we could count on, both of which had to be fast.

“Our choices were 7247 and TVC. Throughout the job TVC gave us beautiful dailies... then they picked up where they left off and gave us beautiful release prints—a total of 7,000 of them.

“Starting in September *American Enterprise* will be seen by a million school children a month—the first time this magic number has been reached! And, beginning in October, *American Enterprise* will be seen on commercial prime time TV in more than a dozen

major markets.  
“*American Enterprise* worked because it tapped a need. It was the right combination of ideas, talents and people at the right time. TVC was very much a part of that combination.  
“Thanks, TVC.”

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# American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

The American Society of Cinematographers is not a labor union or a guild, but is an educational, cultural and professional organization. Membership is by invitation to those who are actively engaged as Directors of Photography and have demonstrated outstanding ability. Not all cinematographers can place the initials A.S.C. after their names. A.S.C. membership has become one of the highest honors that can be bestowed upon a professional cinematographer, a mark of prestige and distinction.

NOVEMBER, 1977

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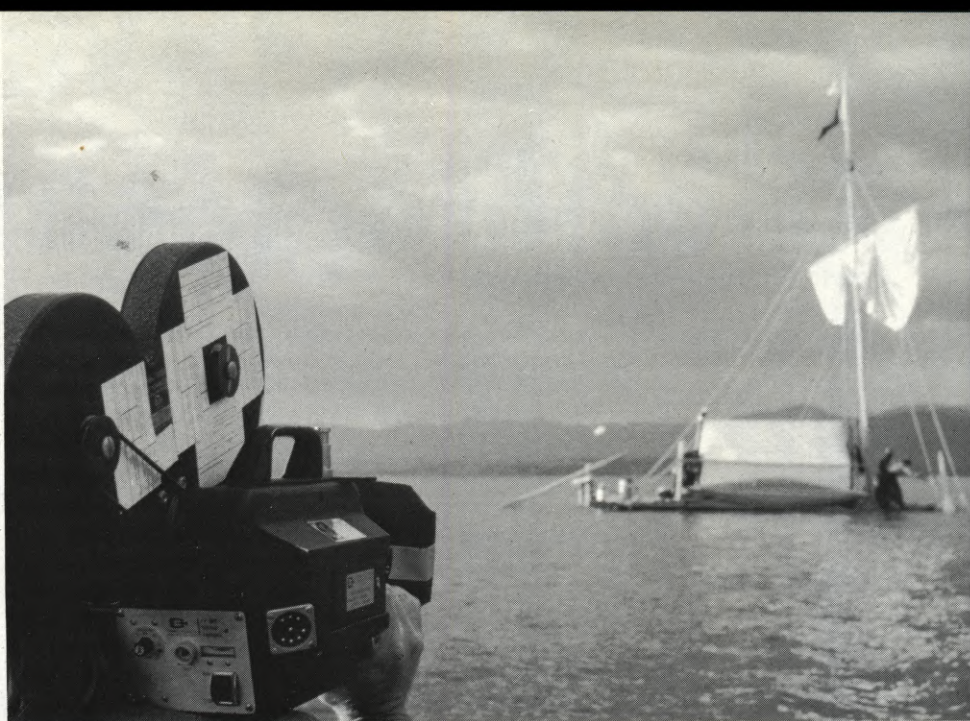
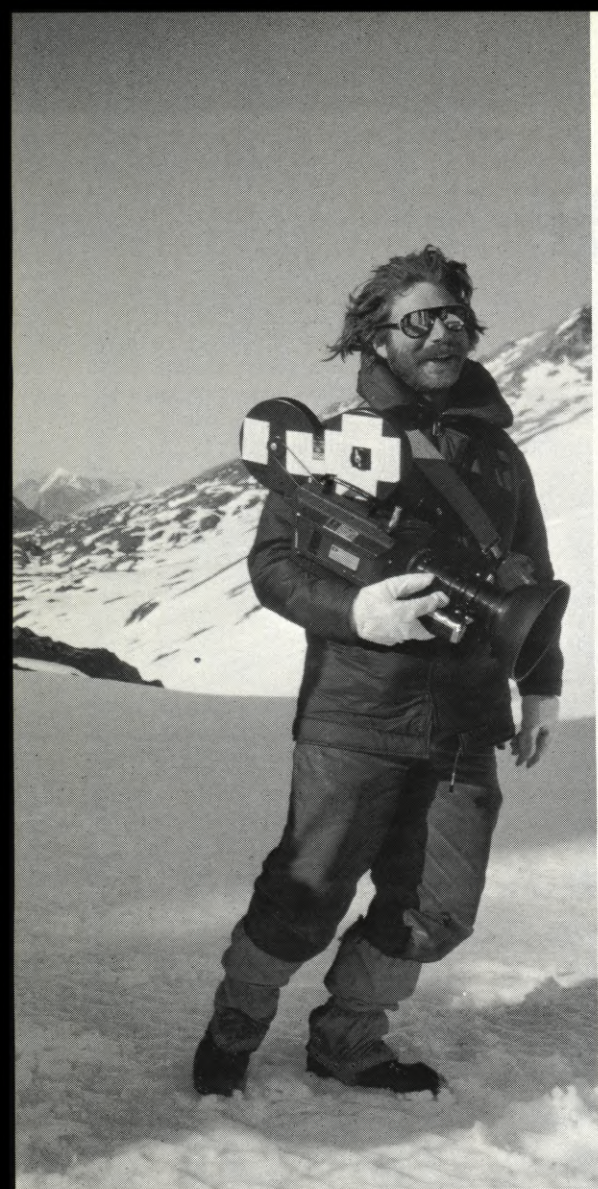
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ON THE COVER: A scene from the Chartoff-Winkler production for United Artists release of Ken Russell's "VALENTINO". Famed international ballet star Rudolf Nureyev, playing the title role and garbed as "MONSIEUR BEAUCAIRE", is shown talking to his director between takes. The Hollywood of the gilded silent screen era has been colorfully re-created on the stages of London's EMI Elstree Studios, as well as on location in Almeria and Barcelona, Spain, and Blackpool and Bournemouth in England.

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**“Silence in the Yukon is the most total I have ever experienced, quieter than any sound studio... Our voices would echo back and forth for miles. Shooting sync-sound at close range was especially demanding, but the CP-16R was wonderfully quiet.”**

**Eric S. Camiel**  
Cinematographer

For more than 100 days, award-winning filmmaker Eric Camiel and his CP-16R kept constant company, filming the ordeal of four men as they retraced the route of the great Klondike Gold Rush of 1898 for “Yukon Passage,” a National Geographic television special, co-produced with WQED/Pittsburgh.

“For three and a half months, my CP-16R was my constant companion as we froze and sweated, climbed and fell, working at the limits of fatigue and physical endurance to film the route of the great Klondike Gold Rush of ‘98,” says cinematographer Eric Camiel.

“We hiked over the Chilkoot Pass, 34 miles on foot, over snow and rock. Then we camped at Lake Bennett, in the Yukon Territory (part of a vast semiarctic region in northwest Canada), the staging area for the raft trip down the Yukon River. There we filmed for three weeks as the four men logged a mountainside, ran the logs down the rapids, and built their raft.

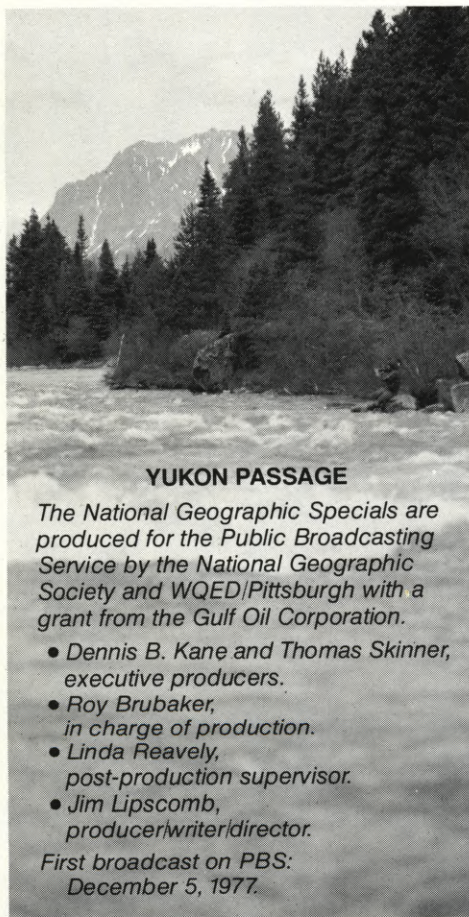
“The raft was rigged with a big canvas squaresail for sailing the 200 miles of lakes to get to the river proper. Riding the spring flood at six knots, we drifted, smashed, and ground our way to the heart of Gold Rush Country, where the Yukon and Klondike rivers meet: Dawson City, a major boom town during the Klondike Gold Rush. From there we rafted down the Yukon River till the

freeze-up, and then out by dog sled.

“The CP-16R was used for three and a half months in the wilderness, shooting over a hundred 400’ rolls of 7247 color negative, operating in a temperature range of 10° to 95°F with no problems,” says Eric Camiel. “It ran seven to nine magazines per NC-4 battery, even in cold weather.”



*Camiel being helped to camera position up the bank. “No wonder the camera fell so often...” says Camiel.*



#### **YUKON PASSAGE**

*The National Geographic Specials are produced for the Public Broadcasting Service by the National Geographic Society and WQED/Pittsburgh with a grant from the Gulf Oil Corporation.*

- Dennis B. Kane and Thomas Skinner, executive producers.
- Roy Brubaker, in charge of production.
- Linda Reavely, post-production supervisor.
- Jim Lipscomb, producer/writer/director.

*First broadcast on PBS:  
December 5, 1977.*



"Dollying" across on a cable to film the running of the rapids.



Bringing logs for the raft downstream.



Lake Laberge, Yukon Territory. Paul Crews, member of the 4-man raft crew, and Eric Camiel (filming) on the raft. The CP-16R is protected by a special CP raincover. The sudden storms on this lake claimed the lives of many men in 1898.



case clips onto a backpack frame."

"There was very little special equipment used," says Camiel. "I did build a lightweight waterproof padded case that holds the camera, in a ready-to-shoot format, plus accessories. The camera goes in and out easily, and the case clips onto a backpack frame."



Left to right: Cinematographer Eric Camiel, producer/writer/director Jim Lipscomb and soundman David Clark. "Yukon Passage" was shot double system with Nagra sound recording equipment.

**"Like a cat with nine lives, the CP-16R kept on shooting despite the incredible abuse to which it was subjected."**

"The weather was quite erratic, with frequent rain squalls, and the CP raincover had to go on and off several times a day.

"The camera was dropped three times, once sliding forty feet down a snow bank. Occasionally it got wet with spray and rain. Each time, I just dried it off and kept shooting.

"Once, while I was changing magazines, the wind blew sand into the open camera. I cleaned it out and kept shooting. The worst problem, though, was the fine abrasive dust that filled the air any time we were near the gravel-paved roads. It got into everything, and eventually ruined my lens. Still, the camera kept shooting.

"I was really amazed that the camera kept functioning through it all. Like a cat with nine lives, the CP-16R just kept on shooting despite the incredible abuse to which it was subjected."

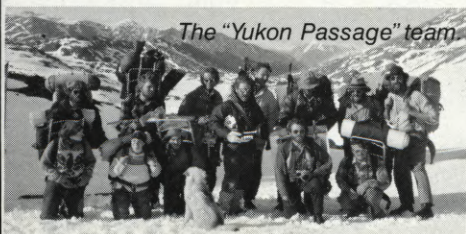
**"I know of no other camera that could have served me as well."**

"Silence in the Yukon is the most total I have ever experienced, quieter than any sound studio. No cars, no airplanes, no insects — nothing but silence. Our voices would echo back and forth for miles. Shooting sync-sound at close range was especially demanding, but the CP-16R was wonderfully quiet.

"Inevitably in this type of filming, there is a lot of waiting, the camera on your shoulder or by your side, ready to shoot. The ability to put the camera down safely, and grab it and start shooting immediately is crucial. The second saved in getting the camera to your eye and

turned on is often the crucial second that gets the all-important start of the action on film. The CP-16R with its plug-in battery, broad flat camera bottom and convenient handle placement proved extremely handy under these conditions. The camera balances beautifully on my shoulder, and I can easily hold it there for a 400' take.

"I know of no other camera that could have served me as well. The rugged reliability of the CP-16R, and the confidence it inspired in me, allowed me to take chances far away from any backup camera, risking the CP-16R to get a shot in situations where I wouldn't have dared to go with other cameras. And it shows directly in the quality of the finished film, not just in spectacular shots and difficult camera angles, but in the amount of detailed coverage that the camera encouraged me to get: the type of material that makes a film come alive."



The "Yukon Passage" team

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# CINEMA WORKSHOP



By ANTON WILSON

## LENS PERSPECTIVE

When are things really in their proper perspective? In general, this question rarely has a concrete answer — except where photography is concerned. Simply stated, a photograph or projected image is being viewed in proper perspective when the viewer is at the center of perspective where all objects in the picture are in proportion to the original scene as it appeared from the position of the camera lens.

Scenes that are relatively two-dimensional with little depth can be viewed from almost any distance and look reasonably accurate. However, scenes with great depth will appear grossly out of proportion when viewed from other than the center of perspective. For example, when viewed from beyond the center of perspective, foreground objects appear disproportionately large and depth is exaggerated. An object moving either toward or away from the lens will appear to be moving at a greater than normal speed, and objects aligned

axially with the lens will seem elongated and distorted. When viewed from less than the center of perspective, the exact opposite occurs. Axial motion appears slower than normal, axial dimensions seem compressed and distorted and there is a general foreshortening of depth.

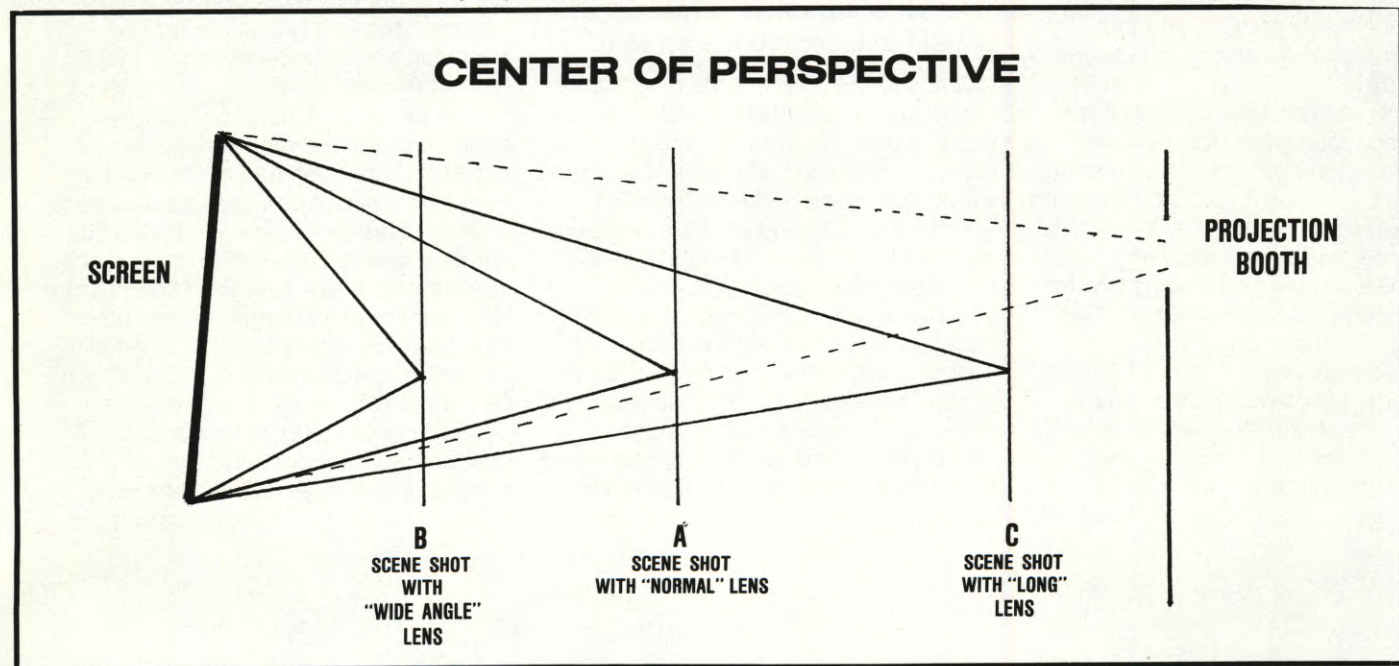
Most of these phenomena are familiar and sometimes referred to respectively as *wide-angle distortion* or the *telephoto effect*. However, there really is no "distortion" or "effect", per se. Actually the center of perspective is moving back and forth within the theatre, depending upon the focal length of the lens used on the camera. The theatre is usually designed to place the center of perspective approximately halfway between the screen and the rear of the theatre for a scene that was shot with a normal lens. Thus, a viewer sitting in the center of the theatre will be at the center of perspective for a scene shot with a normal lens. However, a scene that was taken with a wide-angle lens will exhibit a center of perspective that is much

closer to the screen. The viewer in the middle of the theatre is now significantly behind the proper center of perspective and experiences the aforementioned elongation and exaggerated depth ("wide-angle distortion"). However, if the viewer were to get up and move closer to the screen so as to be at the center of perspective of the wide-angle scene, the picture would no longer seem distorted, but would appear perfectly natural and properly proportioned.

In the same manner, a scene shot with a long lens will cause the center of perspective to shift to the rear of the theatre. Once again, the resulting telephoto effect would be neutralized by the viewer moving back in the theatre to coincide with the center of perspective. So, in reality, the center of perspective is shifting about the viewer in direct relation to the focal length of the camera lens.

How is the center of perspective determined in the theatre? How does the size of the theatre affect perspective? We'll pick up here next time. ■

FIGURE 1—Originally, motion picture theatres were designed to provide proper perspective for a viewer sitting approximately halfway between the screen and the rear of the theatre. This is assuming that the scene on the screen was shot with a "normal" lens. This is represented by point A in the figure. If, however, the scene was shot with a "wide angle" lens, the center of perspective will be closer to the screen, (point B). The viewer seated in the center at point A is now significantly behind the center of perspective (see text). Likewise, the viewer at A will be forward of the center of perspective for a scene shot with a telephoto lens (point C).





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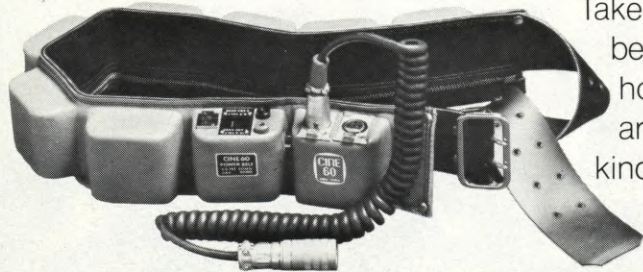
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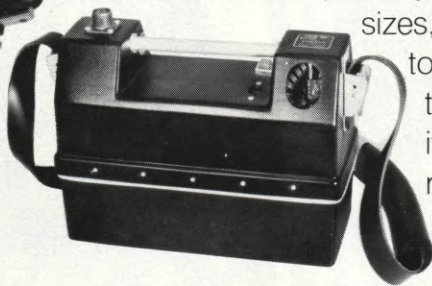
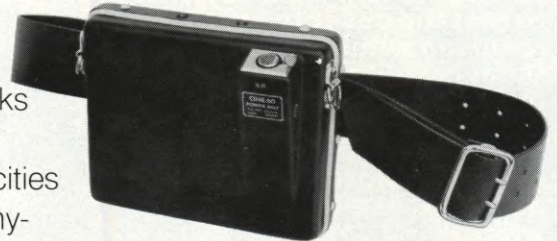
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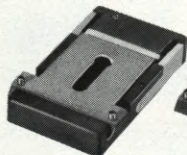


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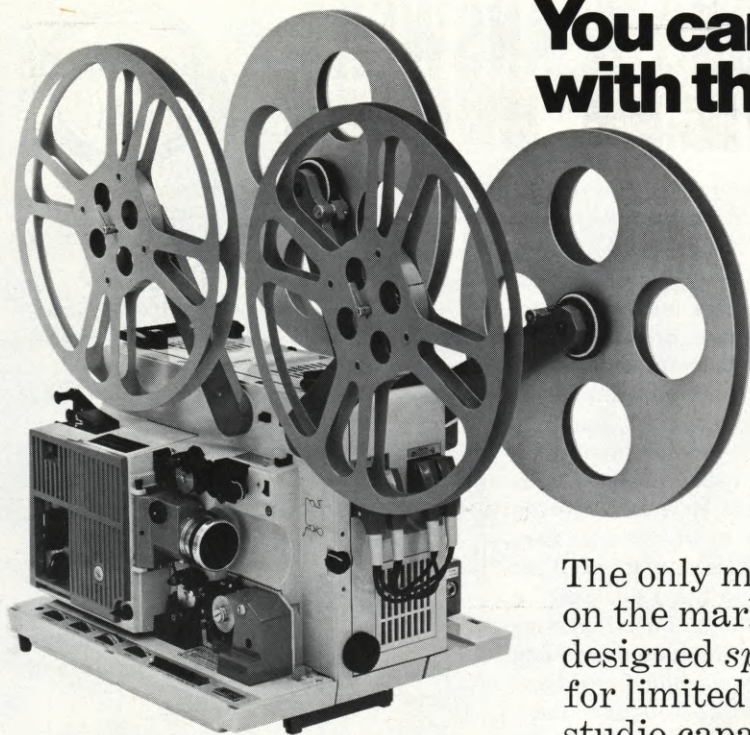
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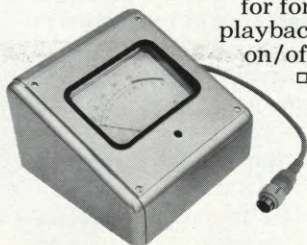
- Projects optical track and mag-stripe prints.
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- To avoid wear, mag-stripe heads drop out of film path during optical playback.
- You can monitor while recording on either edge or center track fullcoat, or on mag-stripe.
- Elapsed-time counter records hours.
- 20W amplifier.
- 600 ohm 1.5V balanced input and output.
- Mechanical interlock can be uncoupled.

**7 of the 19 modes:**

- (Just to give you some idea of the machine's versatility):
- Transfer optical track to fullcoat, edge or center track.
  - Transfer mag-stripe to fullcoat, edge or center track — and vice versa.
  - Transfer edge track to center track — and vice versa.

**Some accessories:**

- Various three-head magnetic head units, including four-track.
- Choice of 15 lenses, including anamorphic.
- 5 digit frame counter.
- Mechanical interlock with other studio equipment.
- Remote control for forward/reverse, playback level, record on/off, record level.
- Separate VU meter whose illuminated screen measures  $3\frac{7}{8} \times 2\frac{5}{8}$  inches.



**S**ound studio mix time can run as high as \$280.00 an hour. A good interlock projector can shorten the time you spend there, and save you from some unpleasant surprises.

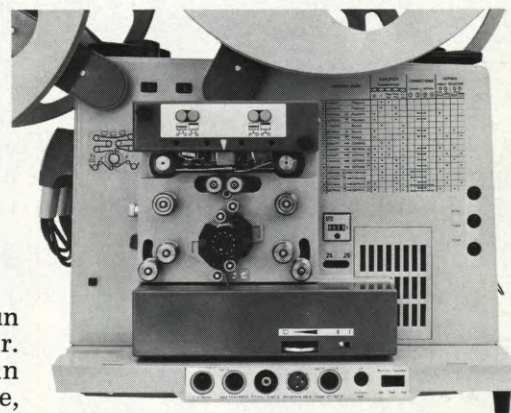
*The Sonorex can save you from going there at all! Some people transfer sync effects from 1/4 inch, record narration directly onto 16 mag, make the final mix and dub it onto the release print's mag stripe — all on the Sonorex.*

For most people, however, the Sonorex saves money by getting them in and out of the mix faster. Transfers and narration recording on the Sonorex save them *time*, too.

Whatever you use the Sonorex for, it's worth bearing this in mind: If the release print is to be projected on a standard 16mm projector, with a 16mm optical track, the sound quality will be limited by *that* — not by the Sonorex.

Its magnetic recorder side uses a closed-loop threading path, bearing-mounted loop compensators, two massive flywheels, and stabilization rollers.

To get to speed fast, the heavy flywheels are directly driven for the first second or two after starting. Then the centrifugal governor automatically uncouples them.



Sonorex magnetic tape deck side. Diagram at upper right shows nineteen possible functions or modes.

The standard plug-in three-head unit lays an SMPTE 200 mil edge track. And it lets you add a separate 100 mil center track — useful for all sorts of tryout scratch tracks and for multiple language narration, etc.

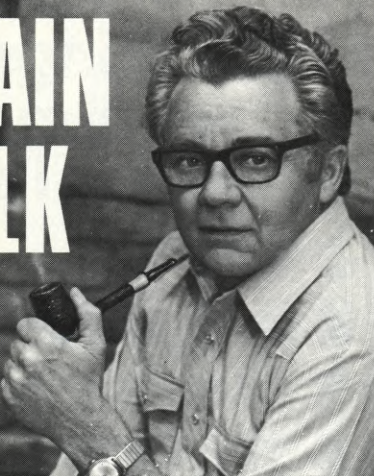
One accessory head unit provides *four* separate 100 mil tracks on one piece of mag film. You can assemble a "mixed" track and still be free to change any of the four elements.

With the Sonorex, you can run your final cut and mixed track for the client on a six-foot screen with good sound — *before* spending the big bucks. *Final thought:* Years from now, transfers on your Sonorex will cost you virtually the same. What will *outside* transfers cost in 1985?

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# PLAIN TALK



by *J. Carl Treise*

**If a processor has to be modified beyond Kodak specifications, to give you the speed you want, don't buy it.**

It's no trick to increase the film speed of a processor. All you have to do is raise the temperature, thus decreasing the development time.

However, when you do this, you're exceeding the specifications provided by Kodak for processing color films.

Maybe you can get away with it for awhile. But sooner or later, something will go wrong and when that happens, you've got no one to blame but yourself.

To put it bluntly, whenever a firm persuades you to buy a modified unit, you're asking for trouble.

How do we know?

We not only build processors, we rebuild them, too. And most of the units we're asked to work on belong to people who "bought a pitch" and then later came to us for advice on how to get out of the jam they found themselves in.

This kind of talk won't stop people who are interested only in price. But it might make a difference to those of you who are willing to spend a few extra bucks for a processor you don't have to "push" to give you the speed you want.

In the long run, you'll save money, as well as a lot of grief.

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## QUESTIONS & ANSWERS

Conducted by CHARLES G. CLARKE, ASC.  
and WINTON HOCH, ASC.



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

**Q** So far, all of my underwater cinematography has involved direct projection of camera original (7240, 7239, 7242, 7241), but what should I do when I am going to make prints without post flashing the film? Normally without flashing, it is recommended a print be made on 7389 in order to preserve a 1:1 contrast. However, with the reduced contrast of underwater film, wouldn't it be advisable to print on 7390 in an effort to build contrast, or should this decision be based on a review of the original footage depending upon the water's visibility? Perhaps you could offer alternate suggestions.

**A** The following is an answer to the above question given by Mr. Sid Solow of Consolidated Film Industries of Los Angeles:

You show sufficient knowledge of photographic technique by answering your own question in the most intelligent and practical way. There are so many variables that affect underwater photography that it is only by testing every available technique that you can be sure that you are using the right one for any particular set of conditions. There is one more film combination that is worth trying and that is the use of ECN II (7247) as your shooting stock, printing on ECP (7381). Of course, you cannot evaluate your photography by projecting the original since it is a negative image. But the results might be superior under certain conditions.

**Q** How can I produce a night effect in the daytime using color film?

**A** This is the question we most frequently receive, and though the answer has been given many times, still the key to the question is to *underexpose two stops*. Additional techniques which assist the illusion are to photograph the scene in back-light, using lights or reflectors as fill lights on the players. When such are not available, use front cross-light. By all means avoid any white sky in the scene. You may use a 85N6 filter, but disregard its factor. The N6 (Neutral density — 6 transmission) portion of this filter will reduce the light transmitted by two stops. Therefore, you judge the exposure as if you were using the normal #85 filter for a *day* exposure; the N6 portion cutting two stops will produce the underexposure necessary for a night

effect.

It will further the illusion if you can include in the scene some light source — such as lighted windows or street lamps. These must be boosted by using photoflood lamps — using tracing paper or Bon Ami on the glass of the windows to diffuse the light from the naked globes.

**Q** I read that professional cinematographers normally light their sets at a predetermined foot-candle level. Why is this, and what is the difference between foot-candles and candles-per-square-foot?

**A** Motion picture sets are illuminated for a definite light level measured in foot-candles. The intensity of the light and the lens opening will vary with the speed of the film being used — and effect desired. The professional is only concerned with the incident light available — not with the reflective aspect of the players' clothing, backgrounds, etc., unless these are of a particularly light or dark tone — in which case exposure compensation may be required.

The term "foot-candle" is used in connection with the *intensity* of illumination at a given location. It is entirely dependent upon the intensity of the light source and its distance from the subject. Foot-candles are measured with an incident light meter.

The term, "candles-per-square-foot" is used in connection with the *brightness* of an illuminated surface. It is dependent upon the intensity of illumination on the surface and the inherent diffuse reflectance of the surface. Many reflected-light meters read in candles-per-square-foot.

**Q** I have to photograph a "Dow Board" in our local stock exchange. This is a black-light apparatus — and is just barely visible. How might I obtain an insert shot of this board in color?

**A** Use color negative — or equivalent 16mm high speed film and the fastest lens you can obtain. Request your laboratory to force develop your negative *one stop*. You may run your camera at 12 frames per second to obtain more exposure and also to speed up the action of the legend being spelled out on the board.

# MAKE OF IT WHAT YOU WILL.



CP-16R/A Reflex Camera shown with mike/lite bracket, RE50 microphone, CP headphone set and "Sturdy-Lite" focusing spot.



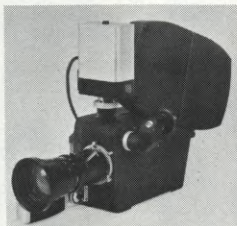
With J-5 motorized zoom control (plus 12-120 Angenieux zoom lens).



CP-16R/A Reflex with Crystasound/amplifier installed.



Studio-Rig: zoom control, orientable viewfinder and O'Connor model 50-C fluid head and legs.



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# 5247 FILM

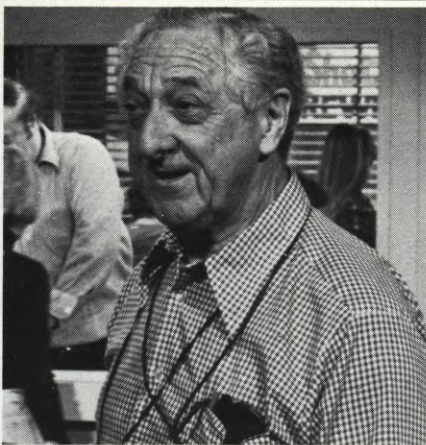
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EASTMAN COLOR NEGATIVE II FILM 5247.

*Recently we asked  
some motion picture  
industry leaders who  
had used Eastman*

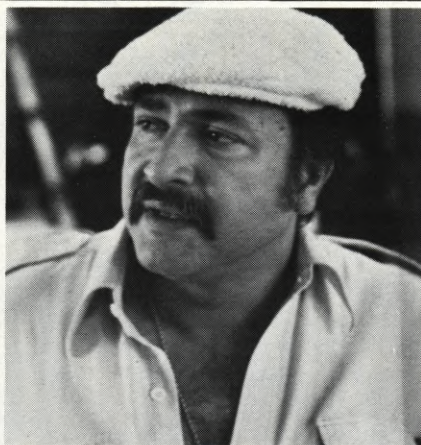
*color negative II film  
5247 to tell us some of  
their experiences with  
it. What they had to  
say should interest  
anyone who has ever*

*had to establish a pro-  
duction budget—or  
live with one.*



### **Lester Shorr, A.S.C.:**

I was the first to use the modified 5247 on a TV series (Laverne and Shirley). The difference? Lower degree of contrast, better color rendition, better reproduction of colors, more flexibility in use. I've reduced the light level on the set by twenty-five percent. We save energy by reducing the amount of lumens and this saves money for the company. When we reduce the light, we reduce the heat. This has a tendency to make both the audience and the performers more comfortable. And allows the actors to give a better performance.



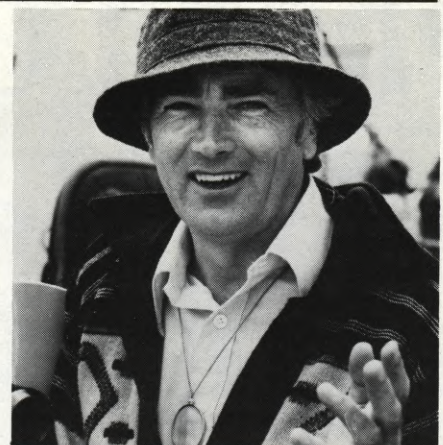
### **John A. Alonzo, A.S.C.:**

The impact of Eastman 5247?

Primarily the impact is economic. It gives the producer a time and money-saving tool!

In the Rastar production of "CASEY'S SHADOW" we used fewer heavy units for lighting. Not only did that cut down the budget for the producer, but the actors felt more comfortable, less aware of the lighting. The arc light does a lot more than it used to. It can be backed off, and because the film requires less light you get a larger coverage from that one single arc. We finished the film about seven days ahead of schedule and the electrical budget was probably about 15% or less than what it normally would have been.

Yes, the impact of 5247 is a significant one to our industry.



### **Bill Butler, A.S.C.:**

When you push 5247 to ASA 400, you're getting very close to what the eye sees. Then you can photograph something as it is naturally without faking it. Then each light can be used for an artistic purpose rather than just to get the necessary exposure. Economics are also involved. I'm never unaware of the fact that a producer would like to get a film shot in a hurry. It's dollars whenever you're standing out there with a camera. If you have a film that needs less light, it's an economic saving to use that film if it means you have to put up less lights. Eastman 5247 film is exceptional.

*If you would like more information about Eastman color negative II film 5247, ask your own questions of your Kodak sales and engineering representative, or write: Eastman Kodak Company, Dept. 640, Rochester, New York 14650.*

*If requested, we will be happy to add your name to the Kodak Professional Forum mailing list.*



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# PROFILE: A.S.C.

By JOHN ORMOND

## HANS KOENEKAMP, A.S.C.

Hans Koenekamp, a sprightly 85 (and the member of longest tenure in the American Society of Cinematographers) remembers it this way:

"I was standing around on a set over at the old Keystone Studio one afternoon, when producer Mack Sennett walked over to me. He asked me if I'd like to be a cameraman. Just like that. Course, I said I did!"

The meeting didn't happen by chance, though. Noted early movie director Walter Wright already had his eye on the eager, young (then 22) apprentice cameraman. And he had suggested to Sennett that Koenekamp might be the man they were seeking to supervise their second unit photography.

"Sennett told me they were going to need someone who could do underwater photography over at Catalina Island, for a Mabel Normand film. Naturally, I told him I was just the chap."

Koenekamp (known to all his ASC friends as Konie) had come to Hollywood at the ripe old age of 20, having departed his home in Dennison, Iowa in 1911. He had started out as a farmer, but early in life became fascinated with the movie world.

He went to a school for film projectionists, and soon after landed a job as a projectionist at the now-defunct American Theater on Broadway in downtown Los Angeles.

It was at that theater, too, that he met a pert n' pretty young cashier named Lucretia. In 1915, they were married. That's a marriage, incidentally, that now has passed the 62-year mark!

In 1914, Koenekamp laid claim to another milestone of sorts. He was the first Hollywood cameraman to film a scene with Charlie Chaplin.

"It was a scene in which Chaplin played a drunkard," he recalls. "At the time, I guess, I didn't realize there was any significance to the assignment. But I do now."

He photographed several Mabel Normand pictures, and he and his wife became very friendly with the actress. They also bought a home close to where Normand lived.

During this pre-World War One period, Koenekamp also photographed three Gloria Swanson films.

In 1917, when America entered the first world war, he went to work at Vita-

graph, where he remained for seven years. At Vitagraph (now the site of the ABC television studios),

After working in scores of films at Vitagraph, Koenekamp moved to Warner Bros. in 1928. The era of sound in Hollywood films soon arrived, and Hans went to work in a film titled "NOAH'S ARK".

"When I was at the Mack Sennett studios, one of my assistants there was Fred Jackman. Well, by the time I got to Warners, Fred was in charge of the then-new special effects photography department. And I went to work for Jackman."

They pioneered in this photographic art, specializing in miniatures and process work. So much so, that Hans Koenekamp virtually became a fixture at the big Burbank film lot. In all, he was at Warners from 1928 until 1965.

"We had as many as six cameramen in the special effects department. We did hundreds of matte shots. I guess I must have worked on more than 450 motion pictures while I was at Warners."

His earlier venture with Mack Sennett to Catalina stood him in good stead when he was dispatched to New London, Conn., and to the Panama Canal to supervise all underwater photography on the film, "SUBMARINE D-1". That was in 1940, before the U.S. was forced into World War Two.

Later, when America was attacked by Japan, Warner Bros. became the virtual headquarters of a spate of movies about the U.S. armed forces.

One such film, "AIR FORCE", won for Hans Koenekamp a nomination for an Academy Award in 1943 — a nomination which he cherishes.

"We photographed most of the film at Tampa, Florida, with Howard Hawks directing. Part of it told the true story about nine unarmed B-17 bombers en route to Hawaii on December 7, 1941, when the Japanese bombed Pearl Harbor. The B-17s had no place to land there, and had to disperse to other airstrips."

In reenacting that event, Koenekamp flew on a Hudson bomber, flying alongside the B-17s used in the movie. Unfortunately for him, and for his assistant cameraman Leonard South (now a leading Hollywood director of photography), the Hudson landed at the wrong airfield.

