

American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

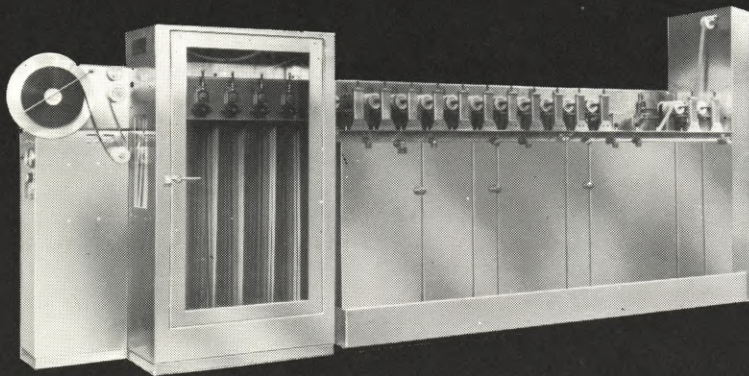
JANUARY 1977 / ONE DOLLAR



THE FILMING OF
DINO DE LAURENTIIS'

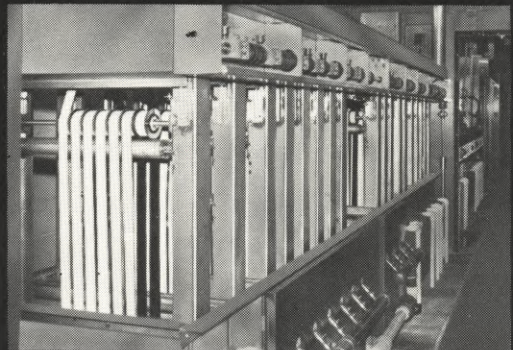
King Kong

The Standard of Excellence!



Typical medium size
Filmline processor available
in speeds from 7-200, f.p.m.

One of five 320 f.p.m. Filmline
Color processors installed at
Technicolor, Hollywood, California.



Micro-Demand is a patented exclusively different concept in demand drive film transport systems.

Micro-Demand is a dynamically tension-controlled friction film transport system that operates effectively at minimum tension and with complete reliability. When used with Filmline Feather-Touch film spool "tires" it transports 35mm, 16mm and single strand 8mm film interchangeably and without adjustments even when these films are spliced back-to-back.

Once optimum tensions are set there is no need for further adjustments, yet the design allows easy and rapid, dynamic adjustment of film tension while the machine is running.

Micro-Demand has a broad band of self-compensation, is of functional construction and requires minimum maintenance.

There are no fragile, plastic spring bushings, no wobble rollers. No elaborate articulations of any type. Just sound engineering and the highest quality materials and workmanship.

No other competitive processor or film transport system commercially available has ever achieved the operational speeds and proven reliability of Filmline Micro-Demand Processors.

SIGNIFICANT MICRO-DEMAND FEATURES:

- | | | |
|----------------------|--|--|
| Versatility | Any speed, any process. | <input type="checkbox"/> Push-Button operation, and reliability allows operator to perform other functions while the machine is running! |
| Reliability | Rugged construction, quality materials and sound engineering. Always ready when you are! | <input type="checkbox"/> Automatic compensation for elongation and contraction of film during processing cycle. |
| Flexibility | Any format 35mm, 35/32mm (1-3), 35/32mm (1-4), 35mm 5R S8, 16mm — 70MM-105MM etc. | <input type="checkbox"/> Virtually eliminates all film breakage, scratches and static marks. |
| Dependability | Can stand the gaff of long, continuous, top speed runs with "Zero-down-time." | <input type="checkbox"/> All film spools use standard bearings or bushings. |
| Credibility | Ask the labs who own them. Most of them own not one but several. | <input type="checkbox"/> Entire upper film shaft/roller assemblies easily removed. No tools needed. |
| Maintenance | Exclusive Maintenance Monitor tells when and where the machine needs attention. Significant savings assured. | <input type="checkbox"/> Stainless steel construction used throughout. |
| Performance | Every Filmline machine is backed by a superb performance record compiled in over 25 years of continuous service to the industry. Twenty five years in the forefront of processing machine design and innovation. | <input type="checkbox"/> Proper operation can be determined at a glance, while machine is running. |
| | | <input type="checkbox"/> Submerged developer racks. |
| | | <input type="checkbox"/> Pumps for recirculation and agitation of all required systems. |
| | | <input type="checkbox"/> Professional spray bars. |
| | | <input type="checkbox"/> In-line filters on all required systems. |
| | | <input type="checkbox"/> Professional air and wiper squeegees. |
| | | <input type="checkbox"/> Temp-Guard Temperature Control System. Thermistor sensing and transistorized controller. |
| | | <input type="checkbox"/> Film-Guard dry box with dual heat input and dial thermometer. |
| | | <input type="checkbox"/> Individual switches for all control functions. |

"Filmline Engineering and Consulting Services for Complete Laboratories are Available Worldwide."