"We were arrested by the U.S. military, and thrown in the brig," recalls

Koenekamp, with a grin. "They thought we might have been spies."

The company location manager finally managed to spring them from the brig at 4 a.m. the next morning — not a minute too soon for the unhappy Koenekamp and South.

For another World War Two film, Koenekamp created all the miniatures for the reenactment of the Battle of the Coral Sea.

The miniatures were big enough to have a man in them," he recalls. "We photographed them in the ocean off Santa Barbara."

Koenekamp's son Fred (an Academy Award winner for "TOWERING INFERNO" in 1975) was in the Coast Guard during World War Two.

When the war was over, Hans helped him get a job at RKO studios. He started as a camera loader, then an assistant and an operator. Later, the younger Koenekamp became one of the leading directors of photography of the 1960s and 1970s.

Hans and Lucretia (Lou) have two daughters as well as a son. They are Marie and Patricia, both married.

When Hans was not working, he took every possible chance to travel. He and Lou have been on countless trips to many overseas countries, as well as having visited throughout North America.

"But I really got down to the business of traveling after I retired from Warners in 1965," Hans enthuses. "One of our first trips was for almost five months, in Europe. Then we had a three-month trip throughout South America. And another long trip to the Orient. And we've been to Alaska four times. My, that's marvelous country!"

One of their latest trips was to New Guinea.

"I'd heard so much about it, since so many of our boys were there at Port Moresby helping the Australians fight the Japanese there in the war," he says. "So Lou and I decided we'd see the whole thing."

"The Papuans were very friendly," he reports. "I guess they figure we must have helped save their country in the war."

Oddly, though the Koenekamp name (Hans and Fred) has been viewed by movie millions on innumerable film credits, the only time father and son ever worked together was on a television commercial.

"We shot the commercial at Paradise Cove, up the coast from Los Angeles," says Hans. "Fred helped me on it. I hadn't planned it that way — it just happened Fred was available, and I needed an assistant in a hurry!" ■



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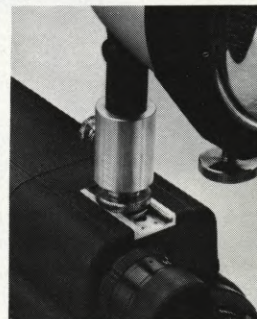
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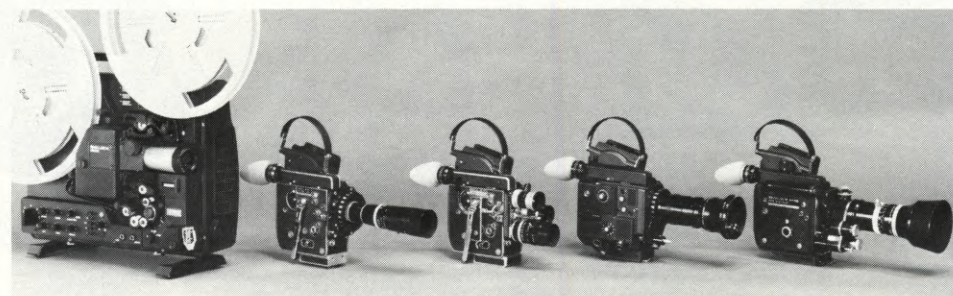
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#### Bolex H16 SBM:

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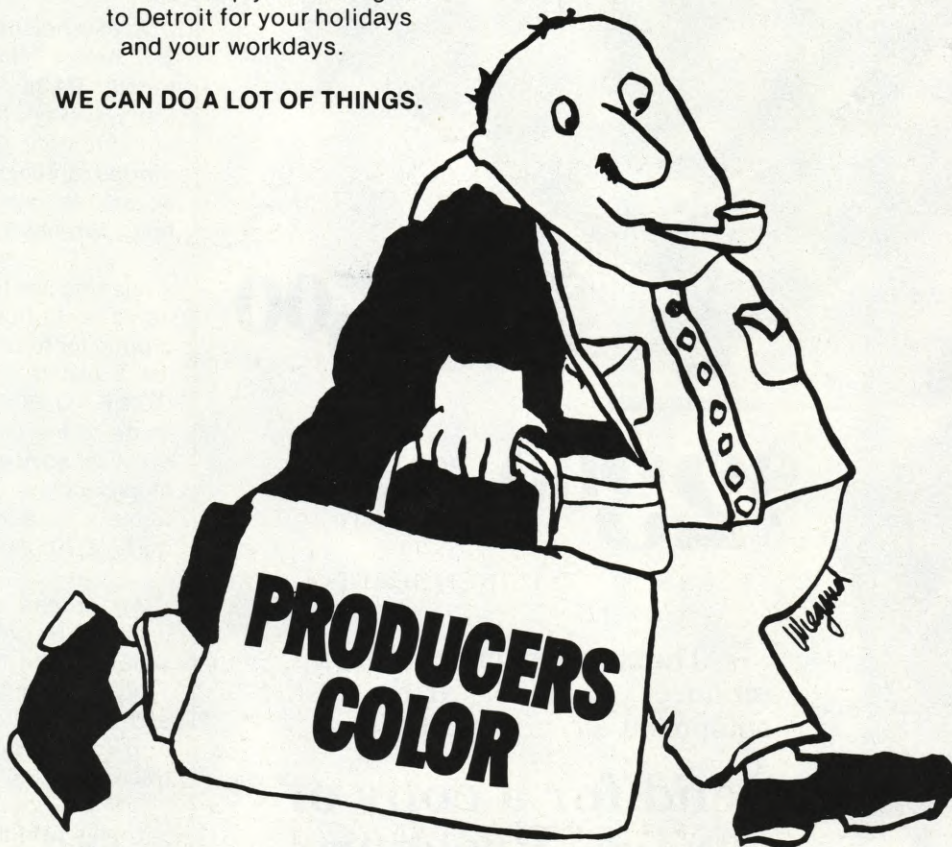
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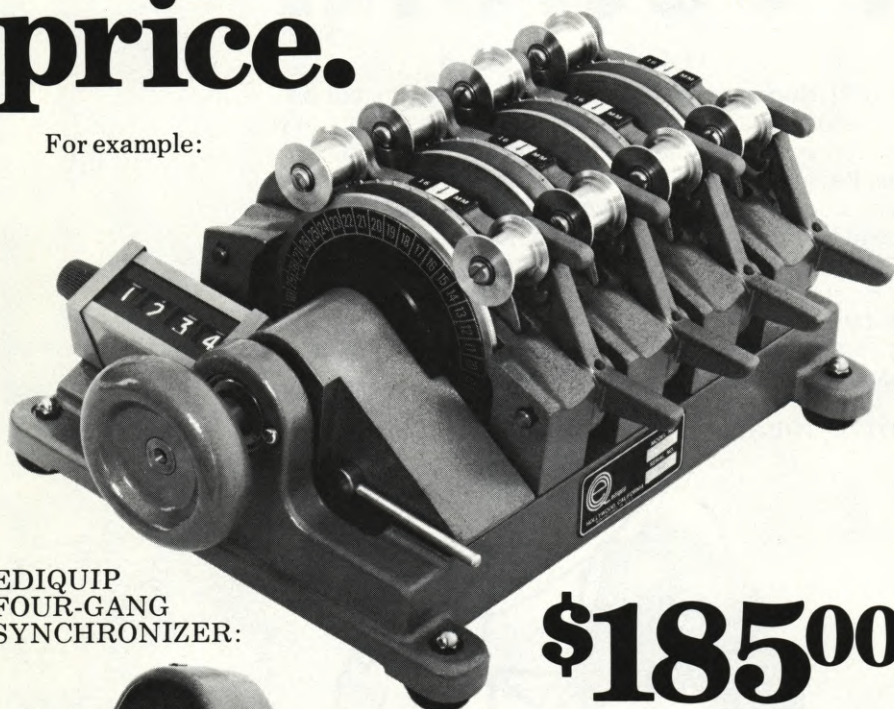
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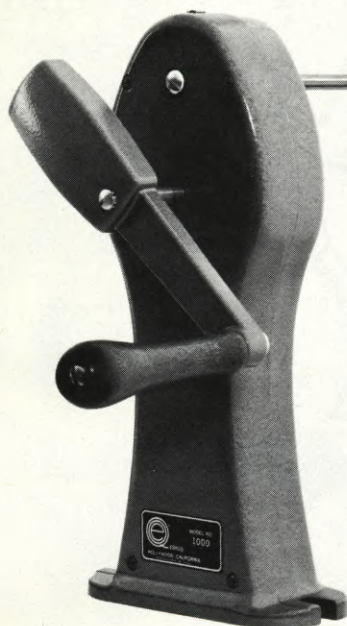
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## THE BOOKSHELF

By GEORGE L. GEORGE

### FACTS AND FIGURES

Michael G. Fitzgerald's UNIVERSAL PICTURES is an entertaining and informative large-format, 800-page book that surveys the colorful panorama of the studio's evolution from its founding by Carl Laemmle in 1912 to its takeover by MCA in 1964. (Arlington \$30.)

Now in its 28th year of publication, John Willis' SCREEN WORLD 1977 is a profusely illustrated statistical and pictorial record of 1976 movies, with complete cast-&-credits for all films released in the U. S. that year. (Crown \$12.95)

Biographical sketches of many film personalities appear in the 16th edition of WHO'S WHO IN THE THEATRE, edited by Ian Herbert, an invaluable record of the contemporary stage. (Gale \$50.)

A psychological study of the modern horror film, appropriately illustrated, DARK DREAMS by Charles Derry surveys the post-1960 crop and convincingly contends that such movies represent the most popular and accessible expression of our everyday fears. (Barnes \$15.)

Viewing sex film production as a valuable and not uncommon training ground for future directors, Steven Ziplow presents in THE FILM MAKER'S GUIDE TO PORNOGRAPHY a detailed guide to the genre, with all necessary practical advice on the various aspects of production, how to deal with performers, legal risks, and breaking into the field. (Drake \$6.95)

An erudite and entertaining evaluation of Hollywood's influence on our culture, David Thomson's AMERICA IN THE DARK interprets cinema history and evaluates countless films in a by-and-large optimistic assessment. (Morrow \$8.95)

Highly useful in tracing film footage excerpted from a variety of sources, John Chittock's WORLD DIRECTORY OF STOCK SHOTS AND FILM PRODUCTION LIBRARIES lists 301 national film archives and film libraries in 59 countries, together with a cross-indexed breakdown of available material. (Pergamon \$16.50)

A comprehensive listing of all non-theatrical films dealing with well-known personalities, **FAMOUS PEOPLE ON FILM** by Carol A. Emmens is a handy reference tool that offers complete data on some 1500 famous (and infamous) persons. (Scarecrow \$13.50)

That our experience of film is heightened by understanding its technique, esthetics and appeal is Gerald Mast's thesis in **FILM/CINEMA/MOVIE**. His stimulating and factual book offers a persuasive analysis of theory and film's emotional impact. (Harper & Row \$17.50)

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### CELEBRITIES ON PARADE

The third, revised and enlarged, edition of a critical study by the well-known film scholar Herman G. Weinberg, **THE LUBITSCH TOUCH** has just been published. It is in all respects a classical text that belongs in every library. (Dover \$4.)

In **KEN RUSSELL**, Joseph A. Gomez portrays his subject as a creative director who achieved in his films a remarkably successful balance between fidelity to both theme and tone of the original work and to his own highly original cinematic concepts. (Perigamon \$15.95)

Ken Russell's forthcoming film about Rudolph Valentino (as played by dancer Rudolf Nureyev) coincides with two new biographies of the actor and one reprint. **VALENTINO: THE LOVE GOD** by Noel Botham and Peter Donnelly (Ace \$1.95) and **VALENTINO: THE TRUE LIFE STORY** by Vincent Tajiri (Bantam \$1.95) neatly complement each other, telling essentially the same story, but from opposite viewpoints. Alexander Walker's **RUDOLPH VALENTINO** (Penguin \$3.95) casts a more reflective look at the Valentino phenomenon, the myth and reality that combined to make a legend. Exceptionally good illustrations enhance an informative text.

French director Roger Vadim obviously had fun writing **MEMOIRS OF THE DEVIL**, an unabashed autobiography that is a happy mixture of anecdotes about his chaotic youth, his actress-wives (Bardot, Deneuve, Stroyberg and our own Jane Fonda) and other ladies, and his lighthearted views on filmmaking. Translation from the French is sloppy. Viz page one: "metteur en scène" means "director," not "producer;" "justiciable" means "actionable" not "justifiable;"

"amoralité" is not "immorality." (Harcourt, Brace Jovanovich \$7.95)

Preceding a predictable avalanche of books about Elvis Presley is **ELVIS: WHAT HAPPENED?** as told to Steve Dunleavy by three of Presley's friends and bodyguards, Red West, Sonny West and Dave Hebler. Its main merit is its first-hand inside look at the celebrated singer, his bizarre behavior, his frenetic womanizing, and his nearly schizoid personality. (Ballantine \$1.95)

DeWitt Bodeen collects portraits of the personalities who established Hollywood's early reputation in **MORE FROM HOLLYWOOD!**, a second volume of 15 bio-filmographies of Blanche Sweet, Alla Nazimova, Elsie Ferguson, Jeannette MacDonald, Ramon Novarro and other stars. (Barnes \$15.)

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### TELEVISION WORLD

U.S., British and Canadian representatives of the broadcast industry, meeting under the auspices of the Canadian Radio/TV Commission, engaged in an in-depth discussion now published as **SYMPOSIUM ON TELEVISION VIOLENCE**. The social effects of violence on screen, its economic motivations, its visibility in shows and news programs were debated in a broad approach to a pervasive problem. (Unipub \$9.25)

In **THE TODAY SHOW**, Robert Metz memorializes the first 25 years of NBC's celebrated 7 A.M. mixture of news and entertainment. His lively behind-the-scenes look scans the personalities who hosted the show from Dave Garroway to Barbara Walters and her successors, the network executives who fought for control, and the stunts that gave new life to a show in trouble. Colorful and detailed, the book is a fine piece of exciting reportage. (Playboy Press \$10.)

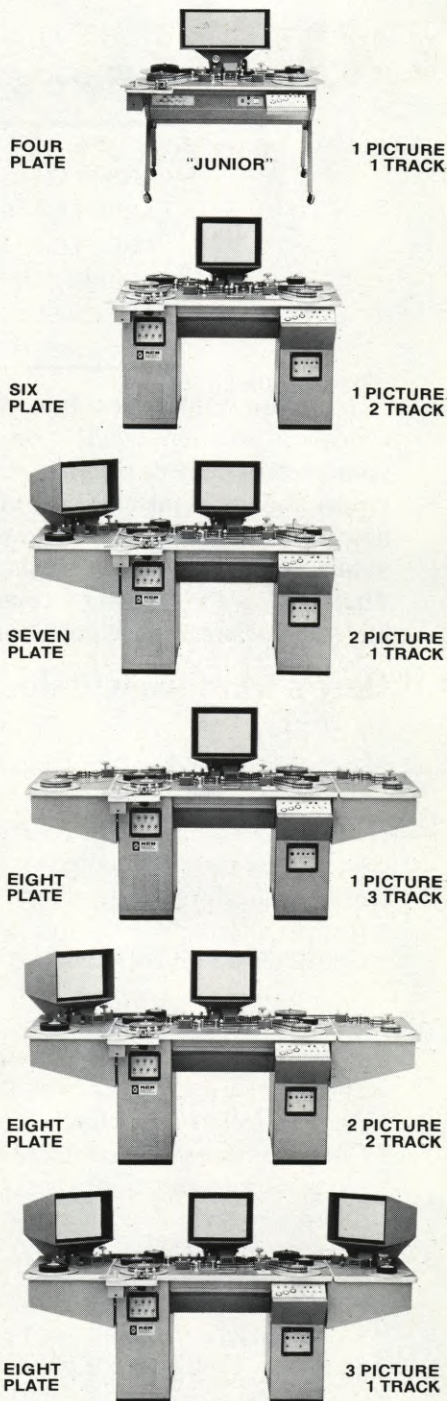
A thoroughgoing and accurate record, Nina David's **TV SEASON '75-'76** lists all the shows aired during that period with complete cast-&-credits for all network programs, including PBS and syndicated shows with national distribution. (Oryx Press \$13.95)

A revised and expanded edition of Robert LaGuardia's **THE WONDERFUL WORLD OF TV SOAP OPERAS** is well documented and engaging, offering extensive plot summaries of the 30 most popular shows. (Ballantine \$2.25)

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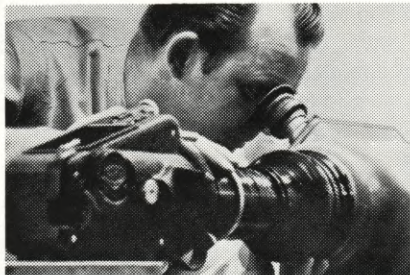
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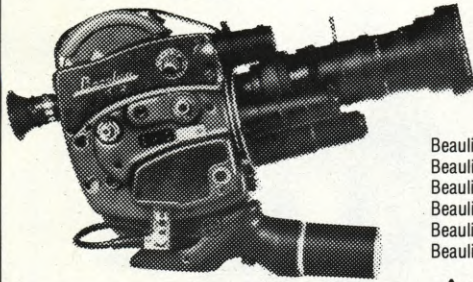
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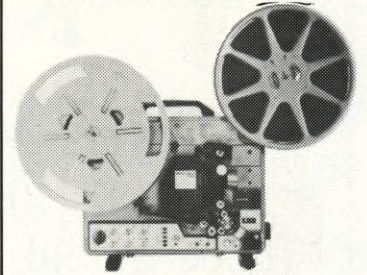
### Used Zoom Lenses

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|-----------------|---------|
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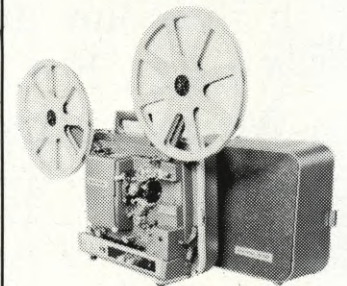
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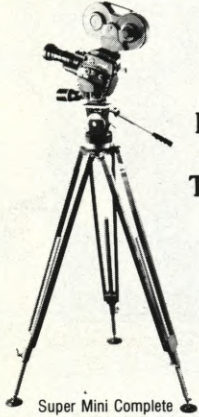


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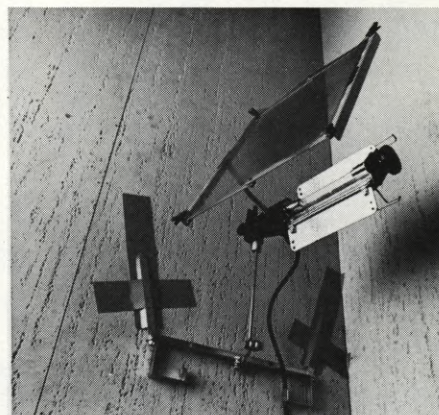


Locks atop doors, open or closed: flags control light precisely.

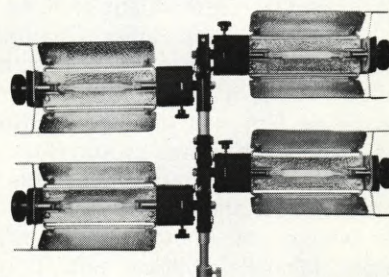
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# BEHIND THE CAMERA ON VALENTINO

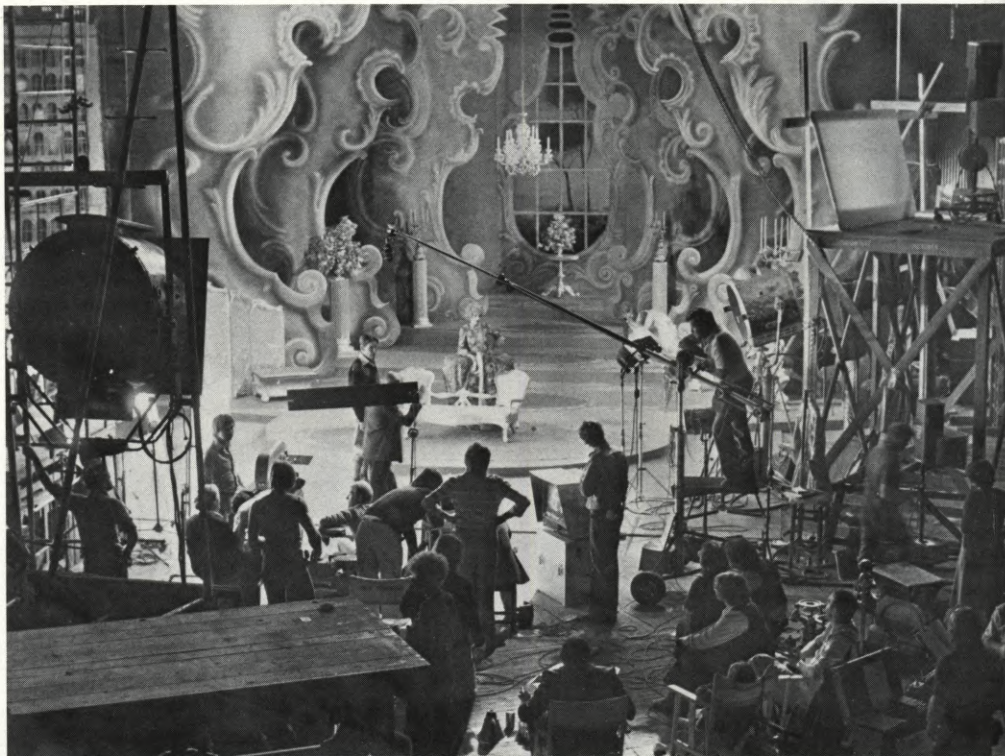
A provocative and visually striking film biography of "The Great Lover" of the silent screen re-creates the ambience of Hollywood during its most gilded era

August 23, 1976 was the 50th anniversary of Rudolph Valentino's death at the tragically early age of 31, after only five years and 14 films as a star.

A week earlier, on August 16, 1976, shooting began in Spain on Ken Russell's motion picture based on the life of the "Great Lover of the Silent Screen," "VALENTINO" with Rudolf Nureyev, the world's greatest male dancer of this generation, as Valentino. This is Nureyev's first acting role in motion pictures.

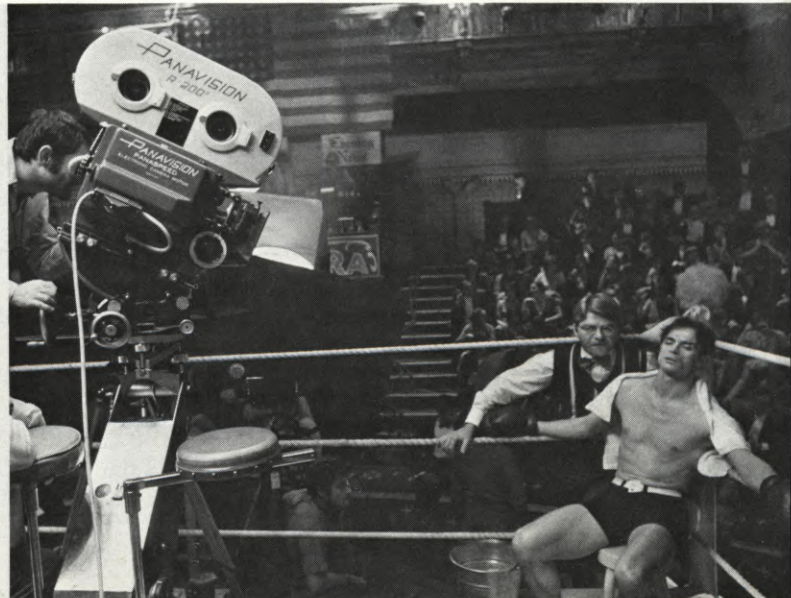
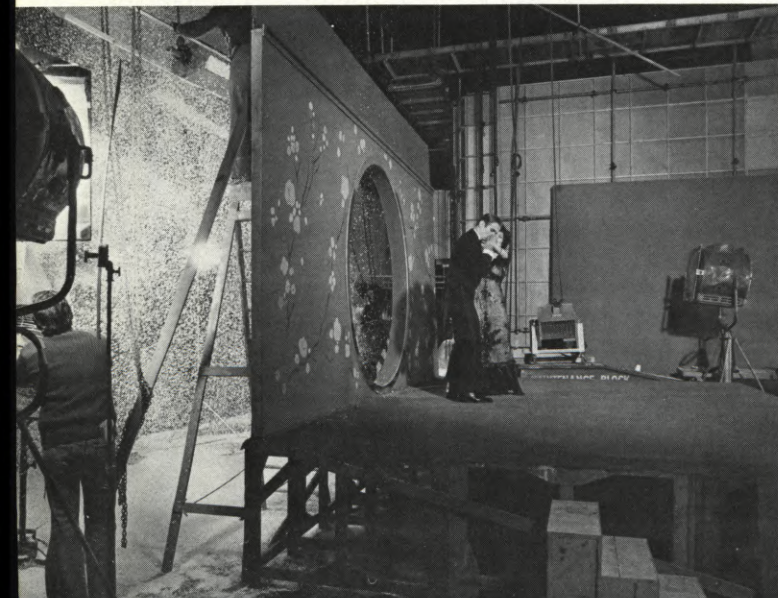
"VALENTINO" is a Robert Chertoff-Irwin Winkler Production for release by United Artists, a Transamerica Company. The film was directed by Ken Russell and was written by Ken Russell and Mardik Martin. Harry Benn is associate producer and Peter Suschitzky is the Director of Photography. Leslie Caron, Michelle Phillips and Carol Kane are starred and Felicity Kendal, Seymour Cassel, Huntz Hall, Peter Vaughan, David de Keyser and Alfred Marks are co-starred.

Following the initial two weeks' location filming in the Almeria and Barcelona areas of Spain, the "VALENTINO" company moved to England for interiors at EMI Elstree Studios, London, and additional locations in



Filming the Chertoff-Winkler production of "VALENTINO" on the fanciful "MONSIEUR BEAUCAIRE" set at London's EMI Elstree Studios. For such sequences it was necessary to assemble archaic filming equipment of the era, including hand-cranked cameras and old-fashioned "Kleig" lights. In this case, the entire set was painted in monochrome grays and illuminated with pink light.

(LEFT) In this scene from the filming of "CAMILLE", Valentino (Rudolf Nureyev) tangles in fervid embrace with flamboyant Russian actress Alla Nazimova (Leslie Caron) against a background of bubbling splendor that would do credit to Lawrence Welk. (RIGHT) The Panavision R-200 camera is lined up for a shot of Nureyev reenacting the boxing match which Valentino fought (and won) to prove his manhood, after having been accused in the press of being a "pink powder puff".





(LEFT) Peter Suschitzky, brilliant young Director of Photography (Lighting Cameraman) on "VALENTINO". (CENTER) Michelle Phillips, Rudolf Nureyev and director Ken Russell on one of the film's elaborate sets. (RIGHT) Re-creating a war scene from Valentino's "THE FOUR HORSEMEN OF THE APOCALYPSE".



(LEFT) Time out of war, during filming of the "FOUR HORSEMEN" sequence. (RIGHT) Director Russell and Cinematographer Suschitzky teamed for the second time on "VALENTINO", their first joint effort having been the bizarre "LISZTOMANIA". (BELOW LEFT) Russell with Phillips and Caron on the set. (CENTER) Nureyev as "THE SHEIK". (RIGHT) Nureyev as the whip-wielding, tangoing gauchito of "FOUR HORSEMEN".





Director of Photography Peter Suschitzky views a set-up through the camera. Although he claims not to have pre-planned any special photographic style for this vehicle, his photography is superbly stylish, evoking both the undeniable glamour and the crass vulgarity of Hollywood during the silent era.

London, Blackpool and Bournemouth.

Rudolph Valentino, born in Italy in 1895, was originally a "ten-cents-a-dance" ballroom "taxi-dancer" in New York, before going to Hollywood. After appearing in several films in small roles, he became a major star in "THE FOUR HORSEMEN OF THE APOCALYPSE" in 1921. His smooth, dark good looks, his animal-like grace, and his screen love-making techniques (tinged with a touch of masterful cruelty) made him a sensation with every female cinemagoer of the early 1920's, and his reputation as "The Great Screen Lover" continues to this day. His other famous films included "CAMILLE", "THE SHEIK", "BLOOD AND SAND", "MONSIEUR BEUCAIRE", "THE EAGLE" and "SON OF THE SHEIK".

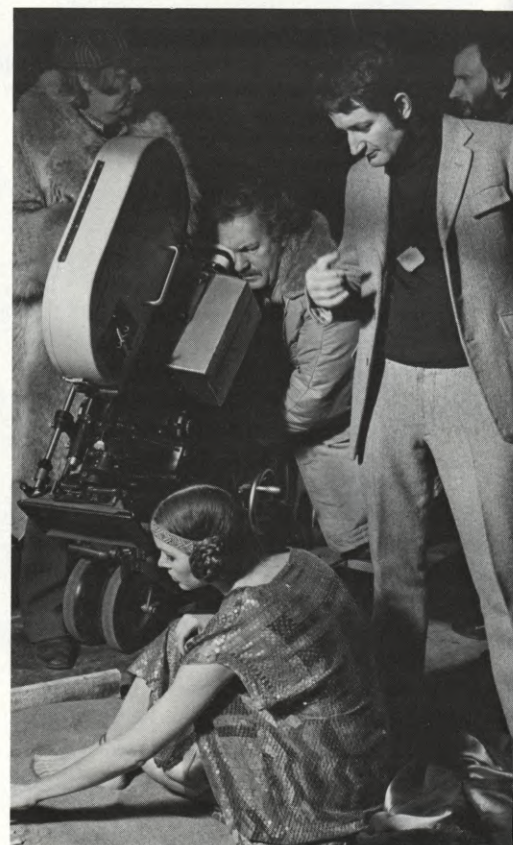
Valentino's death (from peritonitis) in 1926 was covered by the press as a na-

tional disaster in the United States. More than 100,000 mourners filed past his body during his "lying-in-state" in New York City. There were riots in the streets, many injuries and at least half-a-dozen suicides.

Title-role star Rudolf Nureyev, who leaped into the world's headlines when he defected from Russia to the West more than fifteen years ago, needs little introduction. Since his fantastically successful debut at the Royal Opera House, Covent Garden, London, dancing with Margot Fonteyn in "Giselle" in 1962, he has danced in an extensive repertoire of productions, ranging from the classical to the modern abstract ballet. He has become the world's most distinguished and popular male dancer and also, in more recent years, has worked successfully as choreographer and producer.

Director Ken Russell, one of the world's most imaginative, stimulating and often controversial movie-makers, has to his credit such motion pictures as "WOMEN IN LOVE" (which won him an Academy Award Best Picture nomination), "THE MUSIC LOVERS," "THE DEVILS", "THE BOY FRIEND", "SAVAGE MESSIAH", "MAHLER", "TOMMY" and "LISZTOMANIA", plus numerous television productions.

Peter Suschitzky, one of Britain's youngest full-fledged Lighting Camera-men (Directors of Photography), had worked with Ken Russell on one previous project, having photographed the visually stunning "LISZTOMANIA". In the following interview for *American Cinematographer* he talks about the particular challenges of



(ABOVE RIGHT) The camera is lined up for an insert of the "bones" cast by Valentino's second wife, Natasha Rambova (Michelle Phillips), as her means of foretelling the future. (BELOW LEFT) The Samcinevision electronic viewfinder affixed to the door of the Panavision R-200 camera. (RIGHT) Ken Russell watches a take on the Samcinevision video monitor. Although the black-and-white image provides little clue to color values, Russell found it valuable for checking performances and the framing of compositions.





On location, cast and crew members watch video tape replay of a scene that has just been filmed. (RIGHT) Shooting on location in Almeria, Spain, doubling as Southern California. Other locations included Barcelona, London, Blackpool and Bournemouth. Although in past biographical films (most notably, "MAHLER" and "LISZTOMANIA"), Russell has radically distorted his subjects for bizarre effect, he plays "VALENTINO" relatively straight, presenting a very human portrait of the ill-fated star.

photographing "VALENTINO" and the techniques which he had been employing up until the time of the interview—which took place six weeks after shooting had begun:

**QUESTION: Can you tell me about the stylistic approach you have adopted in photographing "VALENTINO"?**

*SUSCHITZKY: This picture is quite different from the last one which Ken Russell and I worked on together, "LISZTOMANIA". It's meant to be less fantastical; it's supposed to be more of a dramatic picture than that one turned out to be — but I can't say that I planned any specific approach to it before we started, except that I thought about how to light the studio sequences. We have dramatic sequences showing film crews at work on several of Valentino's pictures in the Hollywood studios of the time and those were really the only sequences I had specific thoughts about.*

**QUESTION: On the set I've noted a profusion of old-time movie-making props: hand-cranked cameras, the so-called "Kleig" lights, etc. How accurate are such details to those of the actual period?**

*SUSCHITZKY: I can't say that we've been absolutely accurate in re-creating the historical details of the period. I was hoping that we would be precisely accurate in doing so. In fact, I wanted to shoot the silent film reconstruction sequences with the hand-cranked camera which David Samuelson prepared for us and which we had done tests on. In point of fact, my first encounters with movie cameras had resulted from my acquaintanceship with an old silent movie cameraman in Paris who taught me how to sing the right "marching songs" and how to do the fades and dissolves in a hand-cranked*

*camera, so it wasn't entirely foreign to me and I was hoping to do those sequences in black-and-white using such a camera. But as it turned out, we had to abandon that idea, as Ken had become enamoured of the television viewing system we're using (Samcinevision) and we could not have had that on the hand-cranked camera. The other reason is that instead of remaining faithful to the way in which silent movies were shot (on the whole,*

*with very restricted camera movements), he's included the sort of camera movements within the black-and-white reconstruction scenes which are not historically correct. But he wanted it that way, and such movements would have been a problem with a hand-cranked camera.*

**QUESTION: You've made several references to black-and-white, which, of**  
Continued on Page 1192

Peter Suschitzky poses in character with the silent camera crew. He had hoped to actually use the hand-cranked Pathé camera shown here (and put into working condition by David Samuelson), but technical considerations made that scheme impractical—mainly because the camera could not have been rigged to function with the Samcinevision video viewing/playback system.



WITH KEN RUSSELL ON THE SET OF



By HERB A. LIGHTMAN

"A myth playing a myth" is how the director of this film rationalizes the casting of a famed Russian ballet dancer as a Latin screen lover

#### LONDON

We drive through the curlycue outskirts of London ... through a fine misty drizzle — what used to be called "typical English weather" ... until the drought.

We pass the ghostly hulk of what was formerly MGM's Borehamwood Studios, shooting site of many a cinematic triumph ... now sadly serving as some

sort of massive garage ... but surely still shimmering with the shades of Kubrick's fabulous "2001".

Off to the left, a higgledy piggledy complex of sprawling structures ... the venerable precincts of EMI Elstree Studios ... more like some monstrous button factory than the sort of place where one might expect the magic of the early silver screen to be in the

process of re-creation ... the magic of Hollywood in the 1920's ... the magic of Ken Russell and Rudolf Nureyev re-incarnating a myth within a legend within an enigma ... the magic of "VALENTINO"!

On the sound stage, the hush of the cathedral, despite the fact that hundreds of people are milling about. There is a movie set within a movie set





— and two film crews, ancient and modern — for the set is a replica of a Hollywood shooting stage circa 1921, the stage where they are immortalizing Rudolph Valentino, “The Great Lover”, in “MONSIEUR BEUCAIRE”.

One end of the stage is faced with a huge stylized monochrome set — all grays and black and white — suffused with pink light. Through a maze of pseudo French courtiers in powder-wigged finery I spot Ken Russell sitting quietly beside a video monitor. He is ready for a take. The chaos of humanity organizes itself into an ordered pattern of “Places, everyone!”. The cameras roll: two sets — the Panavision kind and the hand-cranked kind. An extremely intricate dolly shot develops as Nureyev, all white-faced make-up and shimmering wardrobe, strides forward, trailed by an entourage.

As he continues off the set at the tag end of the scene, he brushes within inches of me, and I am surprised to note that he is considerably shorter than I had imagined. He is obviously put together with steel cables, however, and moves like a panther.

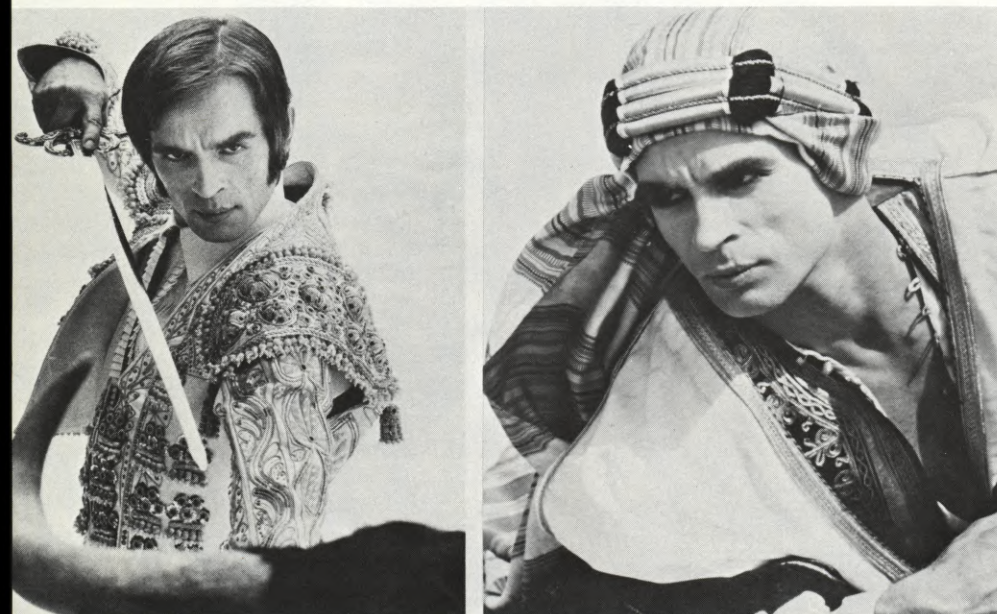
After several takes and the one designated as “Print!”, there is the inevitable tea break, a civilized British custom, and it’s time to meet the people. First there is a pleasant reunion with Peter Suschitzky, the brilliant young Director of Photography

**ON THESE PAGES:** Highlights from the career of the great silent screen star, Rudolph Valentino, as depicted in the film “VALENTINO”. (RIGHT) Rudolf Nureyev as Valentino and Michelle Phillips as Natasha Rambova.

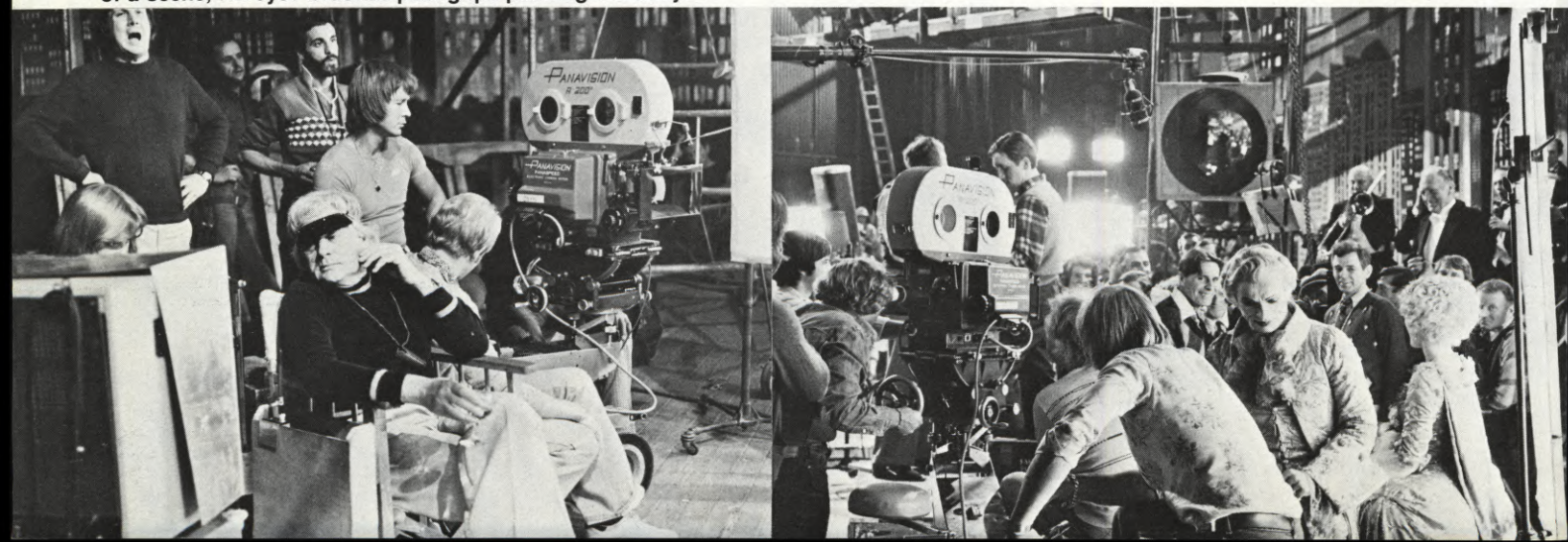




Two living legends in the process of re-creating a myth. Russian ballet star Rudolf Nureyev, dressed as "MONSIEUR BEUCAIRE", one of Valentino's most famous characterizations, sits on the set with talented, controversial director Ken Russell, a former ballet dancer himself, as they take a break between set-ups during the filming of the Chartoff-Winkler production in London.



(ABOVE) Nureyev reenacting two of Valentino's greatest roles, the bullfighter in "BLOOD AND SAND" and the dashing desert hero of "THE SHEIK". (BELOW LEFT) On the set at the EMI Elstree Studios outside London, Ken Russell watches the monitor of the Samicneivision electronic viewing system, which permitted him to check not only performances, but the framing of individual scenes. (RIGHT) At the tag end of a scene, Nureyev brushes past grips pushing the dolly.



(Lighting Cameraman) whom I had previously met just after he had completed the photography of Russell's "LISZTOMANIA" (see *American Cinematographer*, February, 1976).

Next I am introduced to the American co-producer, Robert Chartoff. I had been informed quite emphatically that this was very much a closed set and that my invitation to visit it was on the same plane with having been granted the Keys to the Kingdom, but Chartoff welcomes me aboard cordially enough, asking only that I withhold publication of my stories until a time closer to the release date of the picture. Fair enough.

Then it's time to meet The Man himself, Ken Russell. Having been conditioned by his incredibly flamboyant public relations, I almost expect some sort of foaming-at-the-mouth mad scene, but Russell acknowledges the introduction with polite restraint and says he will be happy to talk with me at length after the day's shooting has been completed. He is quiet, totally understated, not at all what I had expected.

But then I realize that my puzzlement in meeting Russell is only an extension of my ambiguous attitudes toward his work. I had been deeply touched by the misty "WOMEN IN LOVE", impressed by the technically brilliant "THE MUSIC LOVERS", alternately fascinated and repelled by "THE DEVILS", charmed and amused by "THE BOY FRIEND", profoundly moved by the vastly underrated "SAVAGE MESSIAH", put off by the frantic overkill of "MAHLER" and "LISZTOMANIA", and dazzled by the spectacular brilliance of "TOMMY". But I have always been aware that, controversial though he may be, Russell, even at his most excessive low, is probably the most exciting film-maker of the decade.





(LEFT) In an eyebrow-raising early sequence of the film, Nureyev, as Valentino, teaches the tango to famed Russian ballet star Nijinsky (Anthony Dowell) in Maxim's Ballroom in New York, where Valentino worked as a "taxi dancer" prior to achieving screen stardom. (RIGHT) Michelle Phillips, as Natasha Rambova, Valentino's second wife, and Leslie Caron, as actress Alla Nazimova, prepare to leave the funeral parlor with their elaborate entourage, after viewing their beloved "Rudy" for the last time.

After lunch with Peter Suschitzky and his delightful family (visiting him on the set that day), I return to the stage, where a new scene is in rehearsal. This is a re-creation of the famous pink powder puff incident which, I am told, cast such doubts upon the virility of the real-life Valentino that he was forced to engage in a public boxing match to prove his *machismo*.

Still garbed as the effete "MONSIEUR BEUCAIRE", Nureyev is sprawled on a settee dallying with a lady. On a catwalk directly above them, two grips of the period are watching the rehearsal. One of them drops a large pink powder puff onto Nureyev. Symbolism!

The scene is a simple one, but it involves much clambering about up high to get the lights set and exquisite timing to get the powder puff to do its thing precisely on cue. Sitting in his chair, Russell checks the action on the Samicinevision video monitor, quietly asking for repeated takes until he gets what he wants. Then it's a wrap, and he invites me to his office.

It is sparsely furnished in early studio drab, with no accoutrements to suggest the creative ferment that must surround the man. On the desk are copies of a new book which has been written about his work and he tells me that he's very happy with it. "It's really one of the best of its kind that I've ever seen," says he. "Absolutely first-rate." He offers me refreshment, pours a glass of white wine for me, but nothing for himself.

I cannot but marvel at how different the man seems from the image that has been built up about him, a seemingly calculated public relations effort which

must have come about with his cooperation, reluctant or otherwise. In the press he is almost always depicted in some sort of bizarre gear, clowning it up like a proper buffoon. But the man with whom I am now alone does not jibe with that image, not even slightly. The impression that comes across to me is that of a down-to-earth, keenly intelligent, serious professional, with no affectations, but a dedication to perfectionism in his craft.

Just now he also seems a bit ill at ease. "Do you really want to do this interview?" he asks me.

"I do if you do," I reply.

"Well, I don't really," says he, "but I will."

And he does — most articulately — as follows:

**QUESTION: Can you tell me first what visual style you have conceived for "VALENTINO"?**

*RUSSELL: I usually find that a visual style imposes itself on a film. In shooting "THE DEVILS", for example, we worked out very carefully beforehand the idea that we wanted it to look like an antiseptic world, because although it was set in the medieval period, I wanted it to reflect the modern world. So we had all our buildings white and glistening and shining. As I*

*Continued on Page 1164*

Director Ken Russell, dressed as a polar bear, prepares to have a go with an Arriflex camera. Russell, who photographed three of the early films that gave him his professional start, enjoys cinematography and sometimes man's a second camera on certain scenes of his films. He insists upon absolute precision in framing compositions.



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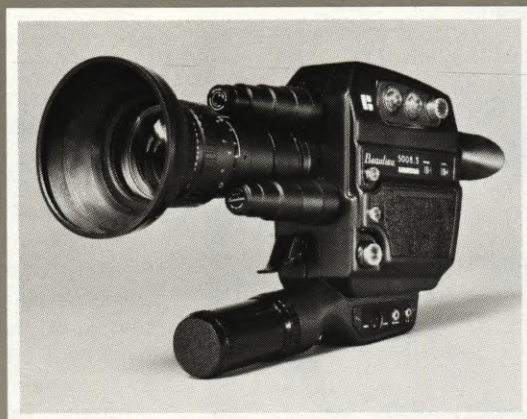
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# PHOTOGRAPHING "WASHINGTON BEHIND CLOSED DOORS"

By JOSEPH BIROC, ASC

Starting off as eight hours, but ending up as twelve, this series was filmed on a combination of studio sets and actual locations

When I was assigned to photograph "WASHINGTON: BEHIND CLOSED DOORS", I was told that the series would shoot for the first two weeks in Washington, D.C., and then move back to Hollywood. However, I was on another assignment for ABC and it became obvious that I couldn't finish on time for the Washington start. So, about a week before they were scheduled to leave for the East, they asked if I would mind if somebody else shot the stuff in Washington, and I said, "No, fine! I'd be very happy to have him do it, because then I wouldn't have to rush back there and make the people here unhappy."

Not only that, but it was in the middle of December, during that extremely cold spell they had in the East. They worked in below-zero weather the whole time they were there, so I didn't miss a thing. I sat back in Hollywood and worked with the art director and several of the other people — getting the sets ready, checking costumes, all the little things that have to be done — so that when they came back, I was pretty well lined up.

The "WASHINGTON" series was originally supposed to consist of eight one-hour segments. Then, as we went along, it got to be ten hours and, ultimately twelve hours — going on the air finally in six two-hour segments. When it went from eight to twelve

**The six-part ABC "mini-series" starred Jason Robards in the role of a not-very-fictionalized American President of questionable integrity.**

hours, they didn't increase the budget or the schedule, but we just kept on going, shooting five or six pages of script a day, and everybody was happy.

Of course, with the shooting extended like that, I couldn't quite finish the project, because I had made a previous commitment to go to MGM to photograph "THE CHOIRBOYS". So, after having been on the "WASHINGTON" project for more than 80 days, I departed to fulfill my other obligation and Jack Swain, ASC, took over as Director of Photography. However, I left everybody else with them — the camera crew, the grips, the electricians — so that there would be a continuity of personnel and no disruption in the middle of the project. I picked up a whole new outfit at MGM.

The producers of the series wanted to make all the sets we worked on in the studio look like actual locations, so every set had to have a big ceiling on it. Fortunately, most of the sets were 12 or 14 feet high, so the ceilings didn't make much difference. The main problem was in the Oval Office, because they wanted that ceiling to be permanent, with no way to take it out. I said, "If you'll give me a little place on one side or the other so I can get a few lights in, we can handle it with no problem."

But it didn't turn out that way. Fortunately, however, when they were designing a ceiling for that room they had to put a molding around it. So I had the art director put the molding one inch from the wall, which meant that if I wanted to put a light anyplace we just threw a line through the one-inch opening down onto the stage and pulled a light up there. We had that molding completely around the Oval Office, so that anywhere we wanted to hang a light — as long as it was out of the picture — we could do it.

We tested a lot of materials for the ceilings in order to find one that was transparent enough to let light from the parallels through to illuminate the people on the set, but opaque enough (when you hit it with light from the front) to overwhelm the light that was coming through. They tried many different fabrics and finally came up with a special silk that would do the trick.

The sets built in the studio reproduced fairly extensive areas of the White House. There were various offices opening into a hallway about 125 feet long, with an elevator and a

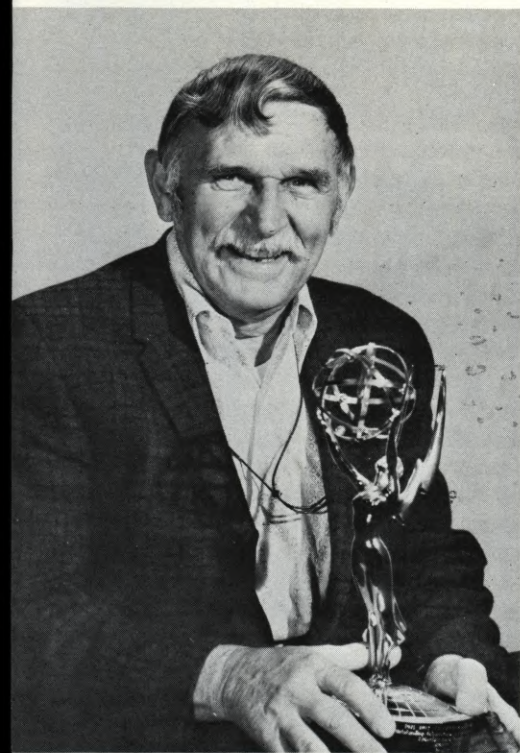
stairway going both upstairs and downstairs. In one shot we brought two people down the stairs, holding on their faces all the way. Then, as they went past a certain wide area in the hallway, the camera moved around to their backs following them to the end of the hallway, through an office and, eventually, into the Oval Office, where the camera moved around freely to end on a composition that showed about three-quarters of the room — all in the same shot.

In order to get the widespread camera movement for that particular shot, we used a hospital wheelchair as a dolly. However, since the camera angle was too low for what we needed to show, we put a board across the handles of the wheelchair and the camera operator sat on the board. There were only a couple of places where we had to follow focus because the actors got too close or too far away. One assistant did the follow-focus on the beginning part of the scene; then, as the camera moved into the Oval Office, the other assistant picked it up and just set a focus to keep out of everybody's way.

The wheelchair worked out quite well for some of the many shots of this kind we had to make, except that it would often bump into a doorway or a piece of furniture or an actor. Finally it got to be such a nuisance that the operator decided to carry the Arriflex 35BL on his shoulder and just walk with it — and that really gave us the best result. Once the operator got used to timing his footsteps to those of the actors (to cover the raising and lowering of the camera), we were able to do away with the wheelchair.

In addition to the considerable footage shot on the White House sets in the studio, there were many sequences filmed in actual interior locations and these involved some camerawork that was even tougher to execute. For example, there was one sequence shot in an office building in downtown Los Angeles in which we brought a man out of an elevator into a dark wood-paneled set, up a little hall, down a long corridor, through a small alcove and finally into the main office — then back the same way. We started that scene at f/2. Then we went progressively to f/2.5, f/4 and f/8 as the doors opened into the main office. When we came out again we wound up at f/3. This meant





**Director of Photography Joseph Biroc, ASC, shown with his "EMMY" Award statuette. He also shared an Academy "OSCAR" (with Fred Koenkamp, ASC) for photography of "THE TOWERING INFERNO".**

not only focus changes, but stop changes all the way. The assistant had little arms on the iris ring with tags on them and he made his changes according to floor marks as the scene progressed.

We worked in several hotels, including the new Bonaventure Hotel in Los Angeles, which wasn't even finished at the time. When we looked at the various suites we were going to use just three days before we were supposed to shoot, there were paint pots all over the place; but the walls hadn't been painted and there was no carpeting or furniture. Three days later, when we came in to shoot, everything had been painted, the carpeting was laid, the furniture was in, and the suites were complete — just as if they had been there for 50 years.

We had to shoot a lot of daylight sequences in those suites and the exterior walls were almost entirely glass. But because the light was so variable outside, we drew the drapes and this gave us complete control. These "sets" were very elegant. We also shot in the lobby of the hotel and in the elevators.

Perhaps the biggest challenge was the footage shot in and around the Biltmore Hotel during the campaign sequence on the night of the election. When the director and I scouted that location, we took the gaffer and the key grip with us in order to get an idea of what the problems would be.

The director said that the candidate was to walk from one hotel across the street into the other hotel to make a big speech. I said, "Look, there's no way for me to light this thing unless I put some kind of towers in the middle of the street." He said, "Fine, Just put some bunting on the towers and they'll look like part of the set."

The next problem was making a dolly shot down a hallway about 200 feet long to follow the candidate after he entered the hotel. I asked the director if he only needed to show one side of the hallway and he said yes. So I said, "No problem. We'll put all our lights along the other side."

The same held true for the Grand Ballroom, which is a huge area a couple of hundred feet square. He said there would be one side that we would never see in the picture, so I planned to put my lights along that side and on the balcony above. We got one lucky break on this sequence, both inside and on the street, which was due to the fact that the action was supposedly being covered by television cameras. That meant that whenever I absolutely couldn't avoid having a light show in the scene, all I had to do was put a prop television camera next to it.

In 15 minutes of scouting that location, it was explained to us what we were going to do, and we never went back there until the day we shot. The gaffer and I talked about how high the parallels would have to be, what kinds of lights we wanted to use, roughly where the people were going to be, how we were going to handle the hallway leading into the Grand Ballroom, and how we were going to light the 450 to 500 people who would be out on the street.

This entire sequence was our greatest challenge technically, but I've found that if you plan these things out in advance, and know what is going to happen, the problems are solved. By the time you get there to shoot, all the really rough things have been worked out. Of course, other problems always arise during the shooting, but you can usually take those in stride.

One of the trickiest challenges, from the standpoint of matching, had to do with the tie-in footage which we shot at the Convention Center. This consisted of closer shots of our actors and they had to intercut with actual long shots and medium shots filmed during the actual Democratic convention in Chicago. We kept running that footage over and over again, trying to get our stuff to match in with it perfectly.

There was one especially tricky shot in that sequence which involved

shooting up so that you could see the faces of two groups of people yelling across at each other. We were between them. We put a blanket on the floor and two guys just pulled the camera operator down onto the blanket during the scene, so that it could end with him shooting straight up at the faces of the people. He did the whole thing hand-held in this relatively simple way.

Another interesting actual location that we used was a big beautiful house in South Pasadena that was supposed to be the home of the Cliff Robertson character. Obviously, it's considerably cheaper to go into a home like that which is worth a couple of million dollars than to try to construct it on a sound stage for two days of shooting — which might cost \$80,000. It's so much easier to bring just the props you need and shoot in an actual location. It's been that way for several years. It's just too expensive to work on a stage, unless you have something that really has to be controlled — like our Oval Office sequences. We had so much to shoot in there that it was really advantageous to build a set.

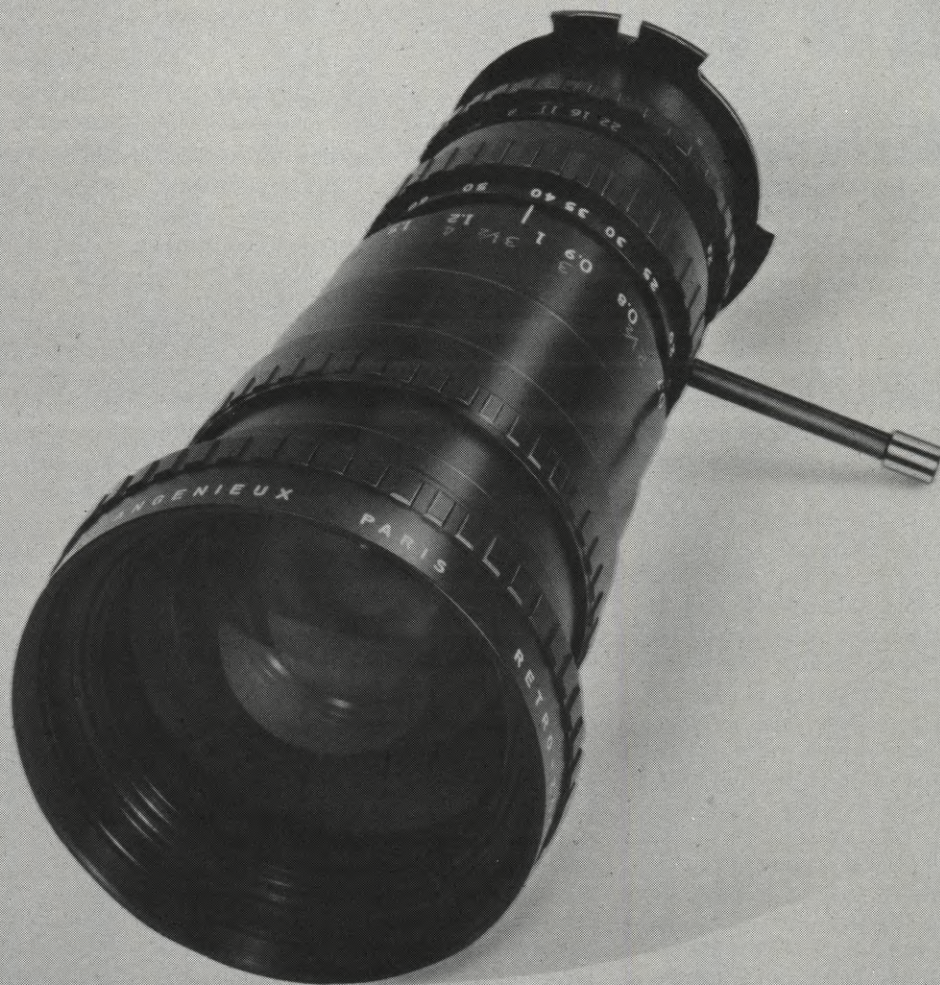
As far as I'm concerned personally, it really doesn't matter whether I am shooting on a stage or in an actual location. The important thing is to get the background right. Of course, there are special problems on location, especially when you're doing big night exteriors. But, generally speaking, I would say that you get better results shooting on an actual location than you get on a stage. It forces you to do things

**Continued on Page 1197**

**Extensive location filming for "WASHINGTON: BEHIND CLOSED DOORS" included scenes shot in the Grand Ballroom of the Los Angeles Biltmore Hotel.**



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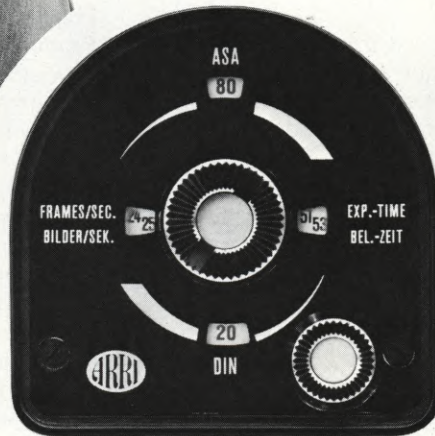
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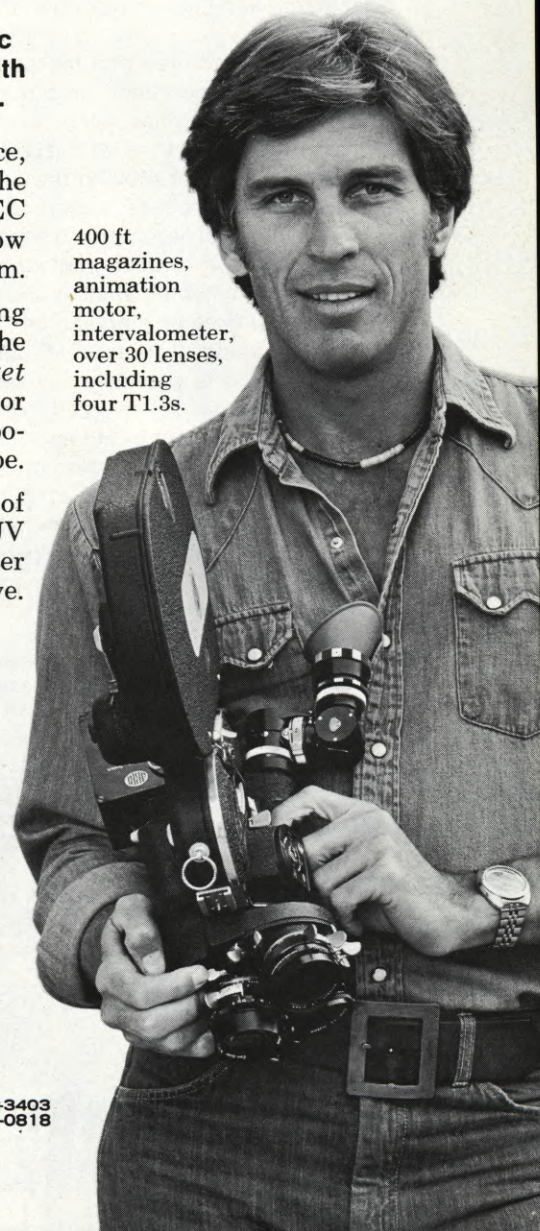
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# TRAVELING LIGHT ON LOCATION

By JON FAUER

Staff Cameraman, Vision Associates

A three-week South American documentary filming trek proves "less is more" when it comes to toting equipment halfway around the world

Julius Caesar would have been a fine production manager. In his classic treatise on the subject, several paragraphs after describing the location in Gaul as being divided into three parts, he outlines his complete equipment and baggage list. "Impedimenta" is the Latin word used interchangeably for both baggage and hindrance: while the baggage is essential, it also hinders the march. Caesar, therefore, chose to eliminate some impediments and to travel light.

There is in New York an unemployed production assistant who quoted Caesar as justification for leaving behind the most essential equipment on a recent film. What he was unaware of was an axiom evident even to those without such a solid background in Roman history: equipment not packed becomes most essential in the most unlikely places.

The evolution of documentary filmmaking has created a continuing conflict between what to take on a job and what to leave behind. As with any evolutionary process, the fittest survive. The fittest were those who made the right decisions and packed the right equipment. They could be seen at airport check-ins with their thirty cases and worried looks. Skycaps and customer service agents would materialize as if it were payday. Very often it was payday, as little portraits of Washington and Lincoln were bartered for various necessary services.

This did not guarantee that the equipment would arrive on time or at all. The fittest, as a result, developed ailing stomachs and thinning hair. Many burned out by age thirty. Others evolved long arms and simian posture from the predominant activity of moving the heavy equipment from place to place, a process known as "schlepping." Filmmaking was more schlepping than shooting.

Recently, some innovative individuals and organizations have come up with lighter, smaller and more efficient equipment permitting greater mobility, flexibility, more shooting and less schlepping. It is as much an evolution in equipment design as it is a philosophy or approach to documentary filmmaking. It involves travelling light, with a streamlined complement of highly sophisticated and highly efficient equipment. It is a system of space-saving packing techniques and an avoidance of duplication. It requires some improvising and quick thinking and occasional repairing, but can achieve superb results with a quarter of the size and weight of the old equipment.

"You must travel light," we were told three months ago.

"You will be travelling across South America for three weeks by virtually every means of transportation known: plane, jeep, ox-cart, bus, boat, and on foot — from equatorial swamps to the Andes to the coast of Brazil. It is imperative that you travel with the smallest and lightest array of gear, easily carried and as unobtrusive and flexible as possible."

On one side of the table were our clients, Munro Ashkenase, Minor Halliday and Paula McTavish, representing Foster Parents Plan of Canada. On the other side were Producer-Director Mel London and Cameraman Jon Fauer, of Vision Associates in New York. The assignment: film enough material in Bolivia, Colombia and Brazil to provide a three-year supply of public service spots and five-minute reports for distribution in Canada and possibly Australia, the Netherlands and the United States.

Foster Parents Plan is a social service organization working among poor societies in countries not yet economically able to help their own poor. Plan gives assistance to desperately poor families, with emphasis on aid to the children of these families, with medical, dental, nutrition and education programs, community and rural projects, family self-help, cooperatives and counseling.

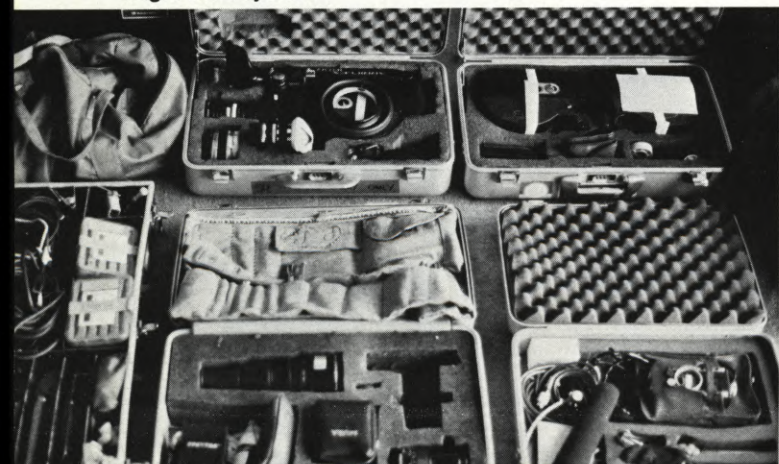
This would be the kind of filmmaking on which Vision Associates has built its reputation as one of the top producers of documentaries, public service spots, shorts, corporate and sponsored films and television specials. Over the past 18 years, Vision has won more than 300 major festival awards and five Academy Award nominations for a list of clients that reads like the Fortune 500.

Space, budget and logistics allow for no larger than a two-man crew in South America: London and Fauer. Of immediate concern to both is the rethinking that must be done in the equipment department.

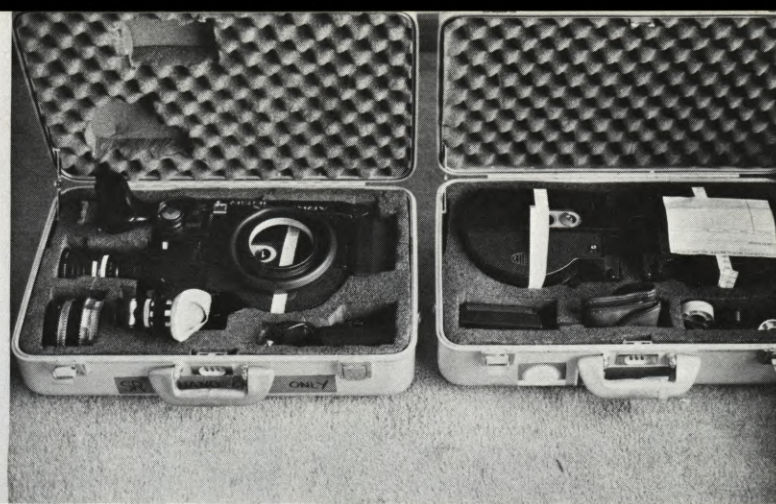
Three years earlier we were on assignment for Plan in Asia, proud of having cut down our normal array to a sparing 20 cases. The equipment list looked like this:

|   | weight in pounds |
|---|------------------|
| 1 Arriflex 16 BL with 12-120 lens, crystal, magazine, spare motor | 45               |
| 1 Case of 4 magazines   | 40               |
| 1 Case with 3 Universal Belt Batteries and tools                  | 35               |
| 1 Arri S with 3 magazines and 12-120 lens                         | 45               |
| 1 O'Connor 50 Tripod  | 20               |
| 1 Baby Legs   | 10               |
| 1 Case with 30 rolls ECO, 5 EFB, changing bag, camera tape        | 50               |
| 4 Cases Lowel D Lights  | 200              |
| 2 Lowel Reflectors  | 25               |
| 1 Case of Deuces  | 40               |
| 1 Tie-In Cable  | 40               |

(LEFT) Entire equipment array for three weeks in South America. Front row (left to right): Lowel Tota-Lights; lens case with fixed lenses, still camera, light meter, Dust-off, camera cleaning kit, volt meter, tool roll (in cover); sound recording case, with Nagra SNN. Rear row: Nylon duffel bag for day's supplies, Arriflex 16SR camera in Halliburton case, magazine case, tube with O'Connor 50 tripod. (RIGHT) Cases which were shipped (left) contained film stock, lights, tripod, lenses, still camera, magazines. Cases hand-carried (right) contained Arri 16SR and Nagra SNN system.







(LEFT) Entire Nagra SNN sound system packs into one #103 Halliburton case, ready to roll. Box with digits at lower left in case is a printed circuit thumbwheel with numbers from 0 to 99, used for slating sound takes. (RIGHT) Arriflex 16SR camera and magazine case custom-fit by Vision Associates into Halliburton #105 cases. The camera is hand-carried everywhere. The lens case can be shipped. Note camera report card on magazine.

|  |    |
|--|----|
| 1 Distribution Panel and extensions      | 50 |
| 1 Nagra 4.2L                             | 40 |
| 1 Case of microphones, tape, accessories | 45 |
| 1 Still Camera with lenses and film      | 15 |
| 1 Case with fixed lenses: 5.7mm to 400mm | 30 |

Everything on the list was interdependent. The Arri BL was for sync shooting. The Arri S was a backup and MOS camera. Since we were shooting with ECO, the slow film speed demanded so much lighting gear which necessitated the tie-in.

The total weight of the twenty cases was 730 pounds.

Overseas excess baggage is computed by the airlines at 1% of the first class one-way airfare to the destination times the number of kilograms excess. It can be a very expensive proposition. Flying to Asia, the first class fare was about \$1000, and we were 332 kilos in excess. The excess baggage fee would therefore have been \$3,332 one way — strong encouragement to ship the equipment two weeks ahead of time by air cargo for a mere \$895, which we did.

Getting the equipment there is only half the battle. If it does indeed arrive, several days of customs brokerage, duty, bonding and meetings with government and assorted officials are inevitable even with the best of documentation. Arrangements must be made for vehicles large enough and extra assistants numerous enough to carry the gear when either former or latter are bogged down. All of which adds to budget, wasted time and is not documentary filming at its lightest and most efficient.

Three years later we arrive at Kennedy Airport unnoticed in a Checker cab. Had it not been for the presence of our tripod case, that universal herald of film crews which brings both help and hindrance in the guise of running footmen and excess baggagemasters, we and our meager assortment of only nine pieces of luggage would be granted the same neglect accorded to invalids, helpless old ladies or any other average citizen attempting to check in. It has been suggested that these hapless travellers bring along an empty tripod case to be accorded the same prompt and lavish attention granted most film crews.

Our favorite skycap is not too pleased by our efforts to travel light. Our seven small cases and two personal suitcases fit neatly onto one hand truck. Diminished equipment and easy handling imply diminished tips. We are the harbingers of the demise of the skycap industry, saving \$5 in tips and at least \$25 by taking a Checker cab instead of renting a full-size station wagon. Mel is looking cautiously optimistic.

Ten minutes later he is ecstatic. For the first time in the history of our overseas travel, the excess baggage bill is legitimately reasonable without wrangling, whining or

offering to shoot 400 feet of take-offs and landings for the airline's stock footage library.

We have avoided air cargo. Five cases of equipment and two personal suitcases go as excess baggage. We board our Avianca flight for Cali, Colombia, with two carry-on attaché cases.

One of the cases contains the heart of our "system," Vision's Arriflex 16SR. About 70,000 feet of film have gone through it successfully since February, 1976 under all kinds of conditions all over the United States. It seemed rugged and reliable enough to take to South America without backup. Uwe Gallert gave me a brief field repair course and a set of schematics. "But, you won't be needing any of that," he said prophetically. Just in case, Volker Bahnemann gave me a list of Arri dealers in South America and we worked out a way of obtaining spare modules within a day, if necessary.

The SR equipped with an Angenieux 10-150mm lens, an on-board battery, fully loaded magazine and variable speed control stows neatly under my airplane seat in its Halliburton attaché case, and is totally self-sufficient to shoot 400 feet of film, even if every other case is lost.

We use the Halliburton #105 case, which measures 21" long x 13" high x 6½" deep. It is fitted with dense polyurethane foam. The camera and all its accessories including handgrip are fully assembled inside the case. Nothing has to be screwed together to begin shooting. It takes about ten seconds from opening of case to commencement of shooting. While it is not advisable to ship the camera this way, it is perfect for hand-carrying and unobtrusive handling in the back of cars, trucks or anything else that moves, as long as someone does not drop the case from a great height.

This has been the biggest problem in the past, when we shipped our BL. It would inevitably be dropped from airplane to runway at least twice a year, most likely in direct response to the numerous FRAGILE stickers pasted all over. The savings in repair bills and recollimation costs by hand-carrying the SR certainly has helped to finance its purchase.

Under Mel's airplane seat is an even smaller #103 Halliburton case, measuring 18" long x 13" high x 6" deep, which contains the entire sound system, self-sufficient and ready to roll. It has been designed and rented to us by the incredible Brothers Gleason. Ed and Phil Gleason are two genius soundmen and electronics wizards in New York who can build a computer from an old toaster and spare parts, or even simple things such as the unit we are carrying to South America.

It was not so simple at first. Our clients wanted as much

Continued on Page 1168

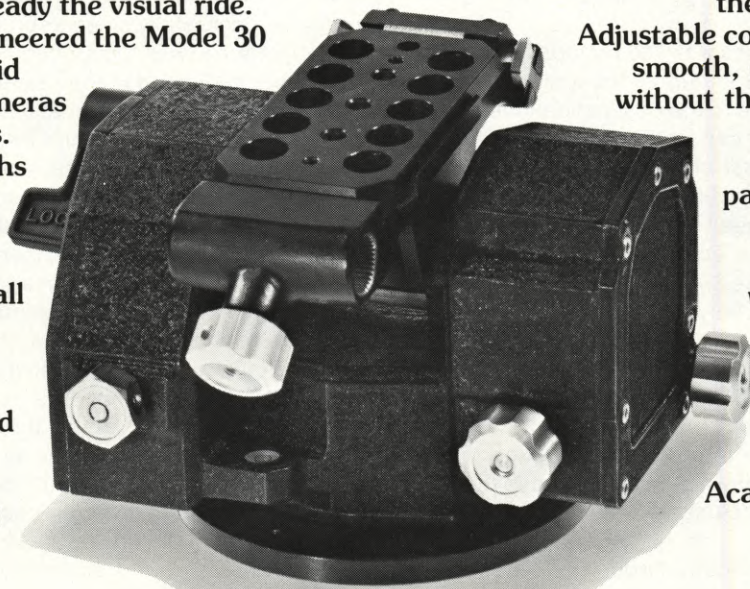
# FLUID FOR THOUGHT.