Filmline Continuous Film Processors are used throughout the world by: Deluxe-General, Technicolor, Inc., Capital Film Labs, Byron Motion Pictures, TVC Labs., Movielab, Radiant Laboratories, Guffanti Labs, Precision Film Labs, Bellevue-Pathé, ABC, CBS, NBC Network TV, NASA, General Motors, RCA, IBM, AEC... and thousands of others.



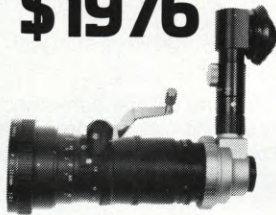
Filmline Corporation, Dept. AJ-77
Milford, Connecticut 06460 — 203-878-2433

Eastern Hemisphere:
BELL & HOWELL, LTD.
ALPERTON HOUSE, BRIDGEWATER RD.
WEMBLEY, MIDDLESEX, ENGLAND
01-902-8816



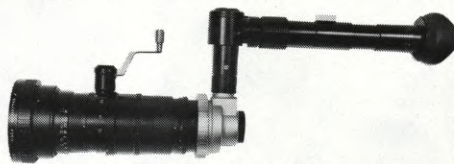
1976 ZOOM LENSES AT 1776 PRICES.

\$1976



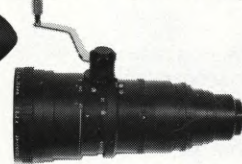
12-120mm F2.2
WITH 1"VF AV30

\$1976



12-120mm F2.2 WITH 7½" VF AVC

\$1976



12-150mm T2.3
WITHOUT VF

1976 ZOOM LENSES AT 1976 PRICES

\$2176



10-150mm T2.3 WITHOUT VF

\$2176



9.5-57mm F1.6 WITHOUT VF

ANGENIEUX ZOOM LENS BICENTENNIAL CELEBRATION

general camera 
corporation

471 Eleventh Avenue, New York, N.Y. 10018 (212) 594-8700 Telex: 14-7136

The first system of its kind, STEADICAM is a unique and revolutionary camera stabilizing system which has been quietly making film history during the course of the past year, breaking new ground in handheld cinematography.

Fully tested—and proven—in numerous film and video productions, STEADICAM has already made its dramatic impact on the filming of major features such as BOUND FOR GLORY (DP Haskell Wexler), MARATHON MAN (DP Conrad Hall), ROCKY (DP James Crabe), THE HERETIC (DP William Fraker), THE CAR (DP Gerald Hirschfeld), MacARTHUR (DP Mario Tosi) and EQUUS (DP Ossie Morris).

Effectively reducing production costs, STEADICAM releases the motion picture camera from the constraints of dollies and tracks, tight interiors, heavy camera platforms—delivering remarkably steady and jitter-free moving shots of dolly-quality smoothness, permitting new kinds of moving shots previously considered impossible!

STEADICAM greatly enhances the creative latitude of the cinematographer and the director. According to Stanley Kubrick, "It should revolutionize the way films are shot."

STEADICAM

The following critical comments about the film ROCKY deal with some of the key sequences that were shot with STEADICAM:

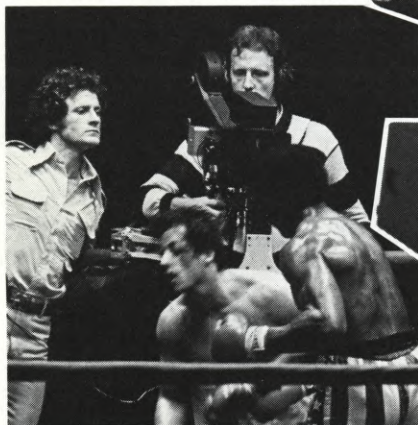
"... Rocky's training, revealing Stallone's own grueling five-month preparation for the part, is fascinating to watch. Thanks to a newly developed body-held camera, cinematographer James Crabe was able (without impossibly costly tracking platforms) to follow Stallone jogging before dawn through all of Philadelphia, a literal opening up which appropriately symbolizes an opening up of Rocky's world and his chances."

Charles Champlin
L.A. Times CALENDAR
November 28, 1976

"... Not only did that last reel include some of the most wildly exciting fight footage ever put on the screen, but it also provided an emotionally gratifying capstone to a picture that is truly an ode to the human spirit... And a final word must be said for James Crabe's incredible camera work—not only his stunning views of Philadelphia's historic monuments, but the squalor of the South Philadelphia slums, two breath-taking swoops up the broad steps of the Philadelphia Art Museum, a protracted run past swinging sides of beef in a meat-packing plant, and, of course, the virtuoso photography of the climactic bout... In many ways, ROCKY is a picture that should make movie history."