**Your new portable camera needs a fluid head more than your heavy camera.**

That's right! Just as a light sports car needs good shocks to hold it on the ground and smooth the ride, your light camera needs a good fluid head to steady the visual ride.

O'Connor has engineered the Model 30 to be the ultimate fluid head for portable cameras weighing up to 30 lbs.

It's small and weighs only 5 lbs., yet it has the smooth, steady action and features which are unique to all O'Connor heads. It pans 360° and tilts ±60°. The pan drag, pan lock, tilt drag and tilt lock all operate independently for greater flexibility and control.



The Model 30 has a totally unique counterbalance which is adjustable in the field. One simple tool will adjust the spring to match the weight of the camera.

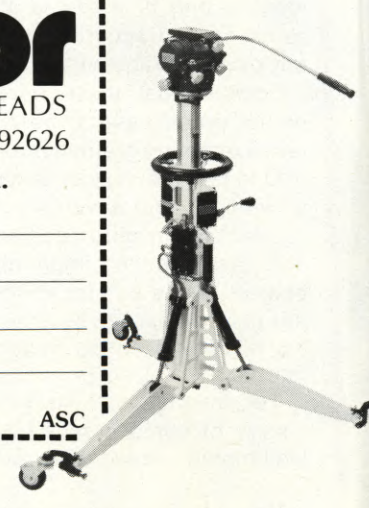
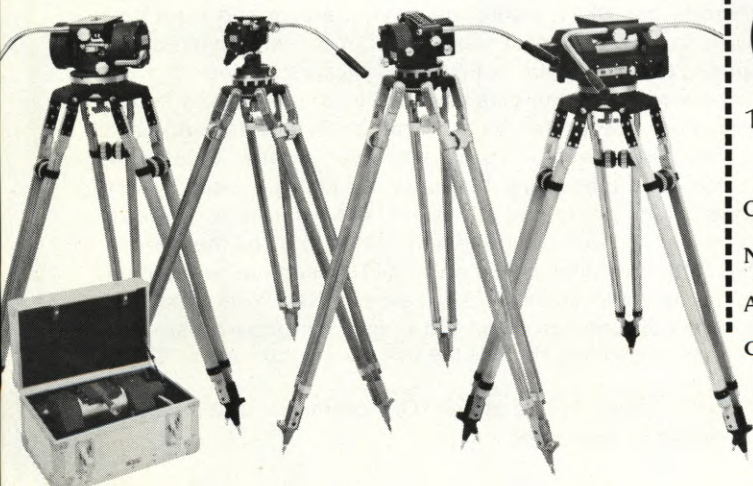
Adjustable counterbalance provides smooth, consistent, fluid action without the distracting influence of camera weight.

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My camera weighs \_\_\_\_\_ lbs. ASC

# FREE SOUND TRANSFER

We're not in business to give things away, but we firmly believe that a film maker should be able to complete much of his film at one facility. DuArt provides these extra services to assure you of better quality, lower costs and faster service. That's why we offer free transfer of your Sound Dailies on 35mm and 16mm when you bring your 1/4" tapes with your undeveloped picture original for processing and work print. Pay only for the low noise 3M mag stock at .029 per foot for 16mm and .038 for 35 mm. For more information, call Paul Jaeger at DuArt.

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DuArt has probably flashed more footage than any other lab. We have equipment specifically built and designed for this process. Call Bob Smith or Bill Lynch at DuArt.

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**Any Problems?** As a leading film processing lab, we recognize our obligation to assist film makers, whether or not you are a regular DuArt customer. Feel free to call Bob Smith or Bill Lynch for technical information, scheduling, costs, film stocks or whatever problem you may be facing.

**DuArt Seminars.** As in the past, we shall continue to conduct a seminar and film demonstration on subjects of interest to our industry. If you would like to receive advance notice of future seminars, call Ann Reilly.

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Our new computerized electronic equipment, designed and engineered to our own specifications, provides the cleanest, quickest, safest methods of making answer prints. Get the facts from Bob Smith or Bill Lynch.



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# AN AMERICAN FILM INSTITUTE SEMINAR WITH WILLIAM CLOTHIER, ASC

A sharing of expertise with a famed cinematographer acknowledged as the world's foremost specialist in the filming of the great outdoors

As perhaps the most important aspect of education for the Fellows in training as film-makers, historians and critics at its Center for Advanced Film Studies, located in Beverly Hills, California, the American Film Institute sponsors conferences and seminars with top technicians and talent of the Hollywood film industry. These men and women, outstanding professionals in their respective arts and crafts of the Cinema, donate generously of their time and expertise in order to pass on to the potential cinema professionals of tomorrow the benefits of their vast and valuable experience.

In keeping with this tradition, Cameraman's Local 659 (IATSE) sponsors a continuing series of seminars with ace cinematographers. These men — both contemporary working Directors of Photography and some of the now-retired "greats" of the past —

meet informally with the Fellows at *Greystone*, the magnificent estate which is the headquarters of the A.F.I. (West), to present valuable information on cinematographic techniques and answer questions posed to them. Very efficiently introducing and moderating each of the individual seminars is "Emmy" Award-winning Director of Photography Howard Schwartz, ASC.

The dialogue which follows has been excerpted from the A.F.I. seminar featuring veteran cinematographer William Clothier, ASC, often honored for his all-around skill, but especially lauded as a specialist in exterior cinematography on a grand scale. The seminar followed a screening of "CHEYENNE AUTUMN", on which he functioned as Director of Photography to the late John Ford:

**HOWARD SCHWARTZ: Allow me to introduce Bill Clothier, the cinema-**

**tographer who photographed "CHEYENNE AUTUMN", the picture you have just seen. One of the things I was most impressed with in this picture was Bill's day-for-night photography. I thought it was just great. Something interesting that you can learn from this picture is that you don't have to flat light exteriors. They were all modeled. Bill took eight arcs with him on this show; he didn't use reflectors. Most production managers want you to take reflectors because they want you to shoot quick and cheap, but reflectors can cause lots of problems outdoors. If you can use lights you're far better off. Anyway, I'll let Bill talk to you now about this picture and some of the others he's done.**

*WILLIAM CLOTHIER: The picture you've just seen is, in my opinion, a very fine film by John Ford, a great director, not only of westerns, but of all kinds of pictures. I made several pictures with Jack Ford and I always enjoyed working with him very much. He was really a cameraman's director. "CHEYENNE AUTUMN", as you know, was photographed in 70mm. It was a bit of a hassle, at times, getting those big cameras around in the sand, but at no time did the Old Man (as everyone called him) say, "Let's hurry up," or "Let's get this over with." He'd sit in his chair and let you do your job and never bother you.*

**QUESTION: Did you use graduated filters on this picture?**

*CLOTHIER: No, I never use graduated filters. There were times when I used a scrim in front of the camera, a very fine scrim, but not graduated filters, because I've found that it's difficult to use them properly — especially with 70mm film. I brought graduated filters and some fog filters, but I stayed away from using them. I used a scrim because it gave me better control, and I could cut it out, too. You can't do that with a graduated filter. A graduated filter is shaded in a straight line, in most cases, and you can see the line.*

**QUESTION: You spoke of Ford not rushing you. Did that appreciably slow things up and, if so, was it worth it?**

*CLOTHIER: If a director will give a cameraman enough leeway, he can get a*

Recently retired, after almost a half-century behind the camera, famed Hollywood Director of Photography William Clothier, ASC, is a cinematographer of great versatility, but his love for the American West led to his immortalizing those overpowering landscapes on film in a long series of classic westerns.



very much better result without having it take much longer. Because of the time element, a director will say, "We're going to shoot this sequence now." It may be morning and the sequence is one that should be shot in the afternoon. Or it may be noon and the sequence should be shot in the late afternoon. But Ford was smart enough to hold off on his interesting long shots until a time when we had a good strong back light, or we perhaps had clouds that could hold the sky down.

**QUESTION: Did you use just one camera on this picture or multiple cameras?**

**CLOTHIER:** We used two or three cameras almost all the time. Actually, we had a second unit working with us and once in a while they'd go out and shoot something, but as a rule, I'd use their cameras. On this kind of picture you almost have to use multiple cameras a lot of the time. For example, when you have treks, when you have a lot of people and a lot of horses and a lot of movement, you never know exactly where they're going to go. They're usually untrained extras (in this case, they were Indians) and they're on horses, but even though they've been told to walk past the camera, some of them will go behind the camera and some will walk right over it. In situations like this we always used more than one camera. When we were shooting dialogue, it was one camera and one camera only, but when you have treks with lots of people and horses and movement, it's always advantageous to set up several cameras. It saves a lot of time.

**QUESTION: Did you shoot a lot of footage that you didn't use?**

As a photographic officer in the Army Air Corps, Clothier lines up a shot behind the camera for a war documentary filmed at an air base in Normandy during World War II (1944). Like other top Hollywood technicians who volunteered their skills (and often risked their lives) to record the war on film, he considered the activity a profound experience.



"Robbie" Robinson and a very young Bill Clothier prepare to take off in a classic biplane, as part of California National Guard training in 1927. Clothier's love for flying is second only to his love for what can be accomplished with a motion picture camera. Both activities have always appealed to his great sense of adventure.

**CLOTHIER:** I'll tell you one thing: when you made a John Ford picture, you cut the slates off and patched it together, because he never shot any superfluous film. On several occasions I said to him, "Jack, don't you want a close-up?" and he said, "If I shoot a close-up, they'll use it, and I don't want it."

**QUESTION: What was the shooting ratio?**

**CLOTHIER:** I don't recall it in actual numbers, but I would say that, in comparison to any other director I've worked with, we'd shoot probably only 60% as much film. The reason was that when the Old Man would shoot a sequence, he would know every cut that

he wanted and would shoot only those cuts. Sometimes he wouldn't even go all the way through a master scene. He'd move right in and get a couple of closeups and that would be the sequence. I remember doing a film with him years ago in which we had John Wayne, MacLaglen, Fonda and George O'Brien. There were four people on the set and we shot the sequence all in one shot, just a long shot. We never did any closeups, no cuts of any kind. We shot the whole thing in one long shot.

**SCHWARTZ:** An interesting thing about "CHEYENNE AUTUMN" is that Edward G. Robinson wasn't even on the location when they did his scenes in the cave. It was shot in process.

**CLOTHIER:** That's right. That whole sequence was process. Actually, I think Robinson refused to do the picture if he had to go on location, and the Old Man said, "Okay."

**QUESTION: I noticed that there were some exceptional compositions in this movie. Were those strictly your idea, or could credit also be shared with John Ford?**

**CLOTHIER:** I couldn't take anything away from John Ford, but I've always prided myself on knowing composition. I don't think that composition is something you can study, and I don't think you can learn it too easily. I think that it either comes naturally to you or

Continued on Page 1160





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Top: CP -16 R  
Bottom: Photosonics IPD with 300mm Canon lens

# THE IMPORTANCE OF 16mm

Samuelson are well known for supplying the production equipment for the biggest films made.

Many recent 'block busters', 'Star Wars', 'A Bridge Too Far', 'The Spy Who Loved Me', 'Orca', 'Killer Whale', 'The Deep', 'The Last Remake of Beau Geste', 'Sorcerer' and 'Julia' were equipped with cameras, and in many cases sound, lighting etc. from London. Other pictures were serviced by our offices in Paris, Sydney, Melbourne and Johannesburg. Currently we are supplying all the cameras etc. for pictures like 'Superman', 'Force 10 From Navarone', 'Shalimar', 'Death on the Nile', 'The Wild Geese' and 'The Big Sleep' on locations all over the world.

The same Samuelson personnel who look after the cameras for the 'big ones' also service, maintain and check out our 16mm gear. Both gauges have equal standing and importance and are equally cared for within the company.

Cameras such as Aaton, Arriflex 16SR's, Beaulieu's R16's, Cinema Products CP16-RA's, Eclair ACL's and NPR's and Photosonics IPD's stand side by side with our 35mm equipment. In an era when television accounts for 70% of filmed screen time, 16mm matters.

EUROPEAN MANAGING ASSOCIATES FOR **PANAVISION**

# Your light-metering system should be as versatile as your camera system.

The light meter in your camera is good, but not as good as you have to be.

So Minolta has created a general-purpose meter that responds to your professional needs for accuracy, handling ease and versatility.

The Minolta Auto Meter II is equipped with a sensitive silicon cell for precise readings in low light, instant response and no memory lag. Its automatic scales give you instant, direct readings of incident light. The meter head rotates 270 degrees for convenience. And it's fast and comfortable to use, with a single over-size button that you press to take the reading, release to hold the numbers.

#### The system.

But the Auto Meter II is more than a meter. It's a complete system that allows you to approach any job with confidence.

#### Spot and incident readings.

You can replace the incident light dome with a 10° spot attachment\*. It comes with an optical finder to insure accuracy.

For wide area reflected light readings, there is an attachment\* that has a 40° angle of acceptance.

#### Close-ups, too.

A miniature incident dome at the end of a flexible cable plugs into a jack on the Auto Meter II. This unique close-up probe\* is useful for readings at small or hard-to-reach subjects.

#### Any kind of light.

Four diffusers let you modify the Auto Meter II for any kind of light. It comes with a deep-dome spherical diffuser that integrates all light illuminating the subject.

A flat disc diffuser\* permits measurement in conjunction with an EV/Lux/Foot-Candle table on the back of the meter. And two neutral density domes\* reduce intensity in varying degree to permit readings from extraordinarily bright and/or close light sources.



#### Enlarger readings.

By bayoneting an attachment\* onto the receptor head in place of the incident dome, you can use the Auto Meter II as a spot-reading, on-easel enlarging meter.

#### The vital statistics.

**Film speed range:**  
ASA 6 to 25,000

**Exposure time range:**  
1/8000th sec. to 2 hrs.

**F/stop range:**  
f/1.0 to f/90

**Cine scale:** 8 to 128 f.p.s.

**Measuring range in incident mode at ASA 100:**  
-4 EV to +17 EV

**Measuring range in spot mode at ASA 100:**  
-1 EV to +20 EV



In addition to the Auto Meter II, Minolta makes a wide range of professional meters. They include 1° spot meters, and meters for flash and color temperature measurement. For information, see your Minolta dealer or write Minolta Corporation, 101 Williams Drive, Ramsey, N.J. 07446. In Canada: Minolta Camera (Canada) Inc., Ontario.

\*Optional at extra cost.

# METAL HALIDE LIGHTING PARAMETERS REASSESSED

In order to use the super-efficient CSI and HMI light sources successfully, free from special ballast, it is necessary to get the arithmetic correct

By D.W. SAMUELSON, FBKS, BSC

It is two years since we last looked seriously at the means of making the most of Metal Halide Lighting; time to see how things are going.

The promise of HMI lighting is well known: 85-102 lumens of daylight coloured light per watt of electricity, compared with 27 lumens of 3200°k light from tungsten light, and only 13 lumens per watt of a colour temperature which is somewhere between daylight and artificial light.

More and more, cameramen are taking advantage of this "something for nothing".

The problems are well-known too. Unless precautions are taken, scenes lit with Metal Halide will appear to scintillate or flicker, especially in the shadow areas. Special flicker-free ballast systems used for filming purposes are not a complete answer to the problem as there will always be occasions when we must film by Metal Halide light which has not been installed solely for our benefit, such as Metal Halide floodlit sports arenas, areas lit using Metal Halide for TV coverage, and so on.

In any case, there are already too many flicker-prone ballast units owned by the lighting service companies, and by studios, which are not likely to be discarded. Furthermore, normal ballast units are smaller, lighter and cheaper than flicker-free types.

A recent series of papers published by the BBC Research Department has precisely defined the theoretical limitations. As will be seen from the diagrams, there are certain windows of safety from flicker. These windows take into consideration the mains frequency, the camera speed, the shutter opening and the number of light pulses during each exposure period. (CHARTS 1 & 2)

The most practical safety periods coincide with 60Hz/144° shutter/24 fps, 48Hz/180°/24 fps and 50Hz/180°/25 fps. 50Hz/172.8°/24 fps is possible, but with a reduced permissible tolerance.

In the United States and other countries with 60Hz mains supplies, a small window at 60Hz/180°/24 fps where 2½ pulses of light are used for each exposure must sometimes, of necessity, be used. However, unless the mains frequency, the camera speed and shutter angle are all precise, this combination is somewhat like walking a tight rope or playing Russian roulette

with the lighting. Minor variations in any parameter will result in a slow variation in image density, equal to approximately 1/3 stop of exposure, varying from one cycle every 100 seconds if the 60Hz frequency varies  $\pm 0.005\text{Hz}$ , every 50 seconds if it varies  $\pm 0.01\text{Hz}$ , 25 seconds if it varies  $\pm 0.02\text{Hz}$  and so on. Any variation of the camera speed from a precise 24 fps will also affect the luminance fluctuation frequency, al-

though, with a crystal controlled motor, this is not likely to be a significant factor (it might be 1/3 stop during the course of 5 minutes).

To be safe, therefore, one must have control of the exposure time and the mains frequency.

It is now a necessity of camera and lighting systems, where Metal Halide lamps with normal ballast units are used, to be able to control one or other

## FLICKER-FREE MH LIGHTING WINDOWS

24 FPS

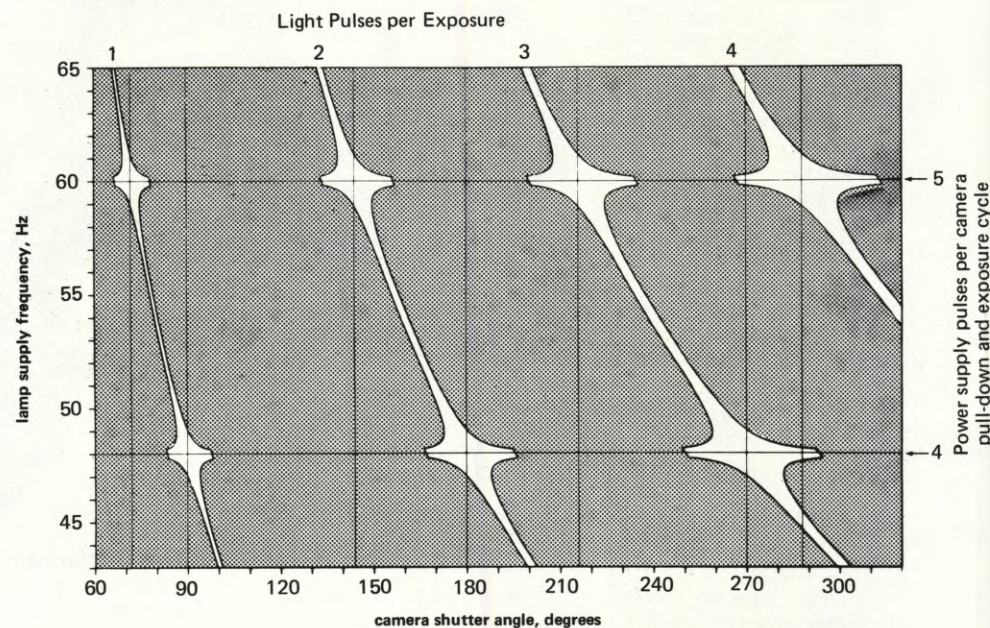


Fig. 1

25 FPS

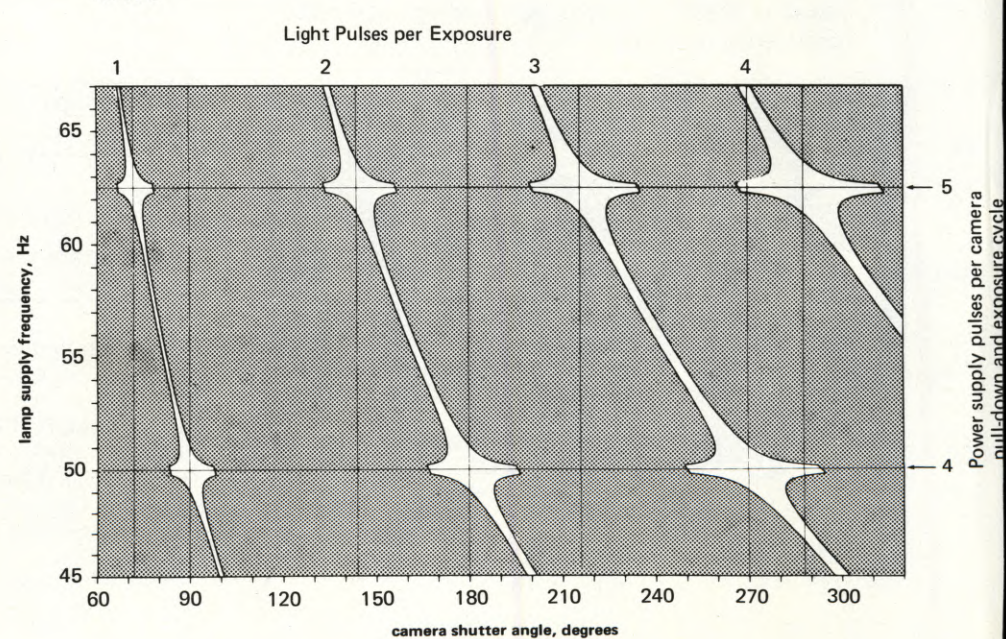


Fig. 2



or both.

Where cameras with adjustable shutters are available, it is becoming a current practice in the 50Hz parts of the world to make a positive 172.8° setting position, and in the 60Hz areas, to make a 144° position.

In Europe we have modified the 170° setting of our Panavision PSR cameras to be 172.8° and put a special 172.8° stop at the edge of the Panaflex shutter adjustment quadrant. In both cases they should be set into position from the 200° opening direction.

With fixed shutter cameras the problem is less easy to solve unless the mains frequency can be controlled. We now fit frequency control governors to our mobile alternators so that they may be operated accurately at 48 or 50Hz or whatever other frequency is desirable.

It is necessary, of course, with fixed opening shutters to know precisely what the shutter opening is and the camera manufacturer's information cannot always be relied upon. As will be seen from the adjoining table, the Arri IIC has a 165° shutter opening which requires a mains frequency of 52.36Hz for 24 fps operation. We are currently modifying many of our Arri IIC cameras to have 172.8° openings to make them usable at 24 fps with 50Hz lighting. The Arri 35BL and other cameras with 180° fixed opening shutters can only be used with 50Hz lighting at 25 fps or at 24 fps with 48Hz lighting.

Different shutter openings, different frequencies, different camera speeds and different numbers of light pulses per exposure present different combinations with different possible answers.

The modern cameraman is well advised to carry a light-frequency meter and a pocket calculator with him to do fast and accurate calculations on the spot to suit the prevailing circumstances. It makes for deeper sleep while waiting for rushes reports.

The formulae (for two light pulses for exposure) are as follows:

What shutter angle to set the camera to?  $360 \div \text{frequency} \times \text{fps}$ .

What frequency to run the alternator at?  $360 \div \text{shutter angle} \times \text{fps}$ .

What camera speed to suit the shutter and frequency?  $\text{Shutter angle} \div 360 \times \text{frequency}$ .

Where other than two pulses of light per exposure are in order the formulae are modified as follows:

50Hz supply:  $\text{Shutter angle} = \text{fps} \times 3.6 \times \text{number of light pulses per exposure}$

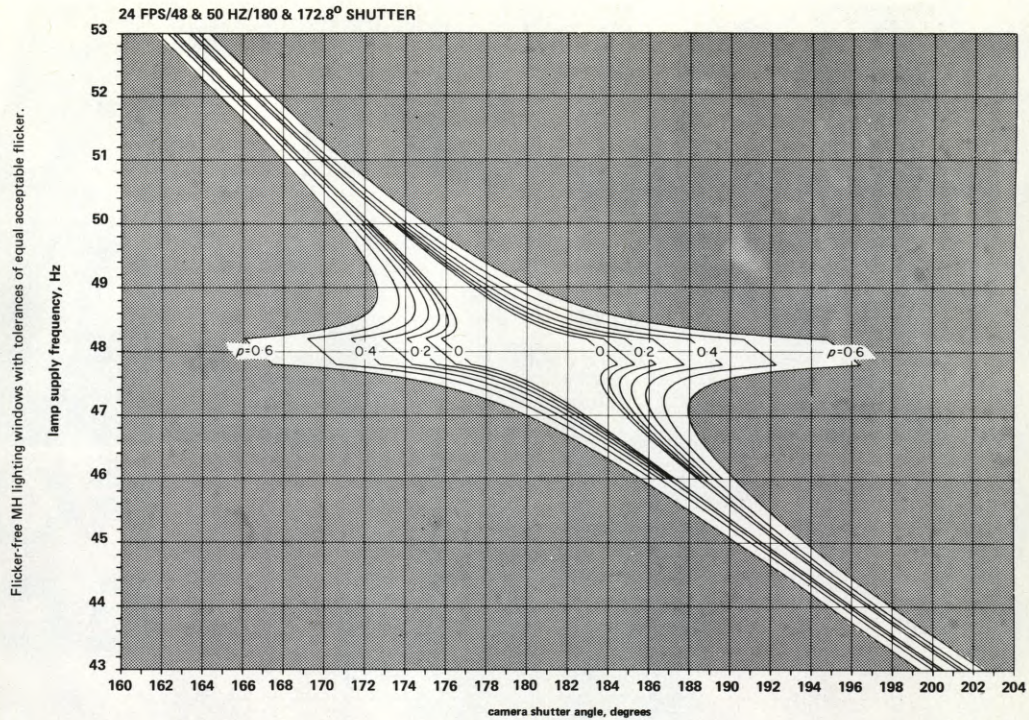


Fig. 3 - Lamp supply frequency limits

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Camera speed = shutter angle  $\div$  3.6  $\div$  number of light pulses per exposure.

60Hz supply: Shutter angle = fps  $\times$  3.0  $\times$  number of light pulses per exposure

Camera speed = shutter angle  $\div$  3.0  $\div$  number of light pulses per exposure.

The amount of flicker and how much may be tolerated will depend upon the type of lamp used, the standards to which the cameraman is working, any daylight illuminated or tungsten lit

areas in the scene against which any flicker may be more noticeable, the latitude of the film stock and how much of the MH lit scene is in the shadow areas where small differences in exposure are more noticeable, and whether a person with a trained eye is looking for flicker, in which case he may see it when others would not. (CHARTS 3, 4, & 5)

Flicker can only be seen on a print. A  
Continued on Page 1170

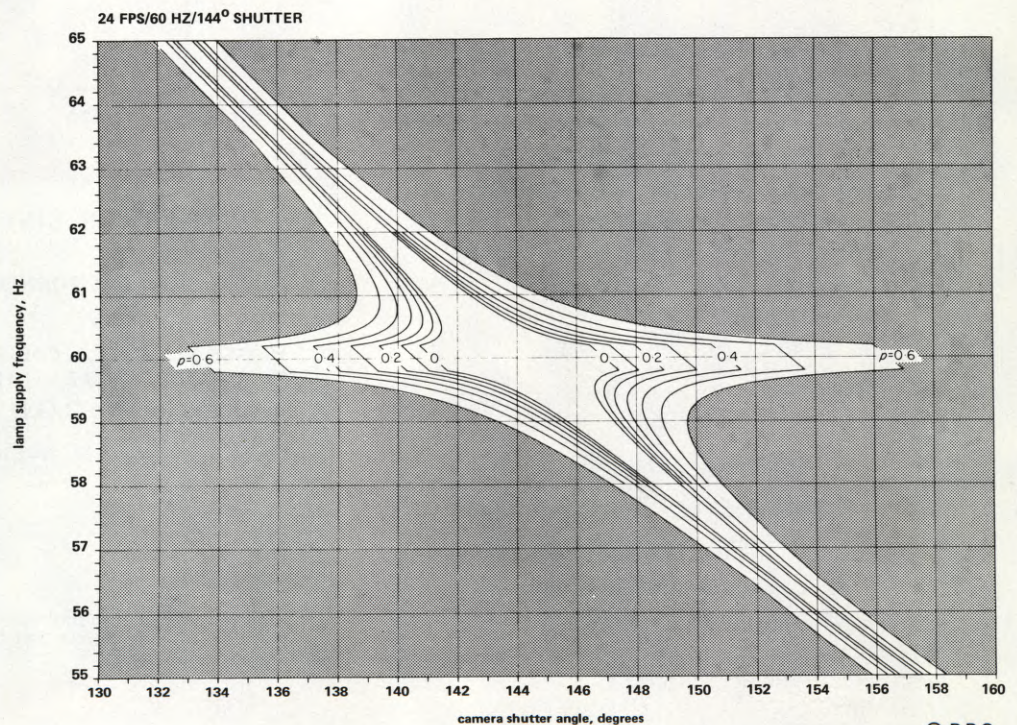
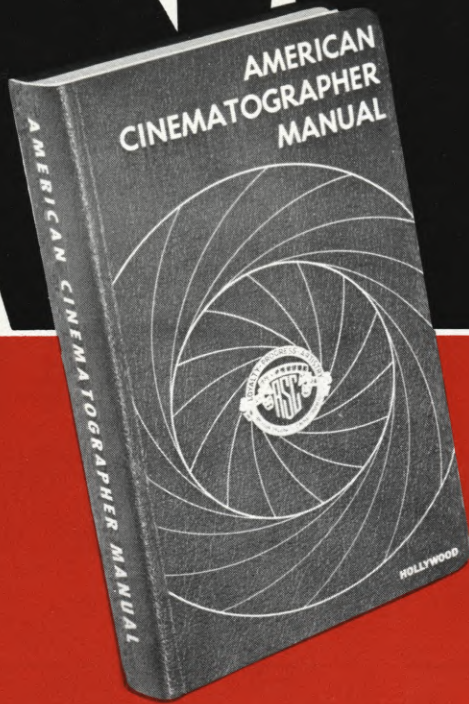


Fig. 4 - Lamp supply frequency limits

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
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**WILLIAM CLOTHIER SEMINAR**  
Continued from Page 1153

you don't have it. I must say that in years past I've had a couple of operators who just didn't understand composition. One fellow said to me, "Where could I get some books on composition?" And I said to him, "Go to the comic pages on Sunday. Those people are some of the greatest artists in the world. You'll see great compositions in the comic strips. Big heads in the foreground, people in the background." When I was an operator on John Ford's pictures, I would occasionally call him over to the camera and say, "Jack, I think this is a better composition." And he'd say, "I think you're right." Or on occasion he'd say, "No. It may be better, but I don't want that." But I've always felt that I know composition. Of course, there are times when, in terms of composition, you've got nothing to photograph. So you roll in a wagon or put a weed in the foreground or a bush or a rock, or frame from a shadow or something of that sort.

**QUESTION: Why did John Ford decide to do "CHEYENNE AUTUMN" in 70mm? Was it because he could get more depth into certain scenes?**

**CLOTHIER:** I think the thing that sold the Old Man on 70mm was the fact that Monument Valley had always been a favorite location of his, but at no time prior to this picture had he had the opportunity to show Monument Valley on a big screen with wide film. But

Clothier (right) looks on, as the late great director John Ford conducts rehearsal of a fight scene. Clothier made several pictures with "the Old Man" (as he was affectionately known to his co-workers), including the classic "CHEYENNE AUTUMN", magnificently photographed in 70mm. The two film artists shared a very deep affection and respect for each other's talents.

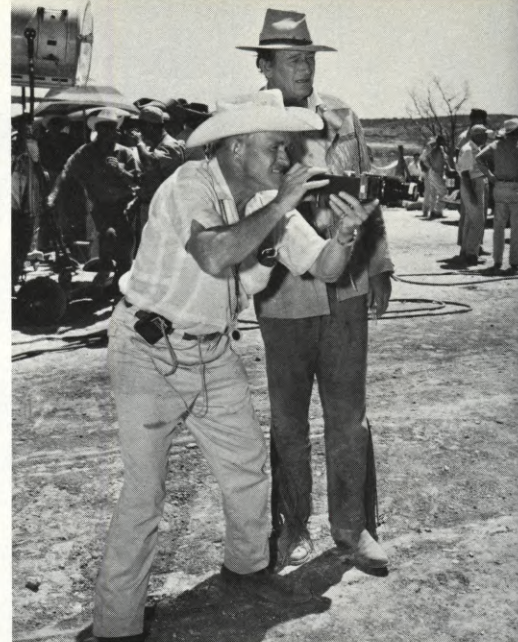
there's no question about it that in 70mm we get things that you can't get in 35mm or 16mm. So 70mm is great for certain subjects.

**QUESTION: The increased depth is especially noticeable in the first scene. You seem to be able to see many miles further.**

**CLOTHIER:** There are several reasons for that. Number one, we were working out on the desert where you have a lot of light. That means that you can stop your lens down to f/11, or even a little deeper than that — and I'll take that stop if I can. By stopping the lens down you get a great deal of depth. And where you have a lot of light you take advantage of that. If you're doing a love scene under a lot of trees, that's a different story. You can open up your lens, cut the shutter and get a nice soft quality, which fits the mood of a love scene. But when you've got a lot of horses and Indians running around and a lot of dust, I like to get that into the picture. And I do think you get greater depth with 70mm than you can with 35mm.

**SCHWARTZ:** Speaking of dust, another interesting thing that Bill told me was that John Ford would not allow the water wagon on the set to wet things down. He had reasons for that.

**CLOTHIER:** Yes, I was telling Howard that the Old Man said, "There's two things that make western pictures. That's horse manure and dust." I can remember one time when I was an



(TOP) Clothier with director/star John Wayne during filming of "THE ALAMO". (BOTTOM) Photographing Wayne on horseback from a high parallel for "McLINTOCK" in Tucson, Arizona.

operator and the cameraman brought a water wagon onto the set. Ford blew his top. The cameraman said, "We'll have dust." Ford said, "Hell, that's why I came out here. I want the dust!" Dust, especially in back light, is terrific. It adds to the drama of the scene. I rarely use a water wagon. I've had actors scream because they get their eyes full of dust, including John Wayne. You just tell them, "Well, the script calls for wind and dust, so we've got wind machines and we've got dust. Close your eyes or get a double."

**QUESTION: Can you tell us something about photographing "THE**



**ALAMO**", especially those scenes that showed the whole Mexican army approaching?

**CLOTHIER:** We pulled a trick there. We had about 1,200 head of horses, I think, and about 3,000 extras. And we had something like 2,000 of them dressed in Mexican uniforms. That picture was also done in 70mm and we split the screen four ways right there, so that what you saw on the screen was about 15,000 people and a hell of a lot of horses.

**QUESTION:** You had it blown up?

**CLOTHIER:** No. We just set the camera up and blocked out a portion of the frame. We then put all those troops into one quarter of the frame. Then we blocked out that quarter of the frame and opened up the second quarter, and so on. It took us all day to make that one shot. Then, in the lab, they put all of this together so that it looked like the biggest army in the world.

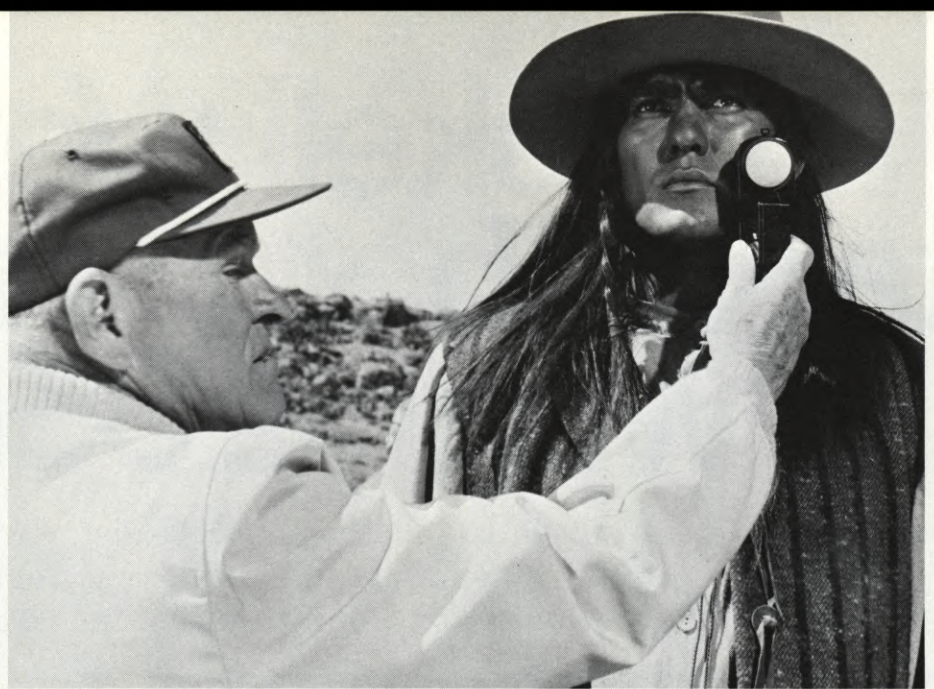
**QUESTION:** What was the reason for doing it that way — just the problem of orchestrating such a big group?

**CLOTHIER:** No, money. That was the main reason, plus the fact that you just couldn't get 10,000 horses together to save your life — or 15,000 people. Also, you wouldn't be able to control that many people, and it would cost a fortune to feed them. The logistics would have been out of the question.

**SCHWARTZ:** Bill, how about telling us a few things about how you shoot day-for-night, because this picture has some of the best day-for-night I've ever seen?

**CLOTHIER:** I was against doing this day-for-night, because in my past experience I've found that, especially in color, it's so difficult to avoid skies and to stay away from blue colors. Blue is blue, and it doesn't make any difference how much you stop the lens down. If someone is wearing a blue shirt, it will look blue on the screen — and it won't look like night. So when we got ready to do this, I said to the Old Man, "Look, we're staying at Goulding's in Monument Valley. We can build this set right outside of our quarters and shoot it at night." He said, "I won't shoot it at night. We're going to do it in the daytime. Why don't you shoot some tests?" So I shot some tests and talked to Giff Chamberlain at Technicolor and Leon Shamroy, who was a great cameraman. Leon had shot some very

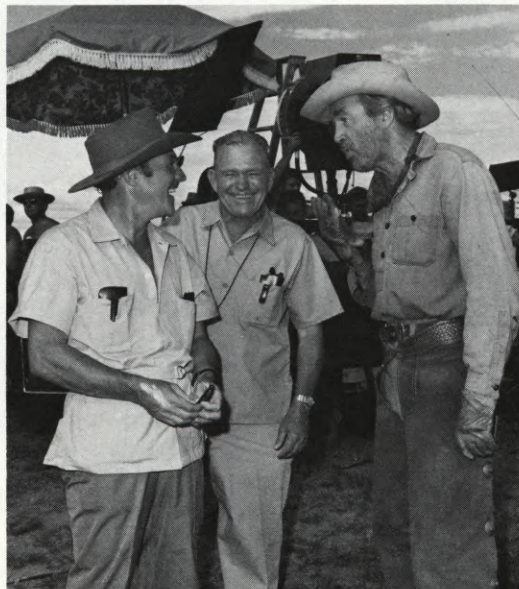
Continued on Page 1199



(ABOVE) Clothier takes a meter reading in preparation for photographing football star Roman Gabriel, toggued out as an Indian for "THE UNDEFEATED". (BELOW) With "Duke" Wayne on location in Hawaii. Up until his retirement, Clothier photographed almost all of the films produced by Wayne's own company, Batjac Productions.



(LEFT) Clothier shares a joke with stars Gene Kelly and James Stewart on location in Santa Fe, New Mexico, for "THE CHEYENNE SOCIAL CLUB". (RIGHT) Studying a strip of film with the late William "Wild Bill" Wellman during filming of "BLOOD ALLEY" in 1953. Of Wellman, Clothier says: "He was a cameraman's director. He liked a guy who was willing to take a chance. He was a great man."

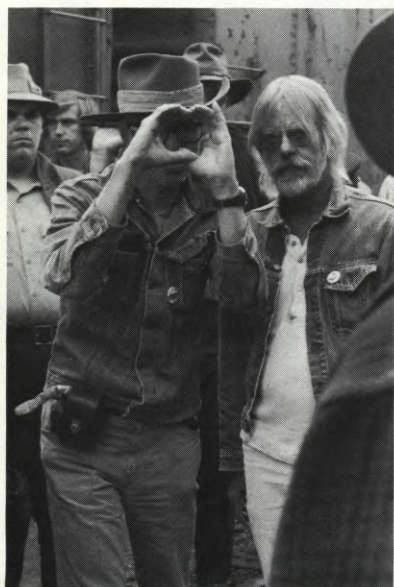


# Haskell Wexler talks about shooting with his 35BL.

Mr. Wexler has won two Academy Awards for his cinematography — this year, for shooting *Bound For Glory*. He owns an Arri 35BL.



Haskell Wexler shooting *Bound For Glory* scene with 35BL. "For hand-holding," says Mr. Wexler, "This is the best balanced silent-running 35mm camera available."



Wexler with *Bound For Glory* director Hal Ashby.

**"T**he extras were waiting around between setups, one day," says Haskell Wexler. "We were at Stockton, shooting *Bound For Glory*. The extras were dressed as migratory workers and their families."

### Natural

"They looked great — kids playing around — behaving naturally, because they weren't being photographed. So we set up secretly inside a tent, and picked things out with the long end of the zoom."

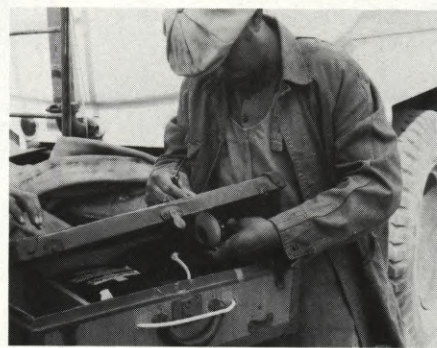
### Suitcase

"Then we hid my 35BL in a cardboard suitcase, with holes

cut for the lens and eyepiece. The second operator dressed up like the extras, and he sat down among them with the case on his lap."

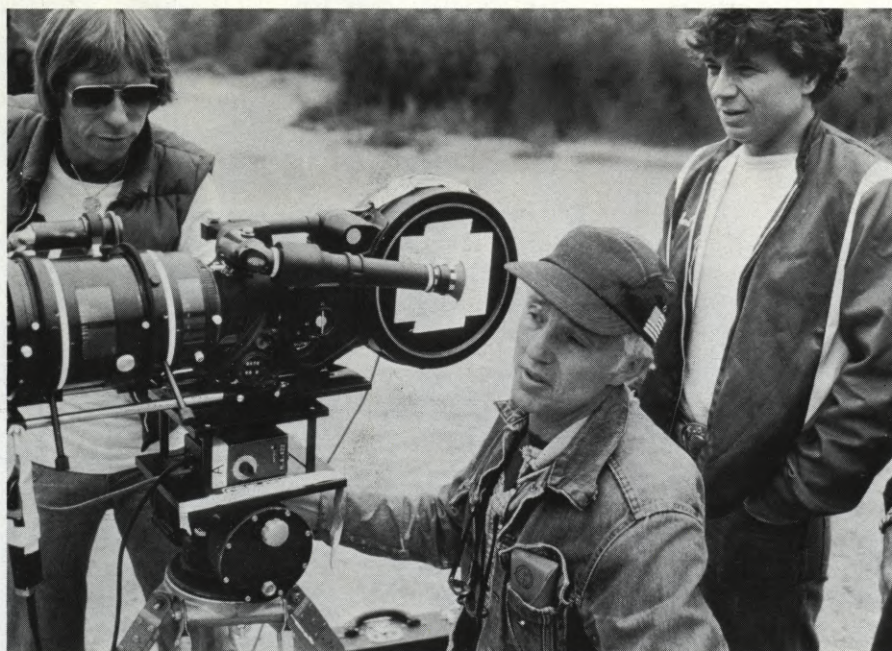
### Sideways

"Even when they realized what was going on, they still acted more naturally, because he was sitting down and facing *this* way, with the suitcase pointing *that* way, off to one side."



Above: Operator, dressed as migrant worker, checks fit of hole cut in suitcase for 35BL viewfinder. Below: The 35BL being positioned inside the suitcase.





Working on STP commercial with actor Robert Blake. "I much prefer to light looking through a 35BL — the image is brighter and clearer," says Mr. Wexler. "Hand-held, with the short eyepiece, the 35BL lets you see the edges of the frame more easily than any other portable 35mm camera."



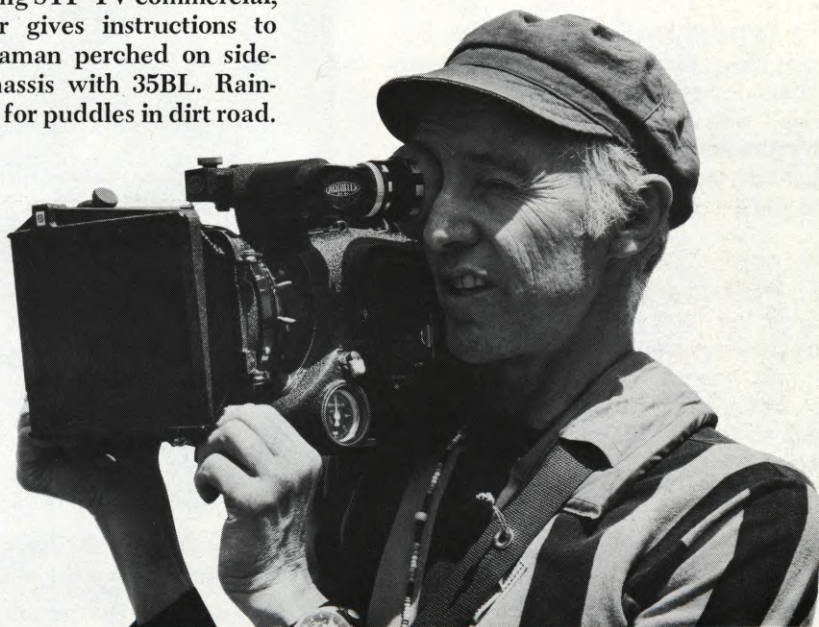
Wexler and 35BL in swimming pool, shooting sync sound scene for *One Flew Over The Cuckoo's Nest*. Note relatively simple plank and stepladder rig supporting small camera.



Shooting STP TV commercial, Wexler gives instructions to cameraman perched on sidecar chassis with 35BL. Raincoat is for puddles in dirt road.

### Unobtrusive

"That's one big advantage of an unobtrusive camera like this. Even with professional actors, there's one less thing to distract them. I can often *ease* quietly into a scene — using the camera's internal slate system and my radio bloop, and waving a finger to indicate *Rolling?*"



### CLIO

Mr. Wexler used a 35BL to shoot Robert Blake in the STP commercial that won a CLIO award this year. For the sync-sound footage, the camera was equipped with a 1,000 foot magazine and a 20-120mm zoom lens.

### Motorcycle

But they also needed some closeup footage of Robert Blake's face as he gunned his motorcycle down a dirt road.

### Unsteadicam

"There was no room for an insert car," says Mr. Wexler, "So we mounted a sidecar chassis on the bike — and the operator rode on that with the 35BL. 400 foot magazine and a 24mm hard lens."

### Lightweight

"In the bad old days, we'd have needed a separate, lightweight wild camera for that shot. But the 35BL took care of it nicely."

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say, it was the 16th Century, but in most period films the buildings look like ruins, even though they are supposed to be contemporary. You see the people wandering around in new "old-fashioned" clothes, but all the buildings are in a state of decay and crumbling. Bits do fall down in towns, but there are parts of towns which always look new to the inhabitants. So in that film we wanted to create a modern feeling in order to make the audience identify with the protagonists of the drama. They were in the Middle Ages, but, at the same time, there was the feeling that it was all happening then and there, not in dim and distant history.

I try to match the style to the subject. For example, in a film I did for television about Rousseau, the primitive painter, I employed a very primitive style — shot everything dead center, with people just walking through the frame, and no camera movement. "THE BOYFRIEND" was a pastiche of 30's films, so it had that sort of style. "TOMMY" had a definite rough style about it that sort of suited the modern idiom. And now, in "VALENTINO", the thing about it is that each sequence has its own style. I have never done a film with so many different stylistic sequences. We go from the black-and-white style of silent films to a sort of sophisticated Russian ballet style, to art deco, mixed up with Edwardian, Hollywood bad taste, Hollywood good taste, and so forth. Really, it's almost too much. It's a very, very rich canvas I'm painting, but the main thing about the film is that every sequence is totally different to any other in the film.

**QUESTION: You've made several biographical films in the past, mostly about composers, but while those films dealt with real people, the cinematic treatments were often wildly unrealistic. Just how important is authenticity to you?**

RUSSELL: I try to get authenticity into my films. I can't say that I always succeed, but that's what I always try to do. I do it through the use of colors and costumes mainly. Most of the clothes in this film are original and my wife designed some sort of stunning period costumes for it. We have some very snazzy dresses in our films, and that's true of the clothes worn by Nazimova, the MGM star of the 20's, and Natasha Rambova, who was Valentino's second wife. She was a costume designer, but she didn't design her own clothes.



She was dressed by famous French designers. This is a very stylish sort of film, mixed up with the rough hurly-burly of Hollywood. It's a bit of a kaleidoscope. There is a variety of styles and techniques.

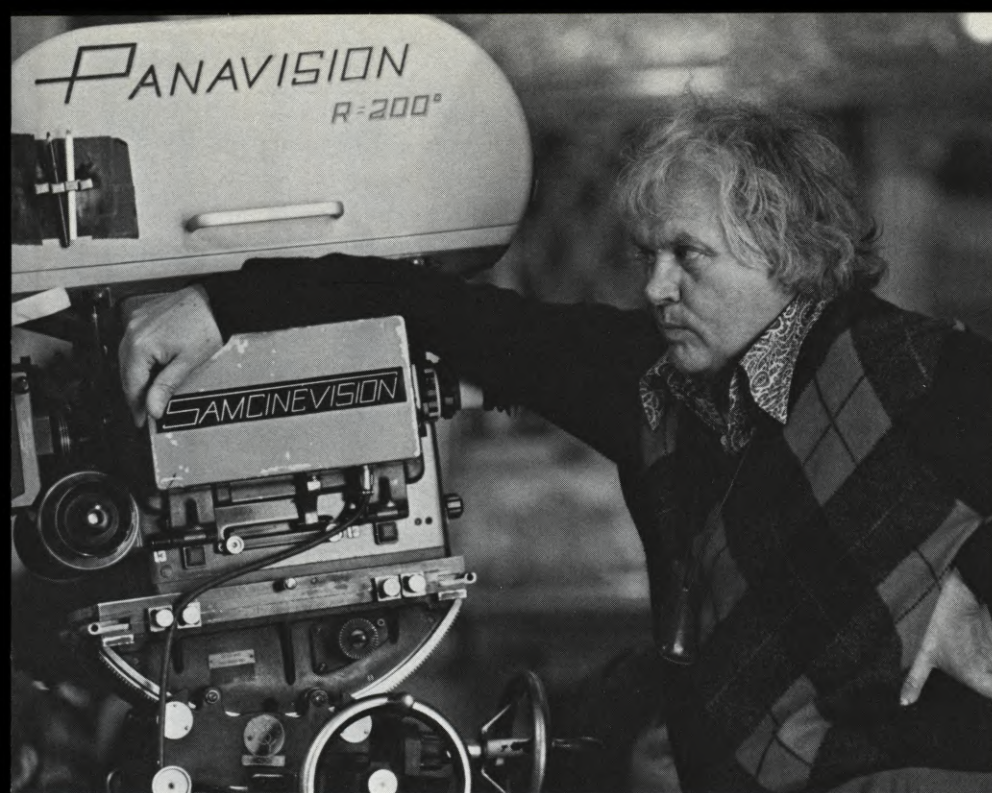
**QUESTION: Can you give me some specific examples of that variety?**

RUSSELL: Well, as Valentino's story unfolds, we show four of his films being made — and that could become boring, if they were all treated in the same way. Yet, they are important, because they are backgrounds that lead to the dialogue, to the action, to the drama

between the protagonists. Each time I felt that I wanted a slightly different look at the film unit, so on one of his film projects the camera goes whizzing by and you get just an impression of it. On another one, the action is very laid out, almost like a battlefield, with strategic positions for cameras and so forth. Another one is being done by a very arty group and it's all in the pinewood, with violins playing to give it mood, and everyone dressed in pastels. The one which you've just seen being filmed in the studio has a much more cosmopolitan, sort of "metropolitan" feel to it — and much more hustle and bustle and hurly-burly than the other se-







quences. It's been interesting devising these different ways of making a film, although they all serve as background to the main film itself. They do not dominate it, but almost sort of make a comment on it. All of the films which we show within the main film are staged to make a comment on the action. "VALENTINO" is about the divergence of the real man from his image. The primary action takes place after he is dead. The film is about flickering shadows. The "real" man is never seen and nothing is known about him.

**QUESTION:** You say that the primary action takes place after he is dead.

**Does that mean that the majority of the film is done in flashback?**

**RUSSELL:** It starts off in a funeral parlor, with the heads of the studio carving up the body, as it were — carving up what's left of him. It then becomes a series of flashbacks throughout his life. The difficulty with this film, as with all biographies, is that there is too much material, really. It's very hard to cut it down and still have a coherent story. Valentino did have an action-packed life, and one always has a problem of condensing such a man's life into two-and-a-quarter hours. You find that you always end up — as I have

in this one — with a sort of succession of highlights. We did have a lot of quieter moments of him cooking spaghetti five feet long (which he actually did) and things like that, but if you showed everything of that sort the film would last six hours. So you say to yourself, "What can I lose and still keep the dramatic thread of the story?" That's what it always comes down to. You find at the end that you have a series of very dramatic moments, but a lot of the warmth and humanity and the simplicity has had to go by the boards, because, although it's important, it's not dramatic and in order to include it you would have to sacrifice something that is dramatic and was a turning point in his life. This man had lots of turning points in his life — at least half-a-dozen



key changes over a period of 10 years — and one has to decide either to sacrifice a bit of warmth and domesticity, as it were, which shows his background, or to sacrifice one of the key changes in his life. We've ended up with a very dramatic film, but one which is not quite as relaxed as I would have liked it to be. This is all talking in theory, of course, since we are only a third of the way through the filming. I'm trying to slide little bits of softness into it, but it's difficult.

**QUESTION:** I understand that you were in Hollywood previously researching this film. Did you originally plan to shoot it there, or were you  
Continued on Page 1206



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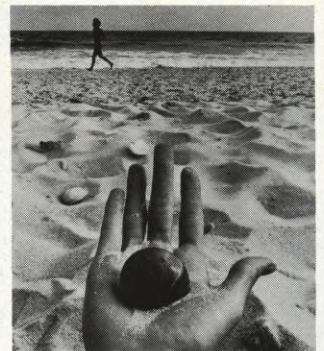
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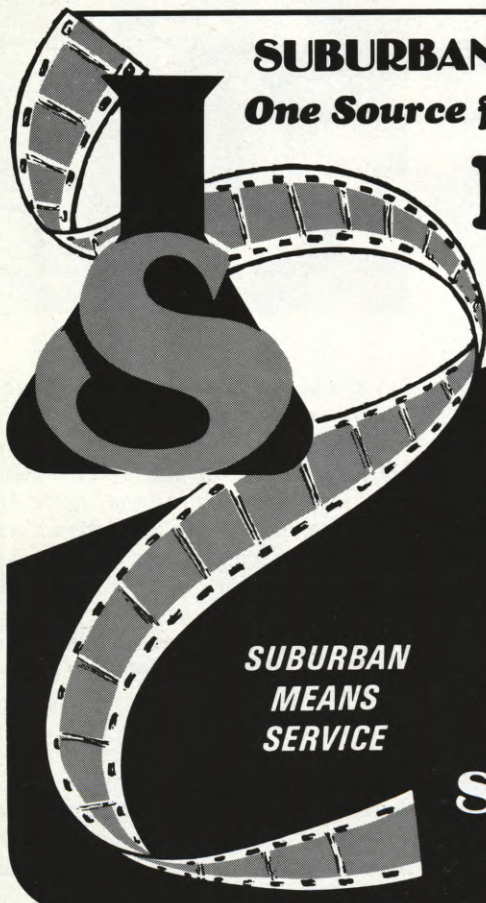
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**TRAVELING LIGHT ON LOCATION**  
Continued from Page 1149

background sound and presence as possible to enhance the visual with the naturalness of sync sound. They wanted music and wild sound. But, budget and logistics prohibited a crew larger than two, even though local assistants would be provided. Above all, we had to be as unobtrusive and mobile as possible.

We ruled out single-system because of the need for wild sound and because we would be shooting ECN 7247. Even if magnetic stripe could be arranged, which was not possible, the extra handling in post-production would be too risky for 16mm negative. The search for a miniature sync recorder began.

It ended at the apartment of John Messenger, who had just arrived from London with numerous cats crawling everywhere, tea crates, and a handy device, created by his associates at Documentary Film Group, called an SQN. One end plugs onto the Nagra SNN. A short cable runs to the unit itself, which is the size of a cigarette pack, and enables the Nagra SNN to do everything it should have done in the first place — with manual level control, VU meter, switchable microphone powering, crystal, bass cut-off and remote start. Among the cats and the SQN's were Ed and Phil Gleason, whose idiosyncratic passion for thinking of ways to redesign any piece of equipment they see made them candidates for the job we had in mind.

We needed an SNN which the cameraman could easily operate while shooting. A Sennheiser 415 with shock mount would attach to the handle above the Arri SR. The tape recorder would start and stop with the camera. Film fogging with corresponding sound blooming was essential to establish start of sync. Manual level control by the cameraman was also essential, to maintain level and sound perspective while shooting. We did not like the results of the SNN when run on automatic — it was the audio equivalent of servo-controlled exposure.

Other requirements were: switchable playback or direct listening modes, flexibility to run wild or MOS, crystal control, volume control for headphones and, above all, small size and weight. We did not want wireless start and blooming, since wireless devices can be confiscated by South American customs. And most important, the cost had to be very reasonable.

Phil and Ed worked around the clock for two weeks, designing and refining, inventing and testing.

Their result is a highly sophisticated, super small synchronous tape recorder that should gain great popularity among filmmakers.

A standard Arri umbilical cord is used to start and bloop the recorder. For our purposes, it is only 4 feet long. Both camera and recorder maintain individual crystal control. But, when the camera starts, the 12-volt bloop signal triggers a circuit which starts the SNN. Simultaneously, an audible bloop is recorded on the tape which corresponds to the light that fogs frames in the camera. Syncing is established where fogging ends and where the bloop stops. The recorder will continue to run five seconds after the camera stops. The SNN, SQN and newly designed electronics package fit neatly into a small leather pouch about the size of a paperback book and little heavier. It fits onto the belt or straps over the shoulder.

Three hours before departure time, Ed appeared in my workshop to make some final adjustments, borrowing an old radio for spare parts. He was just closing up the case as Mel picked me up in a Checker Cab to go to the airport.

With the SR and SNN as hand carry items, only five cases



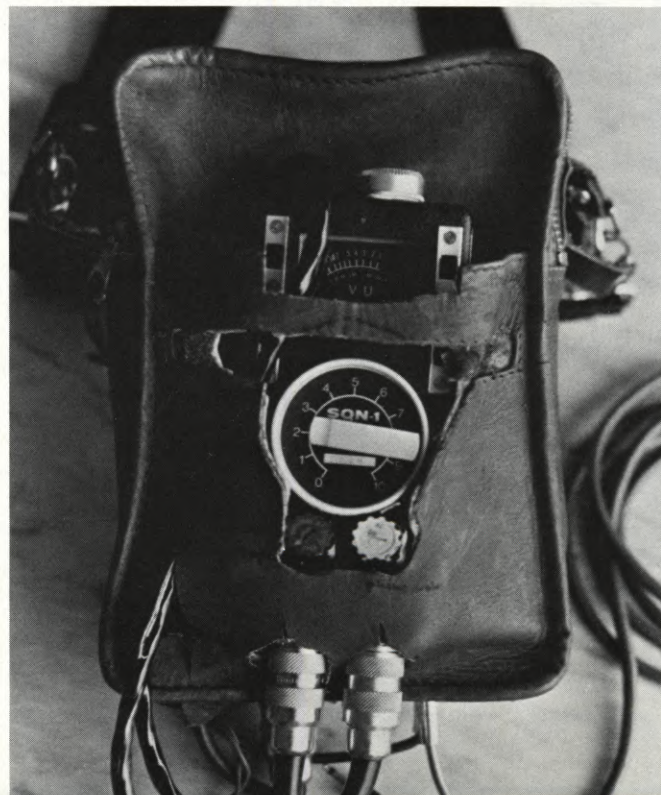
**Components of the sound system (left to right): Sennheiser 415 microphone, microphone cable with plastic connectors for light weight, SON manual control unit, Nagra SNN with crystal, leather covered tube containing Gleason's electronic wizardry to start, stop and bloop recorder as the 16SR turns on and off, molded earplug to fit in cameraman's right ear.**

travel in the cargo hold beneath us. Our equipment list reads as follows:

|   | weight in pounds |
|---|------------------|
| 1 Arriflex 16 SR with 10-150mm lens, 400' magazine, on board battery, variable speed control. Hand Carry.   | 25               |
| 1 Nagra SNN with control units, Sennheiser 415, ECM 50, AKG D-24 microphones, cables, 10 rolls tape. Hand Carry.  | 12               |
| 1 Halliburton #105 Case with 2 SR magazines, spare on-board battery, charger, accessories   | 15               |
| 1 Halliburton #105 Case with Minolta XE-7 still camera and lenses, 280mm lens, SR adaptor, filters, tool kit, accessories                               | 15               |
| 1 Case of Tota Lights — 4 heads, 4 stands, cables, diffusion, gels, 1000 and 500 watt bulbs, reflectors, umbrella, clamps, hangers, electrical supplies | 35               |
| 1 Case of film stock. 25 rolls ECN 7247, changing bag, gaffer tape and camera tape, Dust-Off (4 cans)   | 40               |
| 1 O'Connor 50 Fluid Head with Arri 35 legs and ball   | 20               |

As with any system, this one is inter-dependent. The SR and SNN permit hand-carrying self-sufficiency, even if every other case is lost. Because we are using Eastman Color Negative, rated at ASA 100, we can use the Lowel Tota-Light  
**Continued on Page 1180**

**Recorder and all accessories in leather pouch. Entire unit measures 5"x7" and will snap onto cameraman's belt or fit over the shoulder with an adjustable nylon strap.**



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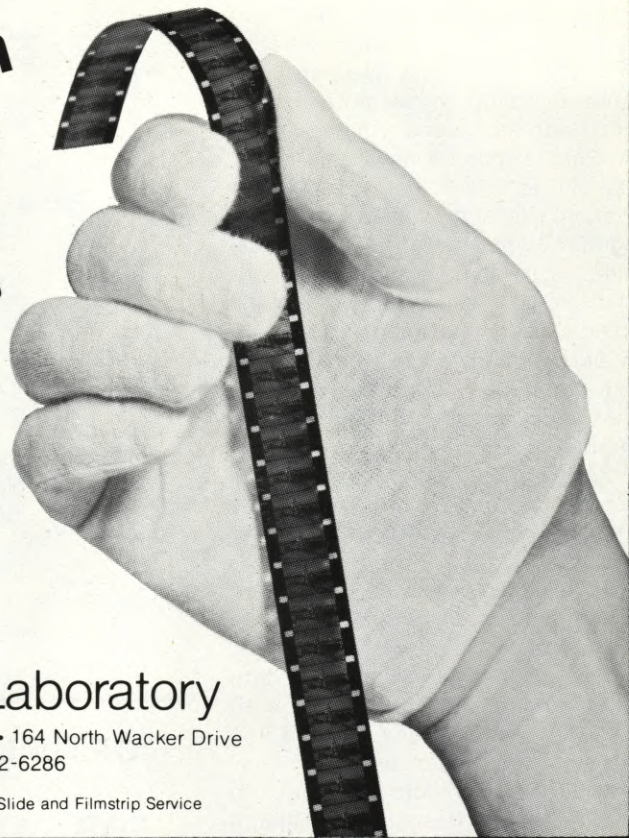
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## METAL HALIDE LIGHTING PARAMETERS REASSESSED

Continued from Page 1157

negative of a scene which may have very bad flicker will show little variation if screened directly. Neither can it be measured on the negative with a normal laboratory densitometer.

At Samuelsons we have built a new Metal Halide flicker test rig where we can shoot similar grey scales, one lit by tungsten light, the other by Metal Halide. At the same time we measure and display the actual ripple rate of the lighting at the time of exposure so there can be no doubt as to what the frequency is or was. To do this we use a photo electric cell connected to a computer which counts the ripples of light over a precise period and displays them on a readout which may be photographed simultaneously with the test chart.

Film tests have proved that where the arithmetic is correct, Metal Halide lighting can be used with confidence, but that cameramen who shoot with flicker-prone ballasts units with fps/Hz/S° combinations beyond the limits are taking a chance.

I would like to record my thanks to the Director of Research, Research Department, Engineering Division, British Broadcasting Corporation for permission to publish FIGURES 1-5, based upon their figures and charts, and to E.W. Taylor of the B.B.C. for all the research work he has done on the subject. ■

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Arrangements as to availability and other details are to be made directly with the individual A.S.C. member. For further information, contact: American Society of Cinematographers, P.O. Box 2230, Hollywood, California 90028. Telephone: (213) 876-5080.

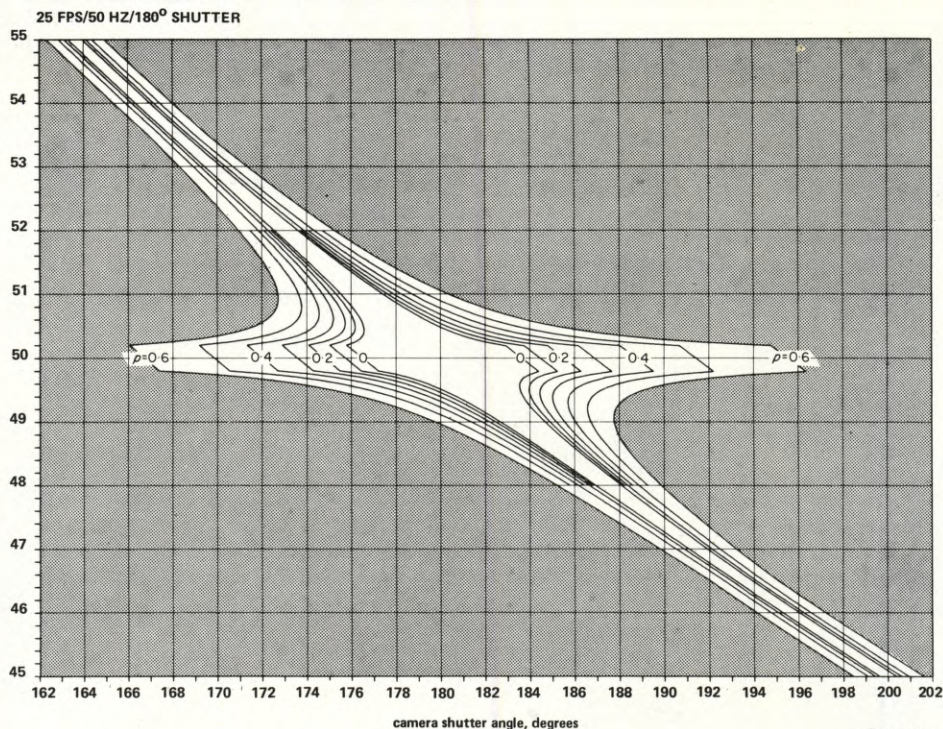


Fig. 5 - Lamp supply frequency limits

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## OPTIMUM LIGHTING SUPPLY FREQUENCIES AT 24 FPS FOR VARIOUS CAMERA SHUTTER OPENINGS

© D.W. SAMUELSON, FBKS, BSC

| Shutter angle | Camera make & model   | Optimum Supply Hz |
|---------------|---|-------------------|
| 103°          | Beaulieu 4008   | 84                |
| 130°          | Bell & Howell Auto-load, GSAP   | 66                |
| 133°          | Bolex H16 M-5, RX-5, SB & SBM & 16-Pro  | 65                |
| 135°          | Beaulieu R16 & News<br>Canon Scoopic 16   | 64                |
| 140°          | Mitchell Sportster 164  | 61.7              |
| 144°          | Optimum setting for 24fps/60Hz operation<br>Auricon 60Hz TVT<br>Beaulieu 5008   | 60                |
| 150°          |   | 57.6              |
| 156°          | Cinema Products CP16R   | 55.4              |
| 160°          | Eclair Camematic (max)<br>Millicam DBM (max)<br>Photosonics 1P & 1PD (max)  | 54                |
| 165°          | Arriflex IIC  | 52.4              |
| 170°          | Bolex EBM & EL<br>Mitchell S35 (max),<br>Canon Scoopic 16M<br>Cinema Products CP16R (BBC model)   | 50.8              |
| 172.8°        | Optimum setting for 24fps/50Hz operation<br>Auricon 50Hz TVT,<br>Cinema Products CP16 non-reflex  | 50                |
| 175°          | Aaton 7,<br>Cinema Products XR35 (max)<br>Eclair ACL,<br>Mitchell NC, BNC & BNCR (max)  | 49.4              |
| 180°          | Optimum setting for 25fps/50Hz operation<br>Arriflex 35BL, 16SR, BL & St,<br>Cinema Products GSMO<br>Eclair CM3 (max), GV16 (max) & NPR (max) | 48                |
| 190°          |   | 45                |
| 200°          | Panavision Panaflex & PSR (max)   | 43.2              |
| 200°          |   | 64.8*             |
| 210°          |   | 61.7*             |
| 216°          |   | 60*               |
| 220°          |   | 58.9*             |
| 235°          | Mitchell 16, after No. 227 (max)  | 55.1*             |

\* — 3 pulses per exposure

At 24 fps/48Hz or 25 fps/50Hz EXACTLY, any shutter angle is possible.

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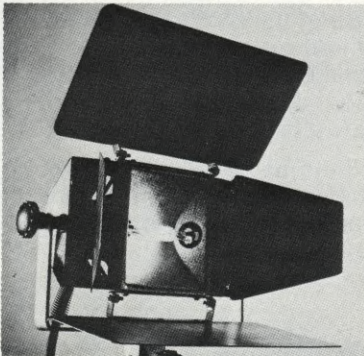
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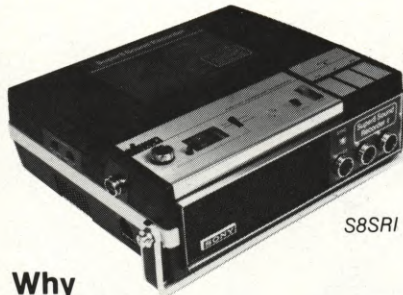
# Re-Introducing the Super8 Sound Recorder

In 1973, just six months before Eastman Kodak introduced single-system sound to Super 8, a group of filmmakers, scientists, and engineers in Cambridge, Mass. formed Super8 Sound, Inc. and introduced the Super8 Sound Recorder, the first fullcoat magnetic film recorder for Super 8.

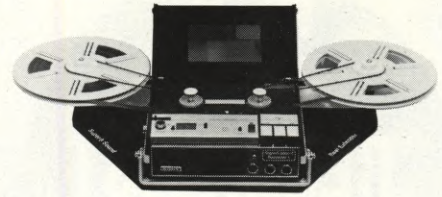
Today Super8 Sound, Inc. is pleased to offer **two** Super8 Sound Recorders.

Super8 Sound Recorder I is an improved version of the world's most widely used Super 8 full-coat magnetic film recorder. It now includes a built-in sync meter and reel extenders are optionally available to provide one hour of running time.

Super8 Sound Recorder II is smaller and lighter than Super8 Sound Recorder I, yet with a metal case, instant start/stop/pause control, and higher fidelity: better signal/noise ratio and frequency response.



S8SRI



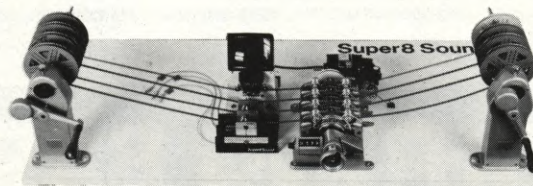
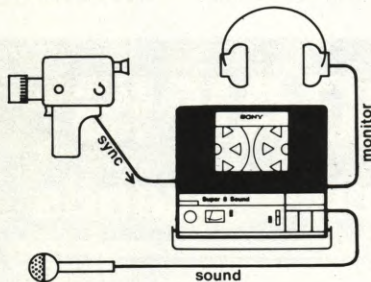
Optional Reel Extenders increase the 19-minute running time of Super8 Sound Recorder I to one hour.

## Why You Need a Super8 Sound Recorder

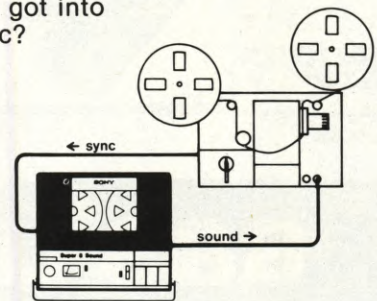
The Super8 Sound Recorder puts into your hands all the capabilities of a 16mm or 35mm film sound studio. You can transfer your own location sound to magnetic film, you can dub your own music and narration tracks, you can cut separate tracks and mix them without the high labor charges of the sound studio engineer, and because you do it yourself you keep direct creative control of your own sound track.

that of comparable 16mm equipment, isn't it time you got into Super 8?

Whether you're just entering filmmaking, or a veteran 16mm filmmaker trying to lower your film stock and equipment costs, you should be working in Super 8. And if you're already using Super 8 as a silent film — isn't it time you got into sync?

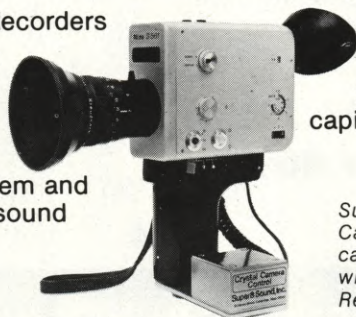


Super8 Sound multiple-gang motorized editing benches allow frame-for-frame editing of sound and picture.



Both Super8 Sound Recorders combine all the functions of location recorder, laboratory resolver, sound studio dubber, and transfer recorder for stripe-to-fullcoat, fullcoat-to-stripe, and fullcoat-to-video sync transfers.

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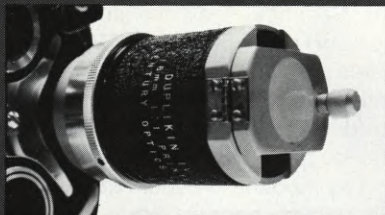
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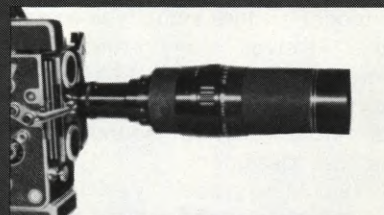
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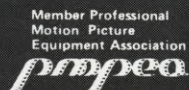
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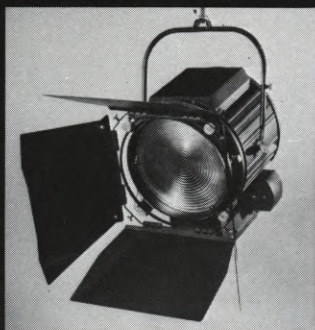
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# ALL ABOUT THE PMPEA

By ANTON WILSON

The motion picture industry is a vast one that involves many artists and craftsmen of diversified talents — directors, cinematographers, producers, writers, actors, sound technicians, set designers . . . the complete list would be practically endless.

There is one group, however, that is the very foundation of the motion picture industry, and, like a foundation, remains mostly out of sight to the general public. Where would the industry be without cameras, lenses, film and the myriad other technical devices necessary for production? This group is comprised not only of the people who design and manufacture the equipment, but also of the many professional dealers across the country who sell and service the equipment. Since the infancy of motion pictures, this group has worked hand-in-hand with the rest of the industry, developing the endless technical breakthroughs that have elevated the art to the state it is today.

It is interesting to note, however, that this area of the industry had essentially remained as autonomous individuals. Almost all of the other groups within the industry had realized the necessity of forming a guild or organization to help raise the professionalism of their members. These organizations provide the opportunity for members to exchange ideas, discuss problems and unify for common causes.

Many people within the motion picture equipment community felt that they, too, needed a professional organization to bring their group closer together. The first seeds to this end were sewn back in 1972 at the *Photokina* in Germany where Bern Levy of Angenieux Corporation and Victor and

Lee Duncan of Victor Duncan, Inc. met to discuss concrete plans for forming such an organization. As a result of their efforts, a representative group of 18 dealers and manufacturers was invited to discuss the formation of a professional association. This meeting took place at the Century Plaza Hotel in Los Angeles during the October, 1972, SMPTE conference. This conceptual meeting proved very fruitful and a steering committee was appointed. Many proposals were acted upon including a name for the group, dedication and purposes, members' qualifications, dues, etc.

Between this conceptual meeting in October, 1972, and the next SMPTE conference in April, 1973, Victor and Lee Duncan were kept busy drafting a constitution and by-laws and conferring with several legal counsels. These efforts culminated in an organizational meeting held April 8, 1973, at

the Regency Hyatt House in Chicago concurrent with the SMPTE conference. One hundred twenty invitations to attend this meeting were sent to distinguished professionals in the motion picture equipment community.

The meeting proved a great success. Forty-five people attended, representing thirty-four companies. By a vote, the Professional Motion Picture Equipment Association (PMPEA) was born and Joseph Tawil of Berkey Colortran was elected first president. Other officers were also elected, as well as a group of six trustees equally divided among dealers and manufacturers. Almost immediately the PMPEA commenced activities. Committees were set up to explore common problems and to decide how the new organization could best improve the quality of goods and services offered to filmmakers.

Continued on Page 1176



(ABOVE RIGHT) A PMPEA symposium held at last year's SMPTE Conference in New York included (left to right) Barney Malsky, Phil D'Antoni, Walter J. Wood, Jack Priestley, ASC, Morton Dubin and Volker Bahnmann. (BELOW) A capacity crowd fills bleachers on 20th Century-Fox Studios sound stage 21 to attend "hands-on" symposium during the 1975 SMPTE Conference in Los Angeles. (RIGHT) Director of Photography Ralph Woolsey, ASC, gives a demonstration of the moving camera at the Los Angeles seminar.



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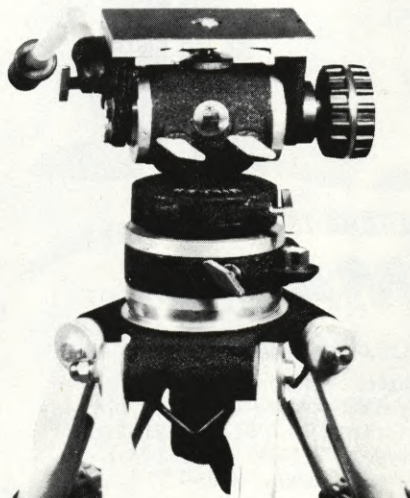
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## ALL ABOUT THE PMPEA Continued from Page 1174

Several activities of the PMPEA relate to the filmmaker directly. Among these is the PMPEA guest speaker program. Many members of the PMPEA are world recognized authorities in their field and have made themselves available as speakers for seminars, lectures or informal discussions on various filmmaking subjects. Usually there is no fee involved except for reimbursement for travel expenses in some instances.

The PMPEA is also actively involved in a program to retrieve lost or stolen equipment. A filmmaker is invited to send a list of stolen equipment with serial numbers to PMPEA. The list will be duplicated and sent to all PMPEA members. Since almost all major dealers and service centers are members of PMPEA, there is a good chance that misappropriated equipment may be retrieved.

Probably one of its most popular activities is the annual PMPEA Seminar held in conjunction with the SMPTE conference. The first seminar was held in 1975 at the Twentieth Century-Fox Sound Stage #21 in Los Angeles. More than 500 people attended, with another several hundred having to be turned away due to the unexpected turnout. The seminar was designed to present distinguished cinematographers and technicians to the filmmaking community. The informal seminar afforded the guests the opportunity to present practical demonstrations of their craft. The audience was encouraged to ask questions and handle some of the equipment. The participants at this first seminar read like a Who's Who of the motion picture industry.

Ralph Woolsey, ASC, gave a demonstration of the moving camera: John Alonzo, ASC, with the help of gaffer Earl Gilbert and grip Gary Dodd, demonstrated some of the techniques they used for "CHINATOWN", "THE FORTUNE", and "FAREWELL MY LOVELY". Jerry Hirschfeld, ASC, gave a practical demonstration of special effects, including some he used for "YOUNG FRANKENSTEIN". The program was rounded out with Brianne Murphy demonstrating "on location" techniques and Richard Sassone's demonstration of HMI lighting.

The seminar was a huge success and it was agreed to make it an annual event. The following year at the SMPTE conference in New York, the PMPEA, under the guidance of President Volker Bahnmann of Arriflex, once again held a symposium, this time in the form of a

panel discussion.

Walter J. Wood, director of the New York City office for motion pictures and television, moderated a distinguished panel, which included Phil D'Antoni (producer/director — "BULLITT", "THE FRENCH CONNECTION", etc.), Jack Priestley, ASC (Director of Photography — "NAKED CITY", etc.), Bernard Melsky (producer) and Mortin Dubin (producer/director). A myriad of topics were discussed including problems of filming in a big city, financial trends in the industry and the impact of the changing tax shelter situation.

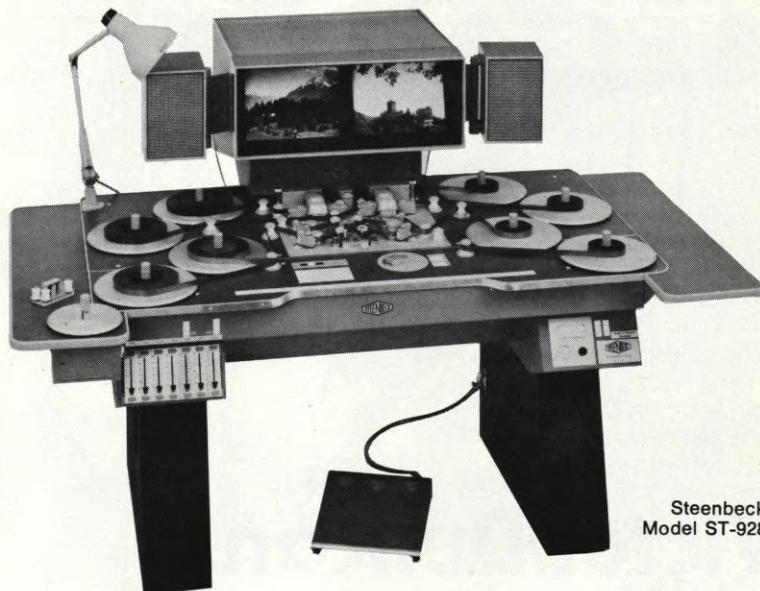
The activities of the PMPEA have been expanded this year under the direction of current President Chad O'Connor of O'Connor Engineering. This year's seminar, scheduled for Sunday, October 16, will once again be held on the Twentieth Century-Fox lot. Roy Isaia, V.P. of the PMPEA and seminar chairman, predicts this year's seminar to be the best yet. Haskell Wexler, ASC ("BOUND FOR GLORY"), and John Alonzo, ASC ("BLACK SUNDAY"), will each demonstrate studio techniques. Verna Fields, winner of the Academy Award for best editing ("JAWS") is scheduled to lead a discussion of post-production techniques. Jim Webb, co-winner of the 1977 Academy Award for sound ("ALL THE PRESIDENT'S MEN") will demonstrate production recording.

In addition to these programs that directly benefit the filmmaker, the PMPEA is constantly working at other activities that indirectly help the industry. A warranty committee was organized to help clarify warranty policies and provide the filmmaker with the best possible protection. A trade show committee analyzes exhibit techniques to best serve the community. Other committees are developed as a need arises.

Currently there are two major categories for membership. Those eligible for Active membership include manufacturers, distributors and dealers of professional motion picture equipment. An Associate membership is provided for those individuals and/or small companies active in fields related to professional motion picture equipment, its service or technical advancement. The Associate member has no vote and may not hold office, but may participate in committee functions other than as chairman.

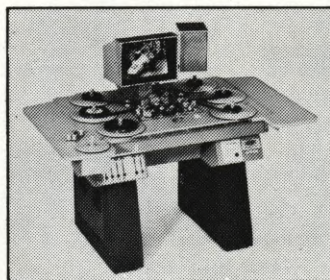
Those interested in PMPEA membership or activities should contact Lee Duncan, Secretary/Treasurer PMPEA, c/o Victor Duncan, Inc., 2659 Fondren Dr., Dallas, Texas 75206, (214) 369-1165. ■

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### SPECTACULAR EFFECTS FOR "DAMNATION ALLEY" Continued from Page 1187

brarians — as well as all the "normal" tasks of an assistant editor.

The final steps, which resulted in a piece of finished film that could be cut into the work print, took place in the optical house.

The technique developed for putting the laser sky into more than 300 scenes consisted of an interpositive made from the original negative of the live action scene from which a matte was made of the foreground to be held out (male matte). The traditional method of using a female (sky portion) matte in addition was not used, partially because of the impossibility of getting clear enough separation to generate clean mattes, and also because the system of putting the laser sky in at varying percentages under 100% made it seem part of the real sky. This technique also allowed even heavy dust to cross the matte line, giving an impression of total reality.

A black hold-out matte of the laser pattern itself was made and put into the existing sky so that the percentage of laser exposed into it could be measured exactly. Since the color of the skies in the live action photography frequently varied from cut to cut, this method also controlled the amount of contamination of the laser color caused by double exposing the real sky and allowed, again, maintenance of continuity from scene to scene.

The use of the aerial image printer instead of the bypack method reduced the possibility of matte lines even further, as the film was composited on a projected plane in air, rather than being separated by the thickness of the film itself.

Joe Wallikas' (optical cameraman) expertise, his scientific experimentation with method after method, including personal control of the matte developer to get the best mattes possible, was an indispensable part of the success of the visual effects. Ably seconded by John Ellis, the optical compositing was done with insight, imagination and care.

The ability of the small group of filmmakers comprising Cruse and Company to not only handle their own departments, but to overlap positively into other areas resulted in an atmosphere of creativity that could and did accomplish the impossible.

After ten months of innovation, determination, and hard work, the skies were not blue, but orange or green or white, with undulating fingers of light reaching into the atomic world of "DAMNATION ALLEY". ■

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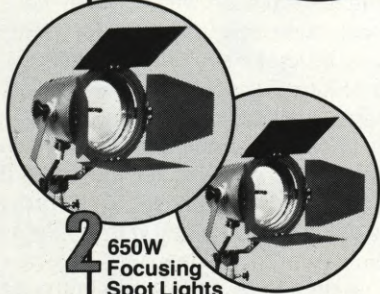
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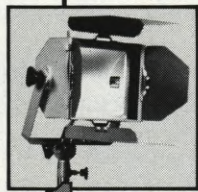
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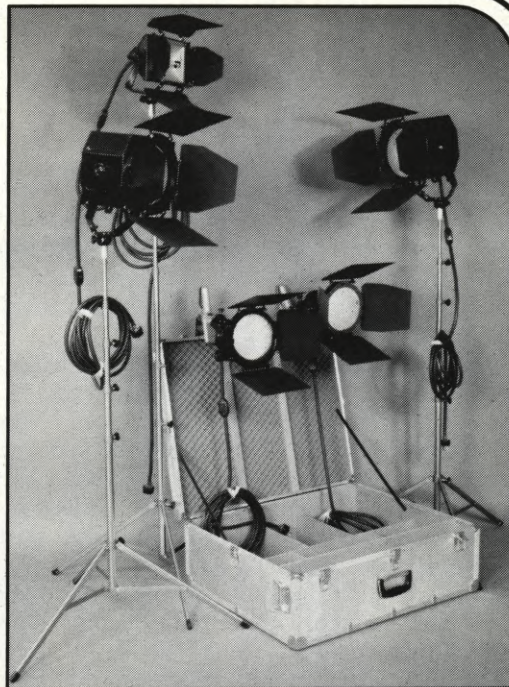
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Spot Lights



2  
650W  
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Spot Lights



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1000W  
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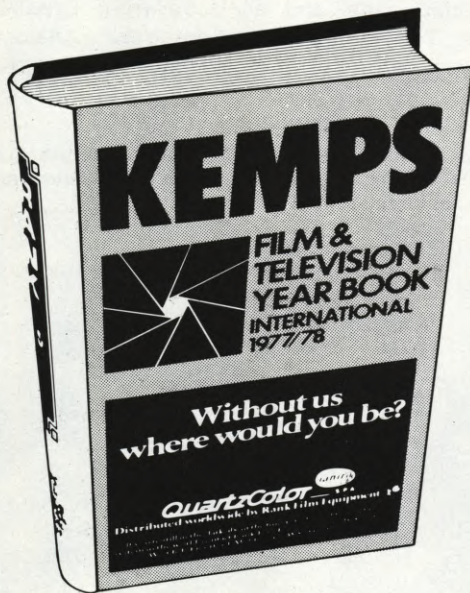


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## TRAVELING LIGHT ON LOCATION

Continued from Page 1168

system and eliminate much of the lighting gear we used to bring. We will be more dependent on available lighting, supplemented by our lights and control media. Baby legs are left home because the Arri 35 ball can be clamped to a Halliburton case in improvised high-hat fashion. Also, the flat base and wonderful eyepiece of the Arri SR permit it to be placed on chairs, floors, tables or just about any other means of support. The 10-150mm lens replaces several of our fixed lenses and proxars.

Not only do we have a considerably condensed array of equipment, but we also save money. The equipment shipped as excess baggage totals 125 pounds, which from New York to Cali costs us \$220. We will spend no more than \$800 on our entire South American trip in excess baggage.

South American customs agents are notoriously tough — small wonder, considering that an Arri SR is worth three times its list price on the black market. This is not an advisable avenue of financial pursuit, since it is made quite clear that if the camera does not leave the country upon completion of the job, neither do we.

In spite of our detailed equipment lists with stamps and seals from consulate and government officials, it seems that we are in for a night at Cali airport. It is midnight. The customs agent wants to go home. The fact that there are at least thirty more passengers to be checked has very little relevance. Hysteria does not help.

We are rescued by a representative of Coca-Cola, who has come to meet us and knows two things we do not. He is wearing a tie. And he asks the customs man to let us through for the sake of his mother. Miraculously, we whisk through.

It is an enormous help to have customs arranged by a major corporation well experienced in international trade and customs brokerage. Betty Jo Taylor of Coca-Cola in Atlanta has alerted representatives in all our locations to aid us through customs. In addition to Plan, we will be spending some days working on foreign sequences for a corporate marketing film which is underway.

At 3 a.m. we are underway, on the road to Buenaventura with the local Plan director and his assistant.

We drive three hours in total darkness over treacherous mountain roads said to be crawling with bandits, which is why we do not stop until we reach our first location. It is an interior: Plan's school. The entire town is there. Children have been memorizing lessons for weeks.

At 6 a.m., after flying ten hours from New York and driving over bandit-infested mountains, we have neglected to ask whether there would be any electricity to power the lights we will use to illuminate the location we have come this far to film. Yes, we have asked what the voltage is and how many circuits are available. But we do not question the obvious.

Of course, there is no power. There has not been any power in the city of Buenaventura between 3 a.m. and 12 noon for several years now, as part of a government power saving program.

Buenaventura is a seaport town near the Equator that has been described as "God's curse when he is angry with you." With four of Plan's social workers, we change plans and film exterior sequences in the slums and swampy alleys that could have been a Hogarth scene. We walk single-file on the four-inch part of two-by-fours that act as walkways above the swamps.

The SR and SNN outfit operates beautifully. It is 110 degrees and at least as humid. Mel slates sound number sequences with a printed circuit thumbwheel which displays

numbers from 1 to 99 in 1/2" digits. One number is sufficient to identify a whole sequence of multiple takes in the same location.

Everything is on stilts. Our biggest problem is maintaining balance on the narrow two-by-fours, while shooting, slating, and permitting other people who must step around us to pass with heavy items balanced on top of their heads. One wrong step, and everyone topples into the malarial swamp.

Travelling light implies improvisation. Improvisation at its best is a highly developed art. I was first introduced to its more subtle theories while trekking the Juneau Icefields with the legendary explorer Ome Daiber, who is best remembered for having blessed this life with a gooey concoction known as Sno-Seal. Allegedly invented to waterproof mountaineering boots, its uses have been liberally extended to include waxing of skis, lubricating snowmobiles, working as suntan cream and greasing frying pans.

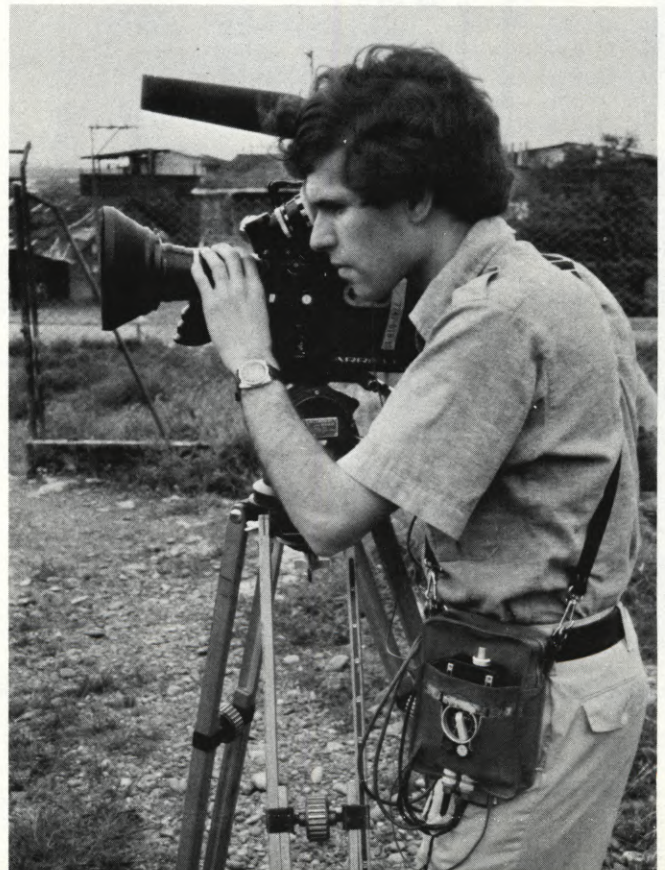
Ome patiently taught us to save everything and make use of everything saved. We learned how his saving a used sardine can saved an Antarctic expedition. The radio antenna had broken. Ome cut the sardine can with his Swiss Army knife into a long radio-aerial.

Our next lesson was how the Swiss Army knife could be used to repair anything: from performing minor surgery to dismantling an ocean liner.

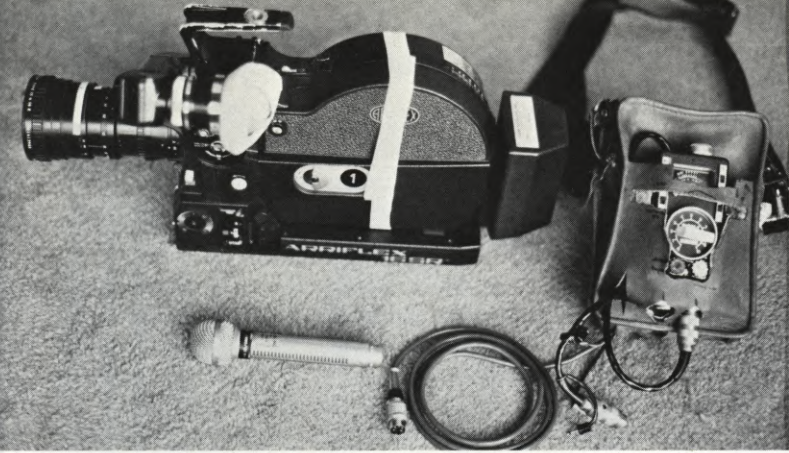
Improvising for filmmaking is another matter, although the spirit of adventure is the same. Most adventurous is improvisation in the electrical department.

Our electrical department is that marvelous erector set — the Lowel Tota-Light system — an improviser's dream machine. In addition to its usual contents, we have added some zip cord, plastic sticks of high insulating and heat resistant characteristics, clothes pins, voltmeter, electrical tape and wire strippers. This assortment replaces tie-in, feeder cable, distribution panel and all Underwriter Labs Safety Approvals. The theory is, without getting electrocuted, to improvise the various wires, sticks and tape into all kinds of

**Cameraman Jon Fauer shooting in Buenaventura, Colombia with Arri 16SR, Nagra SNN sound system and connecting cables for simultaneous recording.**







(LEFT) The complete sync-sound filming combination, showing relative sizes of the Arriflex 16SR camera and Nagra SNN custom sound recording system. (RIGHT) Tool roll made of denim by a Colombian sewing class, complete with Jon Fauer's initials. (Photographs by Mel London, Vice-President, Producer/Director, Vision Associates.)

series connectors or foreign adaptors. It is extremely dangerous, and requires someone to maintain constant vigil for sparks or flames. But it is not as dangerous as the Pete Henning Memorial Tie-In, which consists of two rocks attached to two lengths of copper wire heaved onto the bare overhead lines. Peter has miraculously survived this technique.

The only location where we run afoul is in Bogota, where in one location we find both 110 and 150 volts A.C. In such situations, someone invariably is found who has a step-down transformer, invariably made in Germany and of vintage year, which when plugged in with its frayed wires glowing cherry red and insulation dripping from its ancient coils, invariably will last long enough to power the lights for the duration of the scene.

Many of the places we film have no electricity at all.

"Bolivia is a land of contrast," we read in a guidebook enroute to La Paz. "Land of contrast" is every travel writer's hackneyed introduction to every travel guide; however, in La Paz he is unwittingly accurate. As fellow passengers collapse around us from the thin air of 14,000 feet, bottled oxygen is passed around like bottled soda, and we are dazzled by contrast ratios of monumental proportions: 20 foot-candle readings in the shade, 5000 in the sun.

We climb several thousand feet above the road to an Aymara Indian adobe hut built into the mountainside. We have a space blanket to use as a reflector to bounce light into interiors such as this. Unfortunately, the space blanket has benefitted from our lectures on improvisation and our driver has used it to refabricate seat covers for the Jeep. We notice some mirrors hanging above the front door, allegedly to ward off evil spirits. We ask if we might use them to shine light into the hut. Catching the sun, bouncing it off the ceiling, shooting the family inside the hut against an open window — the lighting worked fine until grandmother realizes that in tampering with the mirrors we are, in fact, bouncing the evil spirits directly into the house. Bolivia is a land of contrast.

Keeping everything clean is essential. It is also next to impossible. We bring one can of Dust-Off for every week of shooting. At this rate, our ozone layer should be depleted rather rapidly. Magazines, since they are coaxial, can be cleaned every roll — both with a stiff bristle brush and with air. The gate is cleaned with a plastic skewer. Lens barrel and everything else is sprayed with air and brushed.

Dirt roads are our greatest enemy. On the Altiplano of Bolivia, the roads are dry, dusty washboards whose surface is a fine powder that penetrates everything and everywhere. We ride a bus with Aymara Indians, livestock, raw meat, fresh fruits, chickens, used weapons, contraband

radios and a tankful of tropical fish that are not taking too well to the altitude or the temperature. After the fish are no longer living and what had once been raw or fresh is no longer — a passage of considerable time — we arrive at a Plan rural development project to irrigate the land near Lake Titicacca. Dust is in everything, in spite of plastic bags that have been wrapped around the equipment. An entire can of Dust-Off and a thorough brushing of all exterior surfaces suffice. The SR is well sealed; the Nagra is equally well designed. Our bodies are not as resistant.

Very important for field repairs is a tool kit. Mine is a denim tool roll made by a local sewing class. In it are enough tools to repair the vehicle you are driving, the camera you are shooting or just about anything else that might need fixing: vise-grips, jeweler's screwdrivers, regular screwdrivers, wire strippers, needle nose pliers, soldering iron, solder, wire, tweezers, X-Acto knife and Allen wrenches.

In a small belt pouch we have the camera cleaning materials: lens tissue, lens fluid, plastic skewer, Dust-Off Junior, chamois cloth, Swiss Army knife and a Luxxo Magnifier with built-in light to check the SR gate. This pouch, normally made for hikers, clips onto the belt.

To save weight and space, the day's stock and supplies are packed into a nylon duffel bag, which can be carried or worn as a rucksack. Exposed stock and extra gear remain back at the hotel in the fibre stock case. When flying, the empty nylon bag rolls up into the tripod case.

We have printed special camera reports for the SR which attach to the magazine. They are pressure sensitive adhesive labels, 4"x6". The top part is filled out with emulsion, roll number and production. Below a perforated line, we fill out camera report and scene descriptions. When the magazine is fully exposed, the label is removed. The top part is stuck to the exposed film can, and identifies Vision, stock and roll to the lab.

The bottom part tears away at the perforation and goes to our film editors. We seem to save time, paper work and duplication of effort. This often neglected job of identifying footage now gets done, since someone is always near the camera and can easily enter the information.

Usually, every child in the neighborhood is near the camera hoping to look through the eyepiece. This Pied Piper phenomenon is the best thing that can happen to gain support, cooperation and trust. The Aymara Indians are extremely gentle but extremely shy. We are as strange to them as they to us, with our large camera and strange clothing. We explain what our camera does, and they explain how they do their weaving, which is what we would like to

Continued on Page 1196

# SPECTACULAR VISUAL EFFECTS FOR "DAMNATION ALLEY"

**Floods, multiple tornados and laser-streaked skies predominate, as the earth is ripped from its axis in the wake of a nuclear holocaust**

By MARGO ANDERSON

The trouble was the sky.

The sky was blue, NOT orange nor green nor white, NOT cracked fingers of light undulating upward and overhead, not the radiation belt, not the awe-inspiring threat necessary to the storyline of Roger Zelazny's "DAMNATION ALLEY".

It was after the company had finished principal photography and the film was almost in final cut that producers Jerry Zeitman and Paul Maslansky, and Post-Production Vice President Leonard Kroll of Twentieth Century-Fox called in Art Director Bill Cruse and his company of effects

experts to change normal skies to the devastatingly eerie and spectacular skies that surround the earth after the Third World War.

The technical problems were enormous. In order to introduce new skies, hi-con film mattes had to be pulled off the foreground to avoid contaminating the actors or any component of the scene that would naturally occur in front of the sky. A uniform deep blue sky would have been ideal, but all the exterior scenes had been shot on location without polarizing screens and many of the skies were misty or, in some cases, bald white and cloudy. So

it seemed unlikely that either color difference or density mattes could be pulled from the live action photography.

Hoping for a solution with a new process, a sample scene was sent to Canada to see if mattes could be made electronically, using television techniques, on a new piece of equipment called a Flying Spot Scanner. That proved to be unacceptable. The state of the art just hadn't evolved far enough.

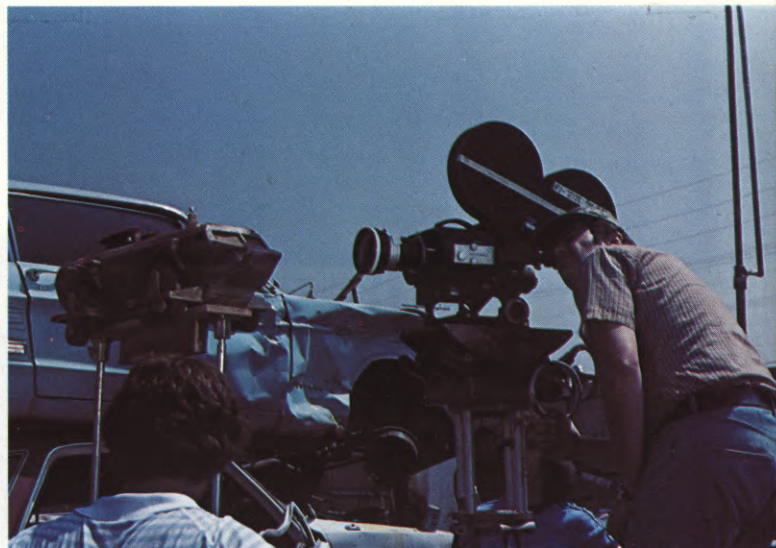
Back to film techniques. An answer was finally found through careful experimentation and the patience to treat each scene as a new and differ-



Filming the start of a gigantic windstorm in the desert for the 20th Century-Fox futuristic thriller, "DAMNATION ALLEY", in which four survivors of a nuclear holocaust set off on an incredible cross-country odyssey to discover what has become of the world. They engage in deadly battles with bizarre adversaries and frightening forces, against a surreal backdrop of nature gone absolutely mad. The creation of these effects on the screen has employed several techniques rarely, if ever, used before.

A studio set representing the interior of the Las Vegas Circus Circus Hotel casino following the devastation. William Cruse served as Visual Effects Art Director on the film, which features approximately 300 composite shots of the most intricate types. Extensive research indicates, incidentally, that all of the strange occurrences and abnormalities seen on the screen are within the realm of possibility and are presented with scientific accuracy.





(LEFT) In "DAMNATION ALLEY", the desert is overrun by giant scorpions. To achieve this effect, a Mitchell Mark II camera running at 96 frames per second was used to film real scorpions against a blue screen. Each shot was carefully worked out for accuracy of scale, movement, placement and perspective. (RIGHT) Bill Cruse checks split-field diopter line-up for a miniature shot of the Landmaster, the indomitable vehicle that transports the survivors eastward. The full-scale operative machine weighs 21,800 pounds, is 35 feet long, 11 feet wide and 13 feet tall.



(LEFT) Cruse storyboarded live action and the placement of mock-up scorpions which would later be replaced by live scorpions matted in by means of the blue screen process. (RIGHT) A laser beam run through various lenses and filters is reflected off a foil material to give the light its pattern. Cruse's "slope-scan" (similar to "slit-scan") gives the effect of the laser-streaked sky traveling overhead, yet originating from a vanishing point on the horizon.

(LEFT) A matte painting of the famous Las Vegas "Strip", where most of that gambling city's sprawling hotel-casinos are located, was made through the use of an 8x10 color negative blown up to photomural size, after which the sand dunes were painted in by Academy Award-winning matte painting artist Matthew Yuricich. (RIGHT) A closeup matte painting of the Circus Circus Hotel with sand dunes piled up against it, caused by the tornados which sweep the desert in the wake of the holocaust. (Photographs by Allen Blaisdell.)





(LEFT) Jim Sleeper, Dennis "Rocky" Mahoney and Carole Keligan spent many hours lining up the various elements for each composite in "DAMNATION ALLEY". (RIGHT) Carole Keligan, assistant editor, answers questions for Joe Wallikas, camera operator, and his assistant, John Ellis, who composited more than 300 special effects shot on the aerial image optical printer.

ent problem, which it was. Joe Wallikas, optical cameraman, said, "We took scenes that you shouldn't have been able to use and made mattes of them. Specific tests were made on every single scene to extract mattes by using Eastman 5243 inter positive and the live action film. It worked."

The next problem was to make the sky that was introduced seem part of the live action scene. To do this, the sky had to have the same vanishing point as the live action scene. The sky had to move with the horizon in pans, zooms, dollies and crane shots. Even more difficult, the live action cameras were not steady, so that, in some cases, the

production footage had a slight jitter from frame to frame, which movement would also have to be matched.

Several sequences, involving 83 scenes, required extensive miniature photography ranging from tornadoes to seven-foot scorpions. All of this sky and miniature footage, along with five matte paintings and 61 blue screen shots combined for a total of 370 composite scenes.

The aesthetic of the sky to be introduced would have to lend itself to the metaphor of an atomic environment that could only be imagined.

After exploring many different approaches, a kryptonite four-color laser

was decided on as the most powerful and realistic art medium. With its infinite number of patterns, its subtly variable color range, plus its own internal movement, the laser was the perfect answer to dramatically changing the skies while retaining an atmospheric look.

The laser was then attached to a specially modified animation camera. The main problem to be overcome was making the projected image of the laser travel smoothly with the movement of the table. Without this ability, the camera table would be moving, following the movement of the live action, while the laser pattern remained still. This was accomplished by mounting the laser itself on an enlarged animation table. After many added bushings, minute calibrations, and a few new parts, it was ready to go.

To utilize this capability, each moving shot that included a sky had to be tracked on that same camera stand and then interpreted in terms of animation stand numbers that would be repeated later while shooting the laser image. Outdoor scenes in the picture that included a sky were checked to determine if they were moving, and most of them were! A black and white hi-con matte on registered stock was ordered from the optical house for each moving shot. These were then loaded into the laser animation camera and projected down onto the animation table by a change in shutter position.

The success of every shot required hours of study, knowledge and sometimes intuition by animation camera operators Mimi Gramatky and Allen Blaisdell.

For optimum accuracy, the shots

**The Landmaster is driven into a tank for filming on the backlot of the 20th Century-Fox studios. Innovative in all respects, and one of the largest functional vehicles ever built for a motion picture, the Landmaster is capable of moving in virtually any terrain. It is based on a patented invention of Robert W. Forsythe and John P. Forsythe, who, through their firm, Vehicle Systems Development, provided technical support to the studio during filming.**



were always tracked at the largest field possible. This was controlled by the number of apertures which the live action scene moved. The farther it moved, the smaller the field at which it had to be tracked in order to stay within the confines of the animation table.

There were four dimensions that had to be taken into account and followed exactly: east-west, north-south, combinations introducing rotation and zooms.

In order to get the most convincing movement, the farthest point visible on the horizon was the best reference to follow. Dust on the horizon, objects in the foreground suddenly obscuring the frame, long pan shots that moved many apertures, all added to the monumental task.

After a shot was tracked, the numbers were copied from the dials of the camera stand on animation sheets, and a sketch of the action of the scene was drawn (part of the plotting process); it was ready to be shot.

The person responsible for the operation and control of the laser was Clyde Tichenor, a physicist pried loose from his scientific world for the duration of the film.

Laser light shows have become popular enough so that a large number of people at various rock shows have lain back in their seats watching spectacular patterns burst and fade on the ceiling of the concert hall more or less in time with the music. But no one had made the laser as controllable and repeatable as normal flat animation art, and that capability was absolutely necessary to the success of the project.

Clyde accomplished this by organizing the beam through a series of auxiliary optics working in conjunction with a variable speed projector which held the surface the laser was reflected off to create a pattern. The surface on the projector was changed

to create different patterns and the speed of the projector was varied to increase or decrease the internal movement of the image.

Since the laser was shot anywhere from one frame at a time to the maximum six frames per second, it was necessary to mathematically interpolate the shooting frame rate into the actual speed when projected at 24 frames per second.

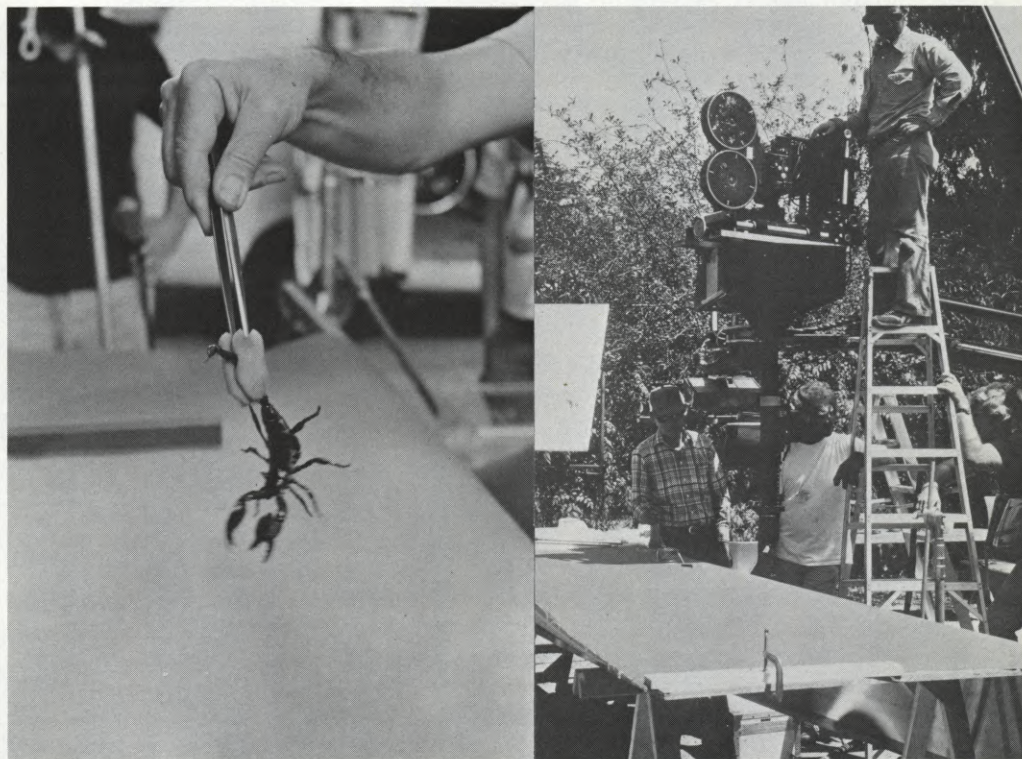
The continuity of each sequence had to be broken down and analyzed so that, in an intercutting sequence, every time a cut was made back to the same angle, the laser pattern would be the same.

Another aspect that had to be exactly repeatable was the color of the pattern.

The laser was either tuned to remove a certain color of its four-color capability so the remaining colors dominated, or bounced off dichroic mirrors. Sometimes a gel was used to saturate a specific color. As with the pattern, the colors had to match in intercutting sequences to maintain continuity.

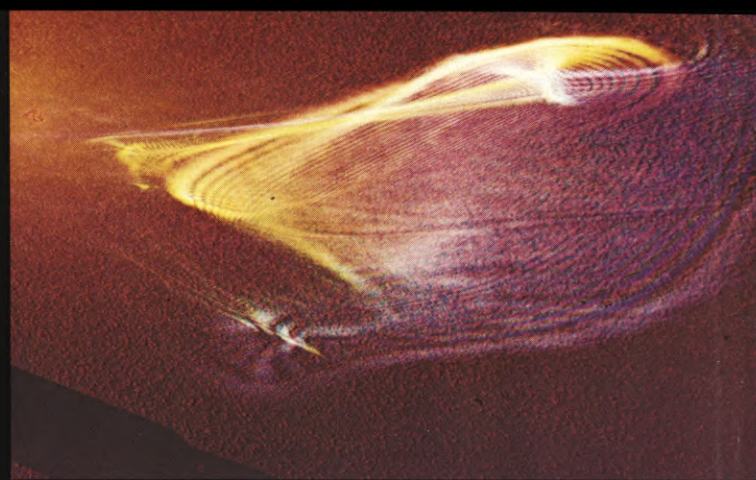
After the laser component was shot on 5247 Eastman color negative or, in some sequences, aeriographic stock, the daily print was sent to the editorial department for line-up with the correct live action scene, and a registered color print was sent to the optical house.

An additional dimension added to the picture was the miniature photography created by Bill Cruse. Shots of



(ABOVE LEFT) Scorpion "wrangler" Clyde Tichenor holds up the talent. Five live scorpions were used in rotation for the closeup cinematography. (RIGHT) Steven Shuttack films scorpions from precarious perch. Each shot could be viewed on a video monitor. (BELOW LEFT) Editor Margo Anderson and assistant Carole Keligan decide where to match action for a scorpion composite. (RIGHT) A micro-plotter was used for the finite tracking necessary to achieve steadiness when matching movements in principal photography, due to camera vibration, tilts, dollies and zooms.





Two of the infinite variety of patterns achieved by reflecting laser off a foil material, after having run it through various lenses and filters. These patterns were later added to previously photographed live action exteriors and background shots to simulate the strangely hued and streaked skies which surround the earth following the nuclear explosion.

the miniature Landmaster (a tank-like vehicle used for the cross-country traverse in the story) were taken surrounded by swirling dust (white powder) for the tornado sequence, underwater in the ocean off the coast of Santa Barbara for the final cataclysmic storm, in the foreground of scenes in a junkyard using a split-field diopter to create a composite in the camera.

All the shots had to be carefully computed, laid out mathematically, lenses and camera speed decided by the empirical law of miniatures (the square root of the scale of miniature times 24 frames per second) to determine at

what frame speed the miniatures should be shot in order to give them the illusion of gravity.

This was particularly vital in the case of the scorpions, shot at 117 frames per second for wide shots and 96 frames per second for close ups to give the three-inch scorpions the weight and ponderousness of a seven-foot variety.

Before shooting the miniatures, the background plates to be composited with the blue screen scorpions were back projected onto the drawing board in order to establish the lens, camera angle and height at which to shoot the miniature scorpions so that they would

give the illusion of standing on the surface plane of the background plate.

Massive storms and threatening tornadoes were created with super-fine dust and extremely high-speed cameras. Shot against black and then composited with a live action background plate, the miniature elements seem to tower threateningly over real objects many times their size.

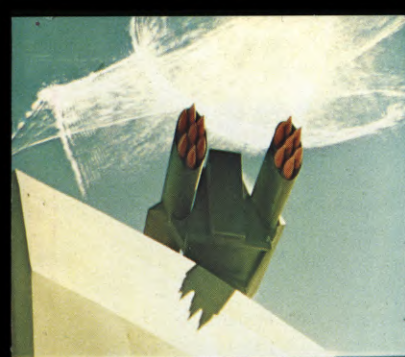
The visual effects editor, Margo Anderson, had the demanding and exacting job of deciding at what point separate pieces of film should be composited in order to make the action work together as one coherent scene.

Blow-ups of squeezed anamorphic frames from "DAMNATION ALLEY" showing various composite effects. (LEFT) This spectacular blue-green and white sky was achieved by using a red laser beam and infrared film. (CENTER) and (RIGHT) Blue screen composites shooting from inside the Landmaster, with the laser sky in the background. Throughout the film the skies ripple and scintillate with the laser streaks, while the overall backgrounds change color.

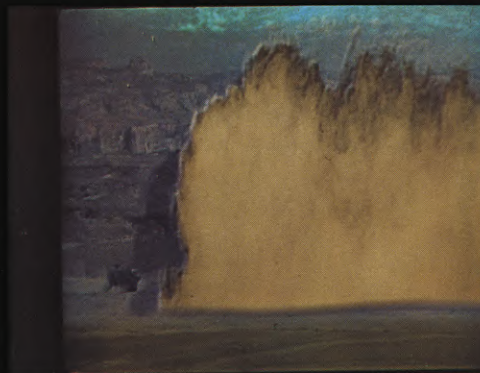


(LEFT) Bill Cruse's "slope-scan" method of shooting lasers created this dramatic red sky with meteors zooming over the city. The sky patterns move very rapidly, in a way similar to that of clouds in a time-lapse scene. (CENTER) In the ocean off Santa Monica, California, a 1-inch-per-foot scale model of the Landmaster was used to film underwater scenes of the vehicle caught in a tidal wave. (RIGHT) The Kenworthy Snorkel camera system was used for closeup photography of the live scorpions.





(LEFT) A specially modified laser camera stand was used throughout the project. This basic sky effect was achieved by using white laser light with standard 5247 color negative. (CENTER) This convincing composite was made by using the 1-inch scale model of the Landmaster superimposed against a green sky shot on 5247. (RIGHT) Many of the live action elements to be used for composite effects were not shot with locked-down cameras, thus creating a steadiness problem. Steadiness was later achieved by means of intricate frame-by-frame tracking of the live action and laser sky patterns.



(LEFT) The Landmaster coming up out of a bunker and composited with a green-colored laser sky. (CENTER) A high-speed camera running at 350 frames per second was used to create the effect of a gigantic sandstorm. It was then composited with the live action shot, using standard black male and female mattes. The Landmaster can be seen entering the cloud in the lower left corner. (RIGHT) This shot showing multiple tornado funnels is composed of 13 separate passes, each requiring a matte.

The tornado shot, for example, required selecting pieces of film that would fit the dynamics of the shot from over three thousand feet of film (shot at 360 frames per second to give it scale) for a cut that would be just 5 feet long. As the funnels (each a separate piece of film) were shot upside down, the film, when composited, had to be printed from tail to head, which in turn reversed the action. A zoom-in became a pull-back; a funnel pulling up became a funnel dropping down. A puff of dust turned upside down, but printed from head to tail to get the necessary broiling action, was added as the cloud from which the tornadoes drop. The background plate was step-framed to keep from moving toward the tornadoes too quickly, and dust was put in the foreground to intensify the ominous feeling.

Two four-gang synchronizers were

laid end-to-end, each holding four pieces of film; all were juggled back and forth — keeping in mind that some of them were to be printed backwards — until the action seemed right.

Once those decisions were made, all the information had to be translated into paperwork intelligible to the optical house, along with instructions to flop the mattes of the tornadoes to create shadows. This, plus several conferences with the optical cameraman, resulted in one of the most spectacular shots in the picture.

Another editorial juggling act was cutting the scorpion sequence, a two-fold problem. It required careful location of the scorpions to give it continuity and threat, as well as preventing the motorcycle from crossing matte lines, all the while maintaining pace and excitement.

Frequently, the scorpions on blue

screens were traced in grease pencil on the picture head of the Moviola, then the live action motorcycle plate run to make sure the bike could thread through the scene without passing in front of a background scorpion, which would have necessitated time-consuming and expensive roto-scoped mattes. Sometimes a shot would have to be changed so a cut could be made before the bike crossed the matte line. Putting two pieces of film in the Moviola simultaneously also helped to judge action, i.e. the bike turning just in time to avoid the scorpion's lunge.

Carole Keligian, assistant editor, had the monumental task of keeping track of all optical count sheets, finding negative everyone swore someone else had, and making sure the film being tracked was the right scene exactly to length — a job for at least three li-

Continued on Page 1178

(LEFT) Principal actors and the full-scale practical Landmaster are shown on the blue screen stage during filming of live action scenes to be composited later with laser and miniature effects. (CENTER) Man on a motorcycle roars on a slalom course between giant scorpion mock-ups, later to be replaced by live scorpions. (RIGHT) Shown here filming live action sequences in the desert are Director of Photography Harry Stradling Jr., ASC, (right) and his crew.



# THE LONG HARD GIRAFFE FILMING SAFARI

By MICKEY FREEMAN  
and GLEN CARROLL

An ailing animal and hundreds of miles of low overpasses make the film documentation of the transporting of giraffes to Mexico a tall order

"Para Los Niños De Mexico con todo carino, Ed Daly," read the sign on the side of the cage as it roared down the highway. "For the children of Mexico with all love, Ed Daly." In the cage stood Wally, a nine-and-a-half-year-old, fully reticulated, 17½ foot giraffe on the first leg of a 3,500-mile trip from San Diego to Mexico City.

Why was Wally going to Mexico City? To answer that question one must understand World Airways President Edward J. Daly. Twenty-five years ago Ed Daly bought a debt-ridden charter airline called World Airways. Through strokes of business genius and a lot of hard work, he has turned that same struggling company into the largest and most successful charter airline in the world. However, Mr. Daly is not all business and hard work. In the course of building an airline he has also built a reputation as a philanthropist and humanitarian. Often at the risk of losing money and sometimes aircraft, he has transported people and supplies in and out of the world's man-made and natural catastrophes. It was only natural that when he found out that the Children's Zoo in Mexico City did not have a giraffe, he once again came to the rescue. He didn't have to look far. It seems there's a number of giraffes in the world's zoos these days, so he purchased one from the San Diego Zoo and "Project Wally" was born.

No one realized that "Project Wally" would, in fact, become two separately

filmed journeys to Mexico City. And no one anticipated the coordination and production problems that were to overshadow the fairly smooth technical aspects of the filming.

The transporting of exotic animals is at best a nightmare, but moving a giraffe for a distance of 3,500 miles across deserts, mountains, and an international border boggles the mind. World's graphics and public relations man, Jack Morgan, decided that it would make a fascinating film, so he contacted producer/director Larry Russell.

Work began immediately with Jack, Larry, and cinematographer Mickey Freeman speculating as to the best approach. A straight documentary seemed appropriate, but Jack and the people at World had other ideas. Children's coloring books and giraffe buttons were to be distributed to the children in the towns and villages along the planned route. World wanted a film story that would coincide with the story told in the coloring books. In addition, they wanted newsfilm shot at various points along the way to be shipped back to San Francisco. Quite an order! So in addition to assistant camera/soundman Dick Favaro being hired, cinematographer Harris Cohen was taken aboard to double as second unit documentary and news cameraman. This required a single-system capability, as well as double-system crystal capability, so the obvious choice, in

addition to Mickey's favorite Eclair NPR, was the versatile CP-16R/A.

Armed with the two cameras, several thousand feet of 7247 negative, 7240 VNF, and a formidable number of lenses for both cameras (including: a 600mm Kilfit, a Zeiss 16mm T/1.3 adapted to the Eclair for night shooting, the Angenieux 10-150 lens, a 12-120, a 9.5-57, an 8mm Distagon, and a Kinoptic 5.7), the crew left for San Diego from San Francisco on Wednesday March 9.

That night everyone involved in the project met and became acquainted. The animal transporters from Texas, Leon Leopard and his crew (that's right: Leon Leopard), a writer and still photographer from *Contact* in New York, the World Airways people and ourselves.

After a local press conference the next morning at the San Diego Zoo, our caravan pulled out. It consisted of the animal transport truck, rental cars, a twenty-five-foot motor home packed with gear for the film crew, press cars, and a police escort. We headed East on Highway 8 for Laredo, Texas, the next overnight stop 1,500 miles down the road.

The realities of the project were soon very much with us. Looking like a one-giraffe circus leaving town, the carnival immediately began to attract attention. Fellow motorists were amazed at what they saw and were constantly cutting into the caravan for a closer look. Not the least of spectacles

The beautiful male giraffe, Wally, peers confidentially over the top of his pen, as cars whiz past while he is being trucked through New Mexico bound for Mexico City. However, the unfortunate Wally contracted pneumonia and died en route. Greatly saddened by this loss, but undaunted, sponsor Ed Daly, determined to give the children of Mexico a giraffe, started over again with two of them, Luis and Phyllis, who made it to Mexico in good condition.





was the film crew perched atop the motor home going down that long not-so-lonesome highway filming the giraffe.

Everything was going smoothly until the first freeway overpass. It seems they just didn't have giraffes in mind when they built those things, since most have a clearance of between 14 to 16 feet. Wally happened to stand a lofty 17½ feet in his stockings. Naturally, the thing to do was to coax Wally's head down with some food, proceed slowly under and hope nothing would startle him. This gave us a chance to finally jump off the motor home and film the first of many overpasses to maneuver under. Wally did bump his head a bit on the first few overpasses, but in the days ahead, to everyone's surprise, when the caravan slowed Wally would automatically lower his head, accepting the reality that giraffes and overpasses don't mix.

Though the filming and the project as a whole were going smoothly, it was becoming apparent that the coloring book story would soon have to be abandoned. Things were moving much too quickly for any kind of fictional story to be filmed. The head animal transporter, Leon, was concerned mainly with getting Wally to Mexico City and not with making films. It was now catch-as-catch-can for the film crew.

At one point we were separated from the giraffe for almost eighteen hours beginning at dusk. Everyone stopped for something to eat and the transporters took off early. Producer Larry Russell was greeted with some strange looks when asking truckers if they'd seen a giraffe go by, but some said they had indeed and eventually, with invaluable help from CB radios, we were reunited in Lordsburg, New Mexico.

Our next serious slowdown was a night passage through El Paso, Texas, which was jammed with low wires and unfriendly constables. The transporters had to lift the wires gingerly over Wally's head with long poles.

The cast and crew arrived in the border town of Laredo on the evening of the third full day of driving and shooting. Exhausted, the crew went off to a hotel for a real shower and Wally went to the Quarantine Station. Batteries and bodies had to be recharged for the border crossing the next day. It was decided that the following morning Leon would be filmed going through the bureaucratic nightmare of getting the giraffe into Mexico. But for now the only concern was clean sheets and a bed that wasn't moving down the highway.

Bright and early the next morning Leon met with us at the hotel. Next came a trip to the U.S. Agricultural Department, then to Laredo's Chief of Police for an escort to the Mexican border, and then back to the hotel to pick up the rest of the caravan to cross the Rio Grande. During this time, Harris was shooting scenics of Laredo, while Dick and I were following Leon in and out of various buildings. This was only the beginning of the bureaucracy. Once across the border, all the camera equipment had to be re-registered, although it had already been registered in the U.S., and then the customary inspection of all the vehicles for contraband.

During all these customs procedures Mickey was asked his place of birth, which was London, England. The official asked for his birth certificate, naturalization papers, and passport, none of which he had with him. When the official called over another agent, Dick Favaro quickly solved this possible bureaucratic problem by telling the official it was London, Iowa, not London, England. The official said "Oh, Iowa. OK!" and crossed out England on Mickey's tourist visa. Which goes to show that with all the red tape and paperwork, sometimes who really cares? The entire procedure of crossing the border took nearly ten hours just to travel from Laredo, Texas, across the Border to Nuevo Laredo, Mexico, a distance of about three miles. Once across, there was a unanimous sigh of relief, not only because we were on the home stretch, but because there were no more overpasses until Mexico City.

Even though the border was a day-long ordeal, everyone was in high spirits. We had rested, the film was going well, and Wally looked healthy and happy. There had grown great respect and affection for Wally. You only have to spend a short time with a giraffe to realize what incredible creatures they are. Giraffes are placid and content in their natural habitats, and in zoos as well. But they are also very sensitive and high-strung animals and can be very dangerous. If alarmed, their powerful kicks in any direction make their long legs effective weapons. Yet Wally seemed far from high-strung or dangerous. He was calm and cool and seemed content under the unusual circumstances.

Just after midnight, on the day of the border crossing, the caravan passed through the town of Saltillo. To everyone's surprise, the streets were jammed with children and curious on-lookers. With cameras rolling, Wally's



The author, Mickey Freeman, lines up a shot with a 600mm lens for rare stationary shot. Much of the filming had to be done handheld.

affable personality filled the Mexican children with delight and awe. "La Jiraffe para los niños de México" seemed to be working. No one suspected that the journey would exact a sudden and terrible toll.

The caravan moved out on the dark highway climbing into the steep foothills toward Mexico City. Except for the drivers, everyone was settling into a much-needed sleep. At just after 1:30 A.M., someone on the CB blurted, "Wally's down." It was the veterinarian in the car just behind the giraffe. As the caravan pulled off the highway, no one knew exactly what had happened. But the vet said from the start that if Wally went down, chances were slim that he would get up again. People pulled on clothes while others ran to the transport truck. The transporters pulled the front of the pen off. Wally was down with his neck bent against the back part of the pen. The vet was yelling for more light. Only flashlights came. Wally was alive and sporadically kicking his powerful legs. The vet went into the cage and injected Wally with glycerin. Our attention shifted from our cameras for the moment to the crisis at hand. Ropes were tied around Wally's legs and everyone began to pull the 2,200 pound animal to a more comfortable position. After much struggling, there were more than enough people helping. Harris and I ran back to the motor home for our cameras to record what was happening, whatever the outcome might be. We all waited. Unmuffled trucks roared by oblivious to



**(LEFT)** Glen Carroll, Mickey Freeman and Augie Cinquegrana pose with elegant lady giraffe, Phyllis, in Saltillo, Mexico. Hundreds of eager Mexican children waited patiently in this town to welcome their beloved giraffes. **(RIGHT)** Mickey and Augie wait with 600mm lens ready to shoot the approaching caravan in Mexico. At various times during the filming several zoom lenses were used, as well as a 5.7mm extreme wide-angle lens.

**(LEFT)** Freeman shoots a sunset atop the motor home somewhere in Texas. **(CENTER)** Glen Carroll filming Phyllis and Luis in their traveling pens in Saltillo, Mexico. The inscription on the side of the vehicle translates into English as "For the children of Mexico." **(RIGHT)** The film crew shooting the giraffe crates being unloaded in the Mexico City zoo.



**(LEFT)** Mickey Freeman shooting the uncrating of the giraffes in Mexico City. **(CENTER)** Phyllis and Luis look happy in their new home at the Mexico City Zoo. Unlike their unfortunate predecessor, Wally, who died of pneumonia while en route, these two survived the journey with no ill effects. **(RIGHT)** Mickey and Augie shooting scenics in Mexico City.



our plight.

Two and a half hours after Wally went down he died of pneumonia. The wind was knocked out of all of us. After all we'd been through, we were so close — only another 500 miles to go. It was tragic! Everyone walked somberly back to their vehicles. Someone made a decision to drive back to Saltillo to the Camino Real Hotel to decide what to do there. Phone calls were placed to Mexico City and World Headquarters in Oakland. The next afternoon a decision came. It was over. We left the next morning for San Francisco for what we thought was the end of the project.

Greatly saddened but not daunted, Ed Daly and company immediately began the search for another giraffe. What they found was a young pair of giraffes in the San Antonio Zoo. Why two instead of one? Well, there were a couple of reasons. First, it was decided that the trip from San Antonio to Mexico City was considerably less arduous than that from San Diego. Second, Phyllis and Luis were the only giraffes for sale, and because they were much younger than Wally it was felt they had a better chance for survival.

There should be a word here about the shipping of giraffes. The question we were most asked after Wally's death was "Why was he exposed to the elements in an open cage during the entire trip, causing him to contract pneumonia?" The answer is that giraffes are regurgitating animals. They cannot lie down or they will choke on their own digestive juices. Therefore they must always stand. The transport pens had to be made low enough to clear overpasses and were open at the top so the animals could be made to lower their necks. We were assured by the transporters and vets alike that this is the standard method of transporting giraffes, and that hundreds had been successfully shipped in this manner.

Well here we go again. Take two! (no pun intended). After a lengthy production meeting with the World people it was decided that two film crews of two men each would be working this time. The crew, consisting of Mickey Freeman, camera, and Augie Cinquegrana, assistant camera/sound, would once again document the giraffe's journey the entire distance.

The other crew would consist of cinematographer Glen Carroll and, on his second trip, assistant camera/sound Dick Favaro. This way there would be one person on each crew who had made the first trip. The second crew's assignment was to travel with Ed Daly in his private aircraft.

It's a rare opportunity in the documentary film business to get a second shot at an entire film. Nonetheless, there we were. There were some mistakes and "if onlys" on the first trip, so we decided after looking at our dailies that some changes should be made. First, in addition to the indispensable motor home, a camera chase car was in order so that we could zoom ahead for pass-bys and scenics with greater mobility. Second, we wanted a helicopter to get those great expansive shots that only aerials can provide. Third, Augie brought his Vega wireless microphone which was put on Leon Leopard through most of the trip. Because the first film revealed a great amount of footage of the giraffe, we decided this time to concentrate more on the people surrounding the animals. The new game plan was a documentary and some spot news. Other than those changes, we felt our equipment served us very well.

On Wednesday morning, April 13 (a month after our first trip began) Mickey, Augie, and producer Larry Russell flew to San Antonio, Texas. The second crew was to depart the following morning with Mr. Daly on his airplane. All were to rendezvous in Saltillo, Mexico for a grand parade. But things began to disintegrate rapidly. The San Antonio crew was greeted with a driving rainstorm and the news that not only was there a new project director from World, but there would be no helicopter and no motor home. There we were with the prospect of having to work out of a station wagon with 28 pieces of equipment and a brand new staff of people. It was unthinkable! After much conversation it was decided that "no motor home, no film." So one was found, but without a driver. On twenty minutes notice, an employee from the San Antonio Zoo was hired to drive us to Mexico City and then return the motor home to San Antonio. The driver, Raymond, proved invaluable, not only because he was bilingual but because of his affable and undaunted spirit. He left San Antonio with only the clothes on his back (his zoo uniform) and drove four straight days without a whimper. In the world of big ideas and big money, it's still this kind of people who make it all go.

Thursday was another big day of surprises. Unlike Wally, these giraffes were not crated and ready to travel. It was then we found out how much giraffes dislike shipping crates. The transporters told us that getting a giraffe into a crate can take from five minutes to three days. Terrific! We were supposed to be in Saltillo the next

afternoon for the scheduled parade. Well, there was nothing to do but shoot the happenings. As it turned out, the animals were relatively cooperative. The whole crating and packaging procedure took only seven hours. The crates were decorated to look like a big Christmas present, with spangles looking like a big ribbon. Finally the moment came for the giraffes to leave the San Antonio Zoo. We left to set our first shot by the front gates. Our production assistant, Sally Holmstrom, waited for the caravan so that she could signal us of its arrival. We waited for twenty minutes, but no giraffes appeared. Suddenly Sally yelled "They've gone out the back gate and are heading for the freeway!" We had missed our first on-the-road shot. A few deleted expletives were spoken amidst hurried dismantling of gear and once again we hit the road.


From there it was a carbon copy of the Wally shoot, except that with the station wagon it was easier to move in traffic. With Sally driving the wagon and Raymond piloting the motor home, we had complete freedom to shoot from either vehicle. With the wireless microphone on Leon we caught some interesting dialogue we didn't have on the first film.

Meanwhile, back in Oakland, Glen and Dick arrived at the World Airways hangar for an 8:30 A.M. departure with Mr. Daly and entourage on his vintage Convair. After the obligatory shots of engines starting and pilots flicking switches, the crew stood poised to film the arrival and boarding of Mr. Daly. But at 9:30 A.M. Senior V.P. Brian Cooke approached and told the crew and pilots that Mr. Daly had been unavoidably detained and would not be making the flight to Saltillo. They left without him. Since the primary function of the second film crew was to shoot Daly, there was little to do except settle back and enjoy a long but very comfortable flight.

Somewhere over eastern Arizona the Convair received a phone call reporting that the giraffes were late in departing San Antonio, and word had it that if they didn't get to Laredo by 2:00 P.M. they would not be able to cross the Border until the next day. Well, so far so bad! No Ed Daly and late-running giraffes. The stage was set for a project that was to change completely on the average of every half hour.

Just before landing in Mexico, Dick and I were told by one of the flight attendants that our tourist cards had been left behind. But not to worry for when the time came to leave the coun-

**Continued on Page 1203**



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**BEHIND THE CAMERA**  
 Continued from Page 1137

course, was the sole photographic medium of the time. To what extent have you tried to incorporate black-and-white photography into this picture?

*SUSCHITZKY: I did a lot of tests to find out the best way to achieve the effect of black-and-white on color film. We even tried one way which involved printing a black-and-white negative straight onto color film. This gives very good results, but is restrictive, because you have to be absolutely accurate on exposure. Otherwise, you get a color cast on the printing film. I was told that I'd have about an eighth of a stop latitude. I was willing to give it a try, but Ken seemed somewhat worried. Of all the things we tried, it gave the best result, the most faithful black-and-white look, but, in the end, we are shooting those sequences on color film and going through optical processes in order to get back to black-and-white . . . on color film.*

**QUESTION: What about the actual film-making equipment that is being used in those studio sequences? How authentic is it?**

*SUSCHITZKY: I tried to find out what studios looked like in those days, but, in the end, I somewhat despaired because I could not get the right equipment over here. As far as lights were concerned, for example, we couldn't get any of the mercury vapor lamps which were widely in use in those days, and the small arc lamps which they used were also unavailable. So we just had to make do, in a way, but we don't have anything that compares with the material available in Hollywood, unfortunately.*

**QUESTION: What about the authenticity of the actual movie-making procedures that prevailed in those days?**

*SUSCHITZKY: I have a friend who is a great expert on this period and he told me a lot of things about the way films were made then. In fact, I saw a film recently called "MOVIE PEOPLE", which was made by King Vidor with Marion Davies and which includes dramatic scenes shot in studios showing the crews at work. Looking at those scenes, I can see that we have made many, many errors — which I was aware of — but Ken, on the whole, is not too worried about authenticity. He feels that as long as it looks good — and not absolutely outrageous — he'll*

go with it. For example, in one sequence we showed a band on the set, but instead of it consisting of three or four men in shirtsleeves, we had maybe a dozen men in evening dress — and with a conductor, too — which is totally unauthentic.

**QUESTION: What about reproducing the lighting styles that were prevalent at the time?**

*SUSCHITZKY: As far as the lighting is concerned, I've made an effort to make it look reasonably authentic. We have one or two practical working lamps which are passably correct and I've lit the scenes which were supposed to take place on a set with uncorrected arcs (the way they would have been filmed in those days), and then mixed that in with contrasting light behind the scenes — so that we have a contrast between the stage, so to speak, and the crew in the background.*

**QUESTION: How far along are you in the shooting schedule at this point?**

*SUSCHITZKY: We've really only just made a beginning. We've been shooting for six weeks and have officially another 12 to go, but maybe 20 — who knows?*

**QUESTION: The cinematography of the period depicted in this picture relied heavily on the use of nets, gauzes and other types of rather pronounced diffusion. To what extent have you tried to duplicate that look?**

*SUSCHITZKY: That element was another thing that preoccupied me during the planning of the film, because I knew that Ken didn't really want to use nets. On the other hand, I was well aware that they used nets all the time in silent movies. So I presented him with various tests which included these but, unfortunately, was unable to persuade him to allow me to use nets on the reconstruction sequences. In some of the sequences which involved studio work, however, we have emphasized the use of backlight more than I would normally do because, in looking at old movies, you can see that the heroine's hair is always sparkling — aided by the use of gauzes, which we haven't used.*

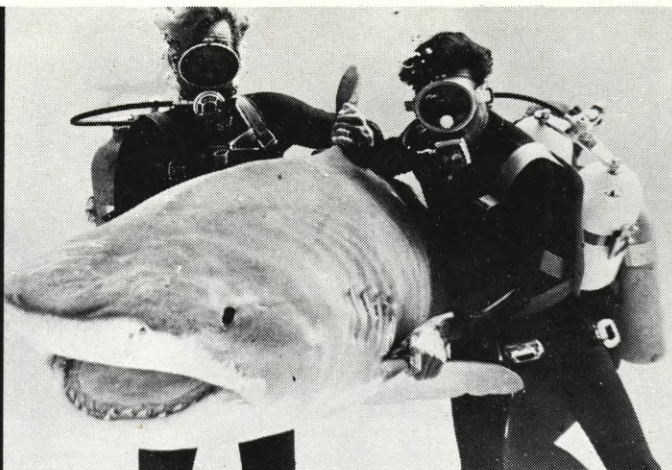
**QUESTION: Have you been using any sort of lighting that might be considered somewhat off the beaten track in photographing this picture?**

*SUSCHITZKY: Only in the sense that I've been interested in the possibilities of the contrast in color that one can*

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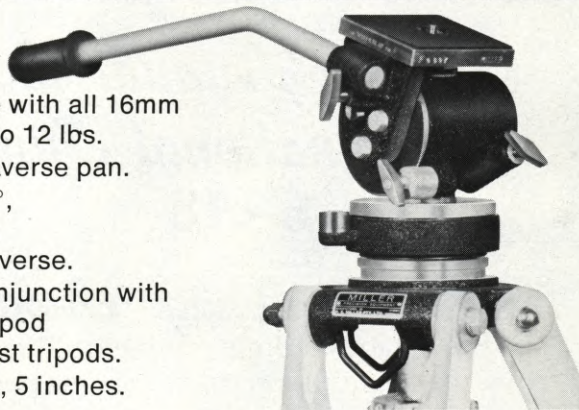
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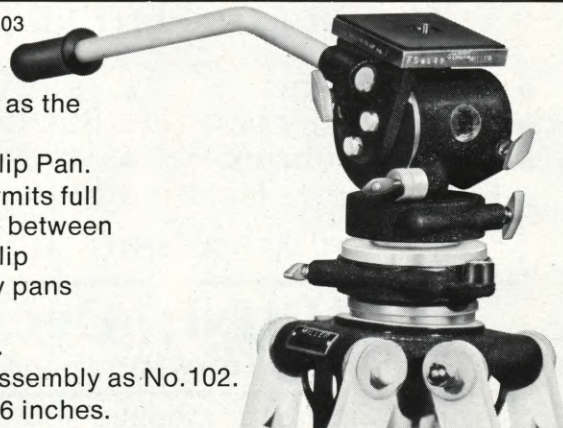
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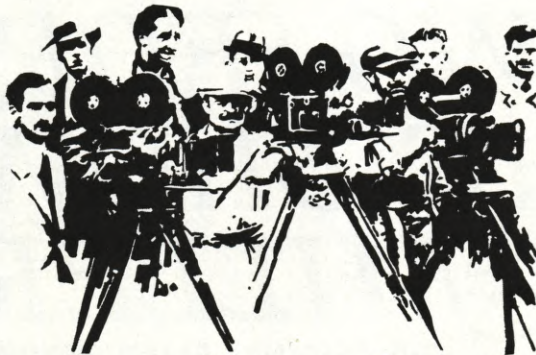
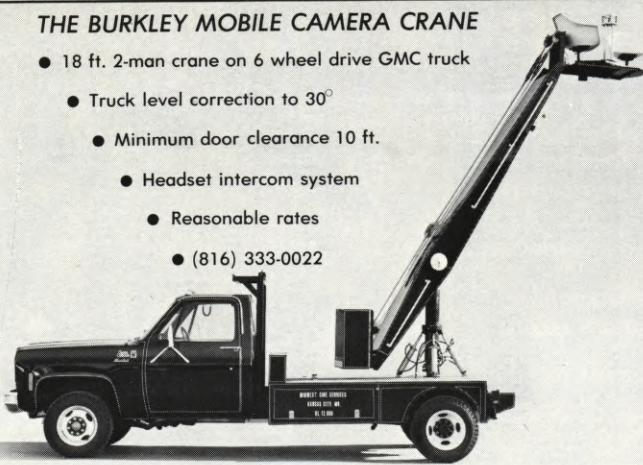


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obtain between uncorrected arcs and various gels on other lights. In some of the sequences, for various reasons, we are using HMI lights. On the studio interiors I have used HMI bulbs inside old reconstructed Kleigl-type lamps, purely because I thought the HMI bulb would burn at approximately the same color temperature as an uncorrected arc. I had been unable to find any arc lights of the correct shape and period, so I thought that was the way 'round it. On upcoming location sequences we will be using HMI's where we just need a lot of daylight-colored light, and where arc lights wouldn't be a practical possibility. For instance, on one location we will have to get up high into an almost inaccessible position and throw a lot of light through a large glass roof. The HMI's are just the ideal types of lamps to use in such a situation. I don't know what I'd do without them on location anymore, considering the amount of light that they provide. Another advantage is that they throw no heat out — which makes shooting considerably more pleasant.

**QUESTION:** I'm interested to see that you're using the Samcinevision video viewing system in shooting this picture. Can you tell me how and why that came about?

SUSCHITZKY: When I met with Russell before shooting began on the picture, he gave me the usual complaint that camera operators often don't give him what he wants. His main obsession is that things should be framed precisely as he wants them, so I suggested that we use close-circuit television. Actually, we had tried it on "LISZTOMANIA", but since that was an anamorphic picture, he wasn't satisfied that the television was giving him an accurate representation of what the film camera was getting. But I suggested that we pick it up again and try it — at least on a test day. Well, he has actually fallen in love with it and we use it on every shot and on every camera.

**QUESTION:** From your point of view, as the cinematographer, how helpful do you feel it is?

SUSCHITZKY: I think that, used correctly, it can be a very valuable tool, particularly if the camera is on a crane, or you are making an intricate tracking shot, or are working in some inaccessible place where nobody else apart from the operator knows what the camera is seeing. On the other hand, if it's played back too often, or the director tends to watch the television

screen instead of the actors, then it begins to become a negative instrument. But on the whole, as we are employing it, I think it is extremely useful.

**QUESTION: Backtracking a bit to what you said about using HMI light and uncorrected arcs, what does this do to the flesh tones?**

*SUSCHITZKY: Well, of course, you alter flesh tones; you alter color; you see only blue, but in a short sequence, used as a deliberate effect, I don't think that does any harm at all. In fact, it is very interesting, because as soon as one cuts 'round to wide shots which show the studio and the set, you get a contrast in the light which is always very striking. As a matter of fact, I believe that when shooting silent pictures with straight arcs, even in black-and-white, they had to use special makeup that had yellow in it, in order to get the flesh tones correct.*

**QUESTION: You've already told me that you aren't using nets in this picture, which would have been authentic to the period — but how about other types of diffusion, just to create some kind of feeling of the nostalgia of the time?**

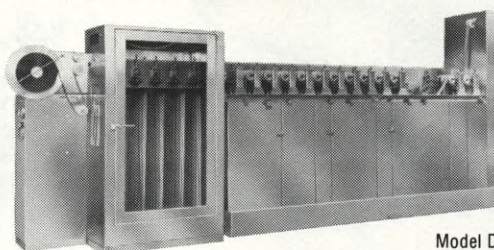
*SUSCHITZKY: I would have loved to use other types of diffusion (along with the nets), but the other obsession of Ken Russell's is that everything must be perfectly sharp. He leaves the lighting entirely to me, because I had done one picture with him and he seemed very pleased with the photographic results, but that's one concession I have to make. I would have liked to use low-contrast filters or fog filters or nets — or a combination of all of them — but that's something which he has just refused to permit. I couldn't do anything about that fact and have just had to accept it, even though I would have loved to alter the texture of the film from sequence to sequence by means of filters.*

**QUESTION: I would assume, then, that whatever softness you are getting into the picture is achieved by lighting, rather than the use of anything in front of the lens. Is that correct?**

*SUSCHITZKY: Yes, that is quite correct. I like to alter the texture and character of the lighting as much as I can from scene to scene, but any softening of the textures that I have wished to achieve in this film has had to be done by diffusing the lights in various ways.*

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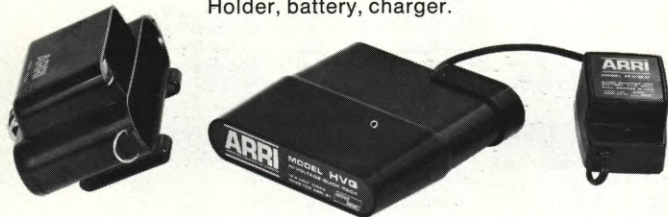
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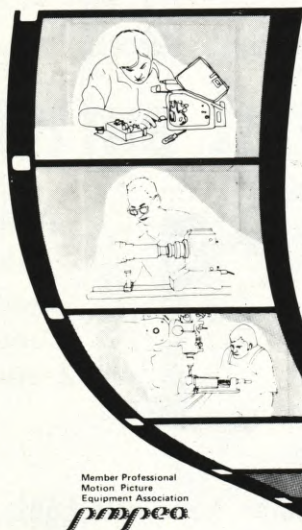
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## TRAVELING LIGHT Continued from Page 1181

film. It is a process of mutual respect and patience. First the children look through the eyepiece, since they are bolder than their elders. They love the zoom lens. Anyone who likes children can't be all bad; cautiously, the parents come to see what everyone is looking at. Soon, someone is sent to dig up one of eighty varieties of potato for a lunch to which we are invited.

Cooperation is not always so easily won. In Niteroi, Brazil, Plan's social workers bring us to a *favella* on an isolated beach. We are greeted with rocks and hostile looks. The SR is a very light camera and easy to run with. We learn later that the government had just ordered the *favella* to be demolished and we were mistaken for government officials.

While it is difficult to be totally unobtrusive, we are fortunate not to be encumbered with heavy equipment that limits our mobility. When an Aymara farmer begins plowing his fields the way his ancestors have done for two thousand years, complete with two-thousand-year-old exhortations to his ox, we are ready to film.

When a little Colombian girl begins braiding her sister's hair as we pass by her mountain hut, we again are ready. What once were relegated to "grab shots" — those great moments which cannot be repeated and were grabbed — can now be spontaneous and complete sequences. Set-up time has been all but eliminated. We are travelling light.

Certainly, travelling light is not always feasible. A week after our return from South America we are on location with 25 heavy cases, doing intricate lighting set-ups and complicated moves. But the point is that the new developments in cameras, sound equipment, lighting and film stock permit a greater flexibility in approach to filmmaking than ever before.

Fifty years from now, a production assistant will be packing equipment for a location job into one small bag. He will remember that "impedimenta" means both baggage and hindrance. This will be entered on the keyboard of his wrist computer, and the production assistant will decide to leave something behind. A week later, the cameraman will fire the production assistant, as he discovers that the socket into which he inserts his index and middle finger to record signals received by his eyes and ears has been left behind. ■

(ABOUT THE AUTHOR: JON FAUER began his film work while studying at Dartmouth



College in Blair Watson's Film Department. Before graduating in 1971 with a degree in art history, he had produced and photographed several award-winning films, including "LOSEY ON FILM" for N.E.T., "CONSPICUOUS CONSUMPTION" (a dramatic short) and "WILD WATER" (about the United States kayak team). He worked as cameraman for ABC Sports in Europe (more kayaking), as a skiing cameraman, and on parts of the "AMERICAN ADVENTURE" series, before joining Vision Associates five years ago. Recently he has shot political films for the Muskie Senatorial campaign, the Carter-Ford race (for the U.S.I.A.), a CLIO Award-winning spot for "SHOGUN", and a dramatic film on doing business in Japan.)

### PHOTOGRAPHING "WASHINGTON: BEHIND CLOSED DOORS"

Continued from Page 1145

that you wouldn't do on a stage, and to do them in different ways. You have the luxury of working with all kinds of equipment on a stage, but when you work on location you go there with a handful of lights and half the equipment you need. Of course, you're still expected to do the same job that you would do on the stage, but it's handled differently. You work with different types of lights — and a different attitude.

For example, if you were shooting a daylight sequence in a hotel suite on a stage, you would use all incandescent light of the type you could control very precisely. But if you were shooting that same sequence in an actual hotel suite, you would have to use a whole different series of lamps with "blue" light for a daylight balance to match the light coming in from outside — and most of those lamps don't put out light that is really controllable. I'm speaking now of nine-lights and other tungsten-halogen sources, as compared with 10k's, for example.

The nine-lights have three panels of lamps and you can use one panel for the front, one for the left side and the other for the right side, but the lamps don't penetrate back far enough to light the walls or the people in the background. On "WASHINGTON: BEHIND CLOSED DOORS", as well as on other recent location projects, I've resorted to hiding lights behind things in order to light walls or ceilings or people in the background. You can almost always find things to hide lights behind. Even out on the street you can hide them behind ashcans or telephone poles. The smaller units, like the Lowel-Lights, are very easy to hide.

The lamps used for daylight balance in the nine-lights have dichroic coatings which tend to fade and go yellow after awhile, although not as badly as they used to. But I don't let

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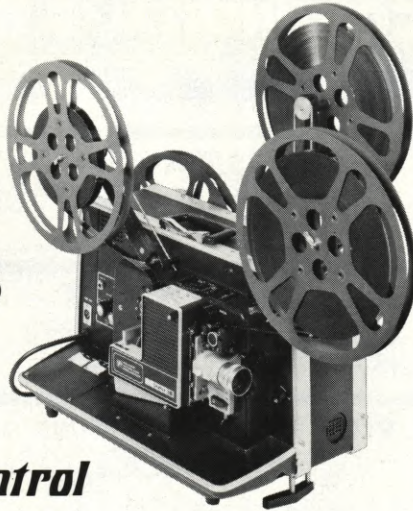
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them throw those lamps away when they start going yellowish. They save them for a time when we are shooting a sequence in the late afternoon when the sun is down low. If you used new lamps for such a sequence, the faces would go pure white, but if you use the yellowish lamps that would have been thrown away, they are just warm enough to make the faces look realistic in the late afternoon light. If the overall color temperature is off a bit, the lab can correct it, as long as it's consistent. The lab people can handle that kind of problem so much better than we can. There are so many things they can do.

We had quite a bit of night exterior shooting on "WASHINGTON: BEHIND CLOSED DOORS", trying to make the side streets of Los Angeles look like those of Washington, D.C. or the outlying towns, and I was fortunate enough to have high-speed lenses available. In a few cases I had to push a stop or two stops, but I don't particularly care for that. I would rather work in as low a key as I can and underexpose it a stop without pushing it. Of course, everybody pushes now and it comes out pretty well. But I guess I'm from the old school. I don't believe too much in pushing, if I can get the result some other way. ■

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**WILLIAM CLOTHIER SEMINAR**  
Continued from Page 1161

good day-for-night for "SOUTH PACIFIC" and Giff told me they had put a lot of green into it, which gave a good effect. But in Monument Valley, everything is red. I had red hills, red men, red sand and red rocks. And a blue sky. When it came time to shoot it, Ford called me over to where he was sitting in his chair, chewing on his handkerchief, as he always did, with a patch over his eye, and he said, "I'm worried about shooting this stuff day-for-night." I said, "It's a little late, isn't it?" "Well," he said, "what are you going to do about it?" I said, "Just let me alone. I think I know how to handle it, and if you'll let me alone, it'll be all right." He said, "Okay." For three days we worked there and the Old Man never bothered me, never said a word. I had to build goboes to make shadows, in order to get people in the foreground with shadows on them. And wherever I had a fire, I put it in a dark corner, so that you could see the flames. I used strong cross lights and back light. Then Giff Chamberlain took it into the lab and removed a lot of the red by printing it on the cold side and using more green than blue. And in that way, we managed to do the sequence, and it worked out pretty well.

**QUESTION: How much did you under-expose?**

*CLOTHIER: Between a stop and a half and two stops — somewhere in that area. If you've got a long shot, you go down maybe two stops. But if it's in close, maybe a stop and a quarter or a stop and a half.*

**QUESTION: Did you do anything to the sky?**

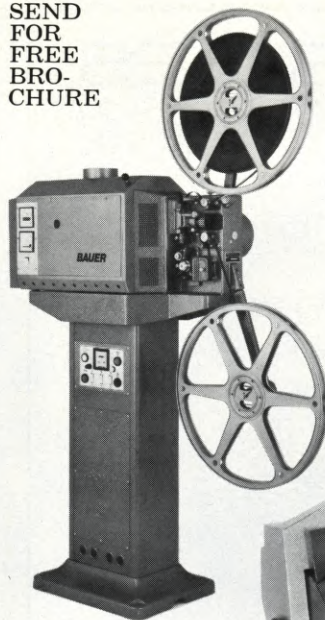
*CLOTHIER: Just stayed away from it as much as I could. I think there was one shot that had a deep blue sky in it, but it wasn't bad. And I think I brought the scrim down over the top of the frame to hold the sky back.*

**QUESTION: Can you tell us more about the scrim that you used?**

*CLOTHIER: It was a thin black net of the type we've always used on lights. You just bring it in and throw a shadow on it to keep the sun from hitting it.*

**QUESTION: There was a shot in the canyon that started in bright sunlight. Then you panned to the left and the area was in complete shade. There must have been about three stops**

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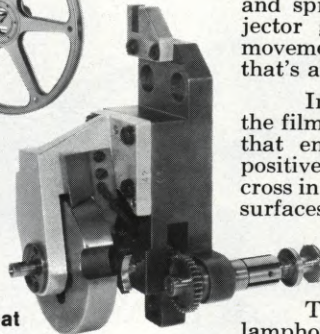
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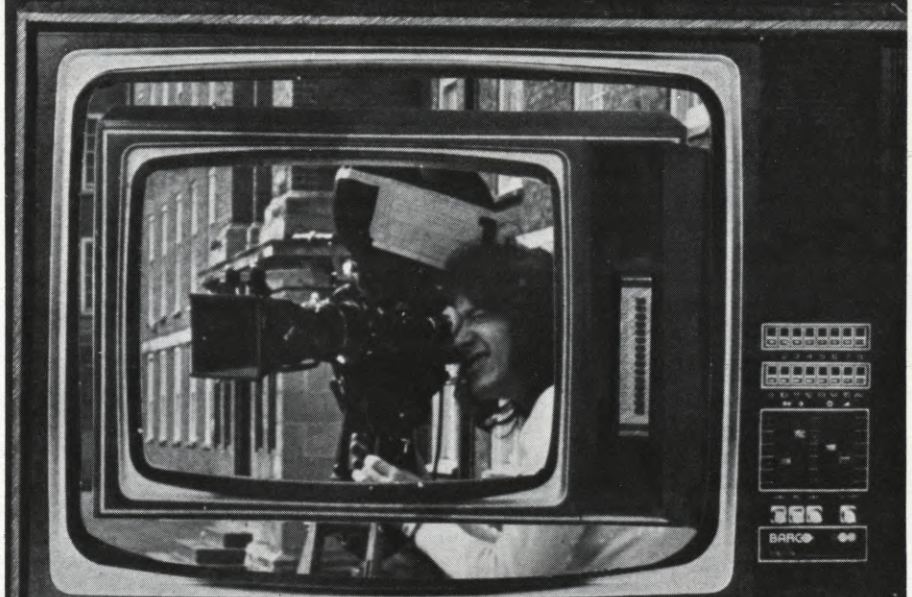


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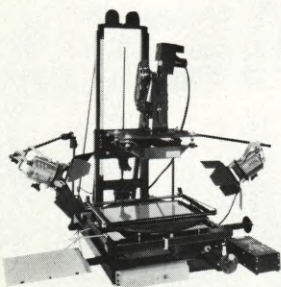
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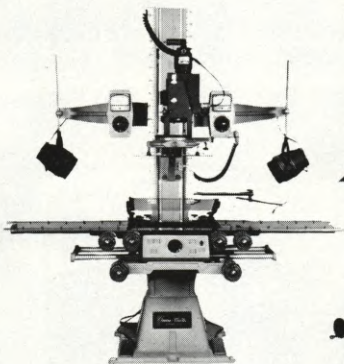
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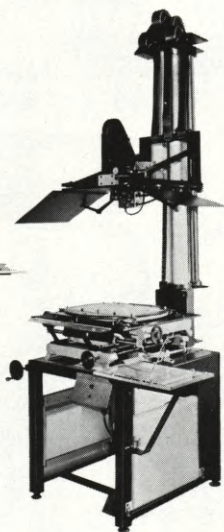
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difference. I was wondering why you didn't use any booster light when you came around.

*CLOTHIER: With the daylight out there, if you had a hundred arcs, you couldn't fill that in. But the desert is like that, so you let it go dark. If you brought reflectors in, you could see it everytime an actor or a buggy went through the reflection.*

**SCHWARTZ: That's the name of the game. Don't light everything. It makes it more interesting if people go in and out of light.**

*CLOTHIER: That's right. Let it go black. You need some blacks in a picture.*

**QUESTION: Did you open up when you went into the shadow?**

*CLOTHIER: I probably did — maybe a stop. Maybe I even cut the shutter to begin with and then opened it up in the shade. It was pretty dark in the shadows, but you could see detail in there, so I didn't object to it.*

**QUESTION: To what degree have you had control over what the final print looked like?**

*CLOTHIER: If I'm available, I always look at the answer print and make changes with the lab. I've made all the films for John Wayne's company and I have a free hand there. I can say, "I don't like this." Then Technicolor will take the reel and do it over and over again until it's the way I want it. Then, if it's bad, it's my fault. There are times, of course, when it just isn't possible to get the effect you want. Sometimes it's a matter of time pressure and sometimes the light changes on you. You start a sequence and it goes wrong throughout the day. And maybe you'll come back the next day and you've got overcast. Today it costs \$40,000 or \$50,000 a day to operate a picture company. You can't say, "Well, we won't shoot today." That doesn't work very well. So you've got to figure out something. You go inside and work, or you shoot closeups and hold back on your long shots until you get better weather.*

**QUESTION: I noticed that in lighting interiors, you went for reasonably strong shadows. In lighting for color, do you use a lot of diffusion on key lights — spun glass or whatever?**

*CLOTHIER: You have to work to a certain key, whether you're using arcs or incandescent lamps, and you pull your lamps down to that key — say, 400 foot-*

candles at  $f/4$ , maybe. When you're lighting a set, you scrim the light down with goboes. You get the effects on the walls that you want. You have to build your background, but keep it lower in intensity than your faces. If you've got 400 footcandles on the faces, you keep the background down to maybe 275 footcandles. And then you get some dark shadows, where you have practically no light. Again, this is part of composition, too. You compose with a highlight here and a shadow over there. As far as softening them down is concerned, that doesn't soften the light. All that a scrim does is hold back the light.

**QUESTION:** I'm not talking about a scrim. I'm talking about something that spreads the source of light — diffusion.

**SCHWARTZ:** I think he's talking about the style some of the cameramen are using, in which they employ more soft-light units or put more diffusion in front of the lamps to spread out the light. That's mostly a matter of style. Different cameramen have different styles and different pictures call for different techniques. And you have to know all of them.

**QUESTION:** With all that dust on the desert, what kind of care and maintenance did you use on the cameras?

**CLOTHIER:** We always had a camera mechanic who would come on the set late in the afternoon and then work probably until midnight on the cameras.

**QUESTION:** I was concerned more about the lens. Did you have to cover the lens after every shot, or what?

**CLOTHIER:** No, you'd shoot through the dust. Dust doesn't hurt the lens. You could pile a quarter of an inch of dust on the lens and it might soften the image a bit, but sometimes you get a good effect that way. I have never seen enough dust on a lens to change the situation photographically, and I've made western pictures all my life. I've had horses run over me and everything else, with the dust so thick it blocks out the picture. But when it was all over, it never hurt the lens any. You could just take a camel's hair brush and wipe it off, and that would be the end of it.

**QUESTION:** You worked with William Wellman on several pictures. What was his approach to photography?

**CLOTHIER:** Wellman liked a camera-

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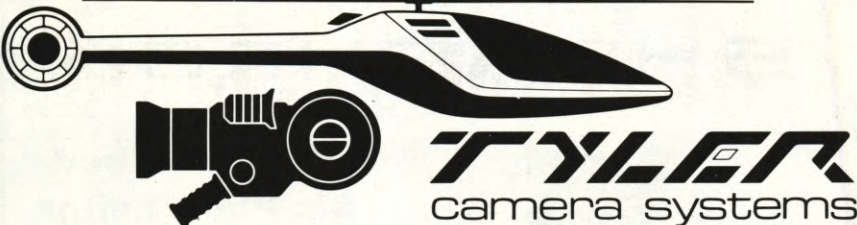


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man who was willing to try something new. He didn't go by the book. He liked a guy who was willing to take a chance. He was a great man. Wellman was a good deal like Ford. He had a different style, but he was a good deal like him in many ways.

**QUESTION: Didn't he believe in holding down the color in the camera, so that there was practically no color on the screen?**

*CLOTHIER: For certain subjects, yes. We made one picture that didn't have any color in it to speak of, but the lab had nothing to do with that. It was the way we shot it. The people wore gray clothes. The food on the table was gray. All the furniture was in gray tones. So we had no color and I must say that it was a very interesting effect. All you saw was the color of people's eyes. Of course, Jack Warner raised the devil. He said, "I'm spending \$500,000 for color and there's no color in this picture!" So we got that message, and Wellman said, "This is exactly what I want and I don't care what Jack Warner wants." So about a week later, Jack Warner sent a telegram to Bill Wellman and Bill Clothier, and it said, "I realize what you gentlemen are doing now and I agree with it 100%." But he didn't like it at all when he saw the first day's rushes.*

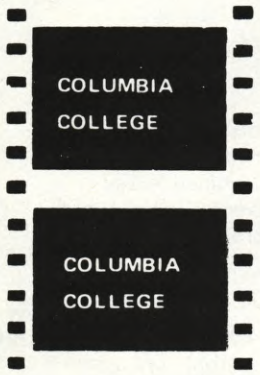
**QUESTION: When you see your photography on the screen, do you ever wish that you could shoot certain scenes over again?**

*CLOTHIER: I'll answer your question this way: in all of the years that I've been in the business, I've only made one shot that I felt I couldn't improve on. I think that if you have any imagination, you can see a scene of yours on the screen and say, "Gee, this would have been better if I'd done this or brought in a little more cross light or a little less back light or moved that table over a bit." So I think you can improve on anything you ever do. I've always felt that I could.*

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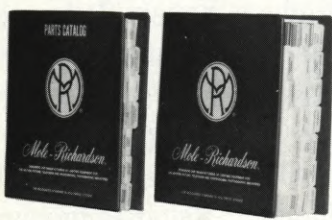
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Before landing in Saltillo, we were informed there was a large welcoming committee of children waiting for us at the airport. So Dick and I loaded a fresh magazine, got the portable light ready and began shooting as the door opened. Nobody was prepared for what happened. Hundreds of little brown faces came surging towards the plane. We were immediately engulfed in a sea of miniature humanity struggling for a better position to receive the coloring books and buttons that were literally being thrown off the plane. Shooting film in a situation like that can only be compared with going down a one-way street the wrong way. You generally survive, but you wonder how. With the arrival festivities drawing to a close, the passengers and crew were whisked away in VW busses to the hotel to await word on the progress of the caravan and Mr. Daly. To no one's surprise, there was no information.

That same day, Mickey and Augie flagged down the motor home and climbed atop its roof to film a sunset behind silhouetted giraffes. By the time we were up with the gear, the animals were out of sight heading for Laredo. As it takes awhile for the motor home to catch up, Raymond hit 60 mph with us on the roof lying flat on our stomachs holding onto the gear and each other. I kept looking at the sun sink in the West while Augie kept looking at me with that expression of "What the hell are we doing up here?" The sun was getting lower and no animals, but after 10 minutes of Bound for Glory type traveling, there in the distance were two long craning necks. Once in line of sight, we made contact with the CBs and the transporters slowed. We stood, set the tripod with the Eclair and made the shot just before the sun hit the horizon for the last time for Phyllis and Luis in the U.S.

We arrived in the border town of Laredo about 9:30 P.M., where our new police escort met us. Because of the traffic lights, low wires, and cars, we slowed to a snail's pace. This was the real beginning of people coming out of stores and homes to see all this spectacle. Kids were jumping on the back of the giraffe truck and running along side. I pulled the 10-150 lens off the camera and put on the Zeiss T/1.3. Augie had Leon Leopard turn on his wireless mike so we could record in sync the maneuverings and orders he was giving to his driver. It took an hour to pass through Laredo to the Border,

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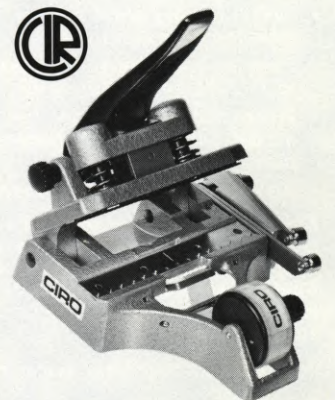
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where everything had been pre-arranged with the authorities this time, including the quarantine procedures, the camera registration, and our personal visas. Crossing the Rio Grande, we were met with large illuminated letters spelling "Mexico", and lit below that was the national emblem. It was beautiful! We filmed all the customs procedures throughout their offices under fluorescents. All the night footage was pushed one stop and sent to TVC Labs in New York for their Chem-Tone process. Our dailies were all timed and sent back looking terrific!

When they were reunited for the first time in four days, both film crews had a chance over breakfast in Saltillo to talk about their experiences. After some complaining and laughing, everyone headed for the area where the giraffe cages were being decorated with the final touches. There, Glen shot some news film which was sent back to San Francisco and aired the same night. For the first time in four days something happened on schedule. As the caravan began to make its way towards the center of town and rounded onto "Main St.", there before us were 80,000 people cheering, waving signs reading "Bienvenidos, Ed," with kids running and jumping on the back of the animal truck, dogs barking, the air filled with the excitement of a grand Mexican parade. We decided we should cover this massive event with Mickey atop the motor home and giraffe truck and Glen running alongside with the people. Phyllis and Luis were catching it all looking from both sides of their pens. At one point, Glen asked Dick to run ahead and record a large band which was playing on a flatbed truck. Oblivious to Augie recording just on the other side, Dick also dutifully recorded one whole rendition of the Mexican Hat Dance. Maybe we can get a stereo print! As the parade drew to a close Dick and Glen became separated from our equipment car. They figured they would jump on the motor home and ride back to the hotel. To their surprise, the whole damned caravan kept rolling right down the highway towards Mexico City with Augie and Mickey hanging on for dear life. We wondered if we would ever meet again!

We were back on the road again to film the final leg of the trip to Mexico City. It was that afternoon that I decided to use the 600mm lens for the first time. Piling everything I thought we needed into the station wagon, we roared off down the highway at speeds approaching 100 mph to get far ahead of the caravan. I decided to begin putting some of the lens mount together in the

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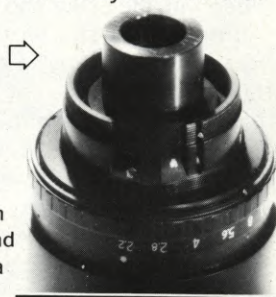
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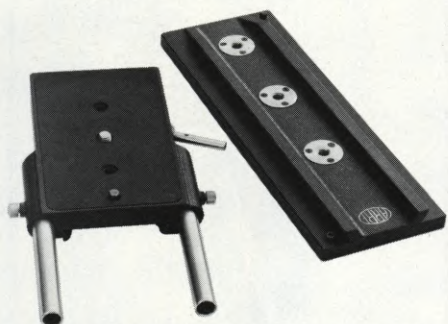
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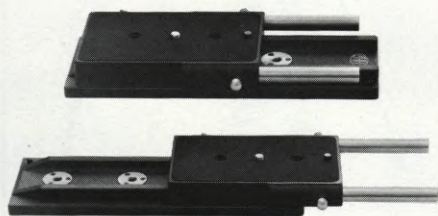
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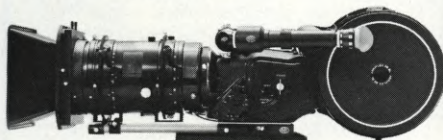


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car to save time. After we thought we'd gone far enough and had a good level stretch of road, we stopped, and Augie and I jumped out and scrambled to put up the tripod and lens mount. I then discovered that the Arri-to-Eclair adapter was missing. In an absolute panic I tore through every case in the wagon, but to no avail. Sally yelled that the caravan was coming so we decided to stick the lens in the Eclair cavity with Augie holding it, and shoot. By this time the giraffes were right on top of us, and as I sighted through the viewfinder to begin shooting I realized that in the panic I'd forgotten to level the tripod. So the first shot was a little "stylized", shall we say. Fortunately there was plenty of daylight left, so we broke everything down, jumped back in the wagon, caught up with the caravan, passed them hitting 90 mph and, looking back at the police escort (a fantasy of Sally's fulfilled), drove on for another set-up. This time we wrapped camera tape around the lens barrel so it would fit snugly into the camera cavity and tried again. It seemed to be sharp, and I made the shot but didn't rest easy until I saw the dailies. The shot worked and turned out to be perfectly acceptable.

The rest of the trip was relatively uneventful. The giraffes appeared to be healthy and in good spirits, which was more than could be said for the people involved. After four straight days of traveling and shooting, everyone was exhausted. Because of Mr. Daly's delayed schedule, all the festivities in Mexico City were cancelled, except for a last-night party. The giraffes were taken directly to the zoo and the crew went off to find the Camino Real Hotel at five in the morning. After checking in and showering we reported to the zoo for the uncrating and entry of the giraffes into their new home. But in keeping with the whole project, Phyllis had already been unloaded, and we arrived in barely enough time to shoot Luis being unloaded and springing out of his cage to meet his waiting mate.

Later that night the second crew arrived in town. Over a pitcher of cold Margaritas everyone decided that in spite of all the headaches and chaos, it had been a unique and very exhilarating experience. Sixteen thousand feet of film had been exposed during the two trips, to be edited into what would be an interesting and exciting half-hour documentary for Mexican television and World Airways.

As a final touch to all of this, Phyllis is pregnant. Her baby is due in December, and in a few months there will be three giraffes in Mexico City. ■

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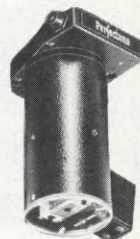
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WITH KEN RUSSELL  
Continued from Page 1165

simply gathering background material?

*RUSSELL: We did indeed intend to shoot it in Hollywood. When I first went to Hollywood, however, it was to announce the film, because other films were being planned about Valentino and we felt that if we announced ours it might put the brakes on a few of the others, which it actually seemed to do. At that time I hadn't quite finished the script, but I knew that it was a Hollywood story and should be shot in Hollywood. While there, I continued working on the script and, at the same time, I was looking at the work of various cinematographers, art directors and so forth because, naturally, I would need an American crew. The fact is that I didn't see any work of art directors that I liked at all. I may have been unfortunate, but I just didn't see anything which quite suited the way I felt. There was one film with Barbra Streisand, "THE WAY WE WERE", which I took to be a 1960's film — and then found that it was supposed to be 1935, then 1943 or something. Well, there was no way you could tell that from the costumes or art direction. I realized that "VALENTINO" would be a period film and that I would have to get the period exactly right. I know there are lots of art directors in America who would be very good at it, but I didn't happen to see the work of any that I liked.*

### QUESTION: What about cameramen?

*RUSSELL: It was the same with them. Although there are indeed many very competent cameramen in Hollywood, I only met one who I felt would be right for my kind of filming. His name was Jordan Cronenweth and he could do any style of photography: the ultra-romantic, hand-held, grainy, rough and tough, anything. He seemed to be one of the few cameramen who could be presented with any kind of exterior and handle it well. I saw a film of his called "ZANDY'S BRIDE" and every shot (which seemed to me that he had very little control over) he was able to invest with an amazing atmosphere that I found to be unique. I would have been quite content to do the film with him, but he was busy on another film. That was before we had a star anyway, and by the time I had completed the script I found that it was almost all interiors. That being the case, it suddenly struck me that I could do the film better in England than in America. For one thing,*

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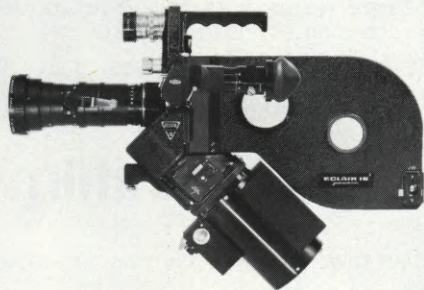
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*I didn't actually know the crew people well enough to gather those around me that I would need to do this particular film — whereas, if I were doing a contemporary American film, there would be no problem. (In fact, I nearly did one. I tried to fit it in between that visit and this project, but I didn't have time.) All in all, I thought I could do it better in England, since there were so few exteriors. I had looked for locations around Hollywood, but it's all built up now. I was sure we could find better exteriors in Spain, and we did. They seemed to be more Hollywood than Hollywood itself, but not built up. They were the same as in the 1920's. As far as I'm concerned, it was the right decision.*

**QUESTION:** I noticed on the set that you have one of the original Dead End Kids in the cast, Huntz Hall. Since this was a totally American picture in content, what did you do for actors?

*RUSSELL:* We have used mostly American actors and I was amazed at how many of them are working in England full time. The man who plays the role of the Lighting Cameraman in our film came over as Officer Krupke in "WEST SIDE STORY" 20 years ago and he's been here ever since, and a lot of others have, too. There is some very good American talent here, especially for character roles, very good indeed. Then, of course, we brought various people over from America specifically for this film.

**QUESTION:** Did you do any actual casting while you were in Hollywood?

*RUSSELL:* What struck me when I held casting sessions in America was that I was disappointed in the people they brought in. They seemed such stereotyped types. If I wanted a business manager, the people they sent over were right off TV and had played nothing but business managers. I got rather tired of seeing sort of type-cast characters. There were never any surprises. There was never anyone who walked in and made me think, "Gosh, well, I hadn't quite thought of anyone like you, but you're marvelous!" I finally asked the casting manager if he had the equivalent of the British Spotlight (which is the theatre guide of all our actors) and he brought out a book that had sort of postage stamp-size pictures in it. I started flicking through it and found the people I liked, those who struck me as being interesting and cut a bit different from the others. They were mostly people I had seen in 1930

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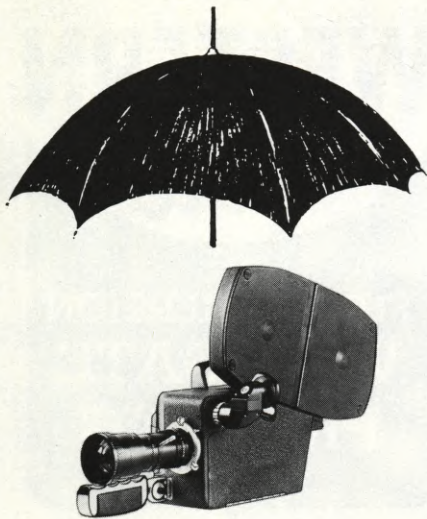
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and 1940 and thought were either dead and buried or pensioned off or whatever. I got quite a few of those people and some of them gave me a great laugh. The Ritz Brothers came and did an amazing song and dance act which was superb. I wish I could have used them. A case in point was Huntz Hall. I just listened to him speaking and knew he was right. He grew up in Hollywood and said that he'd acted with Nazimova at the age of 18 months, when she was on the stage. (He was a baby and was brought on in a pram.) He also acted with her when he was six and she boxed his ears. He seemed to be exactly the right character to play the head of the Lasky-Famous Players Studio, and he brought a great atmosphere of Hollywood along with him when he came here.

**QUESTION:** You did "LISZTMANIA" with Peter Suschitzky as Lighting Cameraman. Can you describe your method of working with him on this film, as compared to that one, since they differ so greatly in photographic style?

*RUSSELL: We're actually working in much the same way, in so far as we discuss each scene and the effect we want and then he just goes and does it. Of course, I keep an eye on him, because I'm very photography conscious. I photographed three films myself (amateur films they were, but they got me started professionally), and I was also a stills cameraman and all that. I always take a great interest in the lighting. When I first started I was more interested in the lighting and the camerawork than in the actors, but I think I'm a bit more balanced now and I realize that the actors can't act by themselves and so need a bit of guidance. I can't make an actor act if he can't act. When he comes in, I can't wave a magic wand and make him act. I think it's a question of creating the right atmosphere for actors and explaining things to them — and hoping for the best. But I think that the whole mise en scene, if you like, of the film is that if the lighting is wrong or the camera operating is wrong, the result will be wrong. It's not just down to the acting; it's all the ingredients. It's like when you are doing a painting; it's the pigments and the oils and the brushes and the canvas, not just one thing, that create the final effect. In the same way, I think one's got to have a grasp over the entire film.*

**QUESTION:** Film directors vary greatly in the ways they "cover" the subject

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matter of the script. Some (like the late George Stevens) shoot a scene in its entirety from every possible angle, while others (like Ford and Hitchcock) shoot only the bits and pieces that will actually be needed in the final cut. How thoroughly do you cover yourself in shooting?

*RUSSELL: I shoot my films in a way whereby, generally, each sequence is self-contained, and often there are no cutaways; they are just joined together one shot after another. So the editor just tops and tails them and sticks them together, if you like. Now and again I might take maybe three or four shots which could go in to break up any sort of difficulty, but I am not a believer in long-shot, mid-shot and two closeups. I never do that — ever. I generally conceive a sequence as one flowing sort of choreographic pattern. I suppose that having been a dancer myself (trained as a dancer for five years, and then danced for three or four years with various ballet companies and musicals, including "ANNIE GET YOUR GUN"), I do see things in terms of movement. I see my films as sort of ballets of the movements of actors and camera and extras and colors — and I think that this does give the audience a sense of involvement. I don't mean using a busy camera for its own sake; I think it should all be constructed to a definite purpose and build up to a definite end. Some sequences should be very legato and flowing, while others should be very staccato — so that the audience never quite knows what it is getting. That's what I like. "TOMMY" was a case in point. There were various moments in that (the Marilyn Monroe sequence, for instance) which I covered a great deal. We cut, cut, cut, cut. It was an editor's dream — or nightmare, depending upon which way you look at it — and the same was true in the Pinball Wizard sequence. But then there were other sequences where there was a sort of flowing thing — a sequence in Tommy's house, for example, which was a very calming sort of number. He just sort of invited people into his home, and the sequence was made up of flowing legato shots.*

**QUESTION: I notice that you repeatedly use musical terms in describing certain cinematic analogies. How importantly does music enter into your approach to filming?**

*RUSSELL: I play a lot of music when I write my scripts. I generally write them all myself, but I needed some help with*

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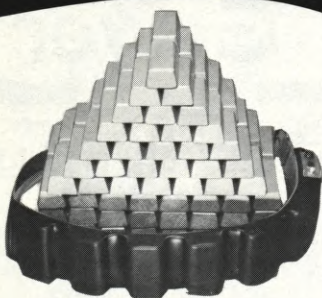
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the dialogue on this one, since I'm not an American. Although, oddly enough, the chap who offered to write the American dialogue (and who said I wrote the most atrocious dialogue he'd ever read), when it came to reading what I had written, hardly changed a thing. He was most amazed and so was I. It suddenly struck me (and him) that the reason my dialogue for this film was better than my dialogue for English films was that I was brought up on American films. In the 30's and 40's I probably went every day to the cinema, and so I saw almost every "A" and "B" film that was made in America from 1930 to 1946. As a result, I had absorbed the way Americans speak and, since this was a 1920's film and, in the 30's they were still using more or less the same slang as in that period, I was able to write this dialogue. I couldn't possibly write modern American dialogue; it would sound ludicrous.

**QUESTION: The casting of Nureyev, a Russian ballet dancer, as Valentino, a Latin screen lover, is unusual, to say the least. Is it working out the way you hoped it would?**

**RUSSELL:** Yes, I think so — because it's sort of a case of a myth playing a myth. We always were up against it in trying to find someone to play this role. We did see Al Pacino, but I didn't think he was quite right, and he didn't like the script anyway, so that was two good reasons why he shouldn't be in it. He was a bit short, really, and while he's a brilliant actor, he didn't quite have the sort of charisma that was needed to play a legend. One could have found an Italian waiter who looked like Valentino, but he would have been just an Italian waiter dressed up, because whereas Italian waiters in 1920 may have had some magic, they don't in this day and age. There are too many of them about, especially in London. There are more Italian waiters than English waiters. So I had to think of something new. First off, since we have Nijinsky in the film, I thought of Nureyev to play that role, and that's all. When we contacted him, he agreed to play Nijinsky. Then we thought, "We're mad; he should be playing the lead!" Actually, he's very similar to Valentino. He's a myth. People don't know a great deal about him. He's before the public every day of his life and no one has heard him speak — and so, he's a living legend whom nobody knows. It seemed too much of a coincidence to let slip by and, oddly enough, when I spoke to him about it and he said he'd do it, he seemed to know more about Valentino than I would have imagined. I asked

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him why and he said that he had been asked to play the role a year earlier. I said, "Why didn't you do it?" And he said, "The director died." It was the chap who made "THE BICYCLE THIEF", the very famous Italian director, Vittorio DeSica.

**QUESTION: Getting back to the technical side — I have been told that you never look at rushes. Is that true?**

*RUSSELL: I used to, but I found that there were so many small fiddling details that annoyed me that I kept wishing that I could do them all over again. Also, viewing rushes sort of slightly distracts me from the work in hand, and I find that since there are never enough hours in the day to do what you have to do, it's no good worrying over things that you can't change — so there is no point to it. I'll see it if there is something drastically wrong, and now I have this video thing, as you know, so I see every take that we do. I would rather let my editor cope with it. As I've said, he hasn't got much option; he can only cut the scenes a certain way anyway, although he can fiddle about a bit.*

**QUESTION: But what about spotting things that may actually be wrong?**

*RUSSELL: Well, I found with "TOMMY" and "MAHLER" in particular, that if I saw them all put together at the end in a sort of rough fine cut, I could immediately put my finger on what was wrong; whereas, if I had seen rushes over and over again fifteen times, out of context to the filming, and then seen a rough cut, my judgment might have been blunted. Of course, one can easily sort it out, but there is nothing like seeing something brand new for the first time. Apart from actual disasters, I don't think there is much to be gained from looking at rushes, although, for a time, I thought there was a sort of cowardice about not seeing them. I think seeing the rushes inhibits you, actually, and you also get a slightly false impression, because some things you like very much, but in the finished film they are either cut to ribbons and you have to throw them away, or you get too attached to certain scenes. It's better to let the editor have a pretty free hand and chop things down a bit. You can always put them back in — but you don't, of course. In making "WOMEN IN LOVE", which was quite a confusing film, we worked on it as we went along and cut and re-cut and cut and re-cut, but I think that if I'd just looked at it when it was finished, the first rough*

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Owner: DNA.

Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities: DNA.

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 Video Tape Laboratories



(Above) Electrostatically-clean Negative Conforming Room

(Left) Sony Professional D-100 Video Tape Cassette Duplicators