Arthur Knight
The Hollywood Reporter
November 5, 1976

Camera Operator Garrett Brown, inventor of the system, is seen using the STEADICAM stabilized camera system to film the dramatic fight sequence in ROCKY. James Crabe was Director of Photography.



The STEADICAM system was developed and is manufactured by Cinema Products Corporation under exclusive world-wide license. Foreign and U.S. patent rights to cover all aspects and applications of the STEADICAM system have been applied for.

The STEADICAM camera stabilizing system is available for purchase or rental.

STEADICAM is available for rental in...

Hollywood:

from Mark Armistead, Cine-Pro, Clairmont-Engel, F&B/Ceco and Universal City Studios

New York City: from Camera Mart and F&B/Ceco

Toronto, Canada: from William F. White

London, England: from Joe Dunton (Cameras)

Paris, France: from François Bogard

Vienna, Austria: from Cine-Service

Tokyo, Japan: from Toyo Cinema

For **purchase**, see your CP authorized dealer, or contact Cinema Products directly.

cinema E products
CORPORATION

Technology in the Service of Creativity

2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 ■ Telex: 69-1339 ■ Cable: Cineveco

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.

JANUARY 1977

Herb A. Lightman
editor

Three Tyler
editorial assistant

Barry Day
production control

Pat Hopper
advertising

Barbara Prevedel
accounting

Gabrielle de Ganges
layout assembly

Patty Caughlin
research

Contributing Editors
Milton Forman
David Samuelson
Sidney B. Solow
Anton Wilson

Editorial Advisory Committee

Lee Garmes, Chairman
Lloyd Ahern
Charles Clarke
Stanley Cortez
Linwood Dunn
George Folsey
William Fraker
Conrad Hall
Sol Halprin
Winton Hoch
Milton Krasner
Ernest Laszlo
William Margulies
Richard Moore
Joseph Ruttenberg

Editorial—Advertising—

Business Offices
1782 North Orange Drive
Hollywood, Calif. 90028
(213) 876-5080

VOL. 58, NO. 1

● **FEATURE ARTICLES**

34 Behind the Scenes of "KING KONG"

36 The Challenges of Photographing "KING KONG"

40 The Producer Talks About His New "KING KONG"

42 Conceiving the Persona of "KING KONG" — in Two Sizes

44 From Towering Inferno to Towering Gorilla

48 Production Design for the New "KING KONG"

51 Constructing a 42-foot Superstar

56 Composite Scenes for "KING KONG" Using the Blue-Screen Technique

60 The Making of the Original "KING KONG"

64 Creating Film Magic for the Original "KING KONG"

66 "KING KONG" — Then and Now

● **DEPARTMENTS**

8 Cinema Workshop

12 What's New

20 The Bookshelf

ON THE COVER: "KING KONG" in all his reincarnated glory stands astride the twin towers of New York's World Trade Center and battles the helicopters attacking him in a scene from the Dino De Laurentiis updated production of the great film classic for Paramount Release. Illustration courtesy of Dino De Laurentiis Productions and Paramount Pictures.

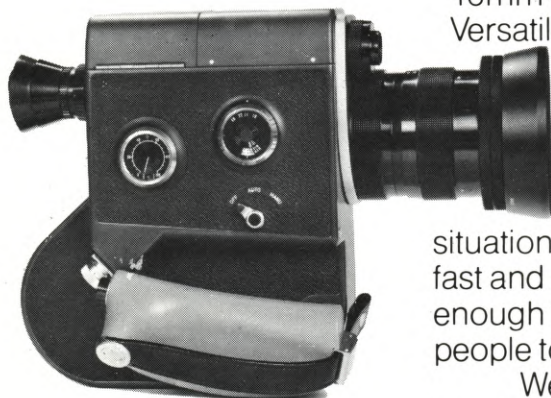
AMERICAN CINEMATOGRAPHER, established 1920, in 58th year of publication, is published monthly in Hollywood by ASC Holding Corp., 1782 North Orange Drive, Hollywood, California 90028, U.S.A. **SUBSCRIPTIONS:** U.S. \$9.00; Canada, foreign, including Pan-American Union, \$10.00 a year (remit International Money Order or other exchange payable in U.S.). **ADVERTISING:** rate card on request to Hollywood office. **CHANGE OF ADDRESS:** notify Hollywood office promptly. Copyright 1977 ASC Holding Corp. Second-class postage paid at Los Angeles, California.

THE EVOLUTION

CANON'S NEW

Ten years ago, you helped us start a legend. And since that time, you've helped it grow. Into a camera that offered increased versatility for news and documentary people... ultimately, into a camera that's equally at home in sports and features, on campus or on location.

In the beginning, you wanted a compact, self-contained, professional 16mm camera.



The original.

Versatile enough to shoot razor-sharp footage in a wide variety of documentary situations. Yet rugged, fast and economical enough for platoons of people to use.

We listened. Well enough to make our original Scoopic the

most popular silent news and documentary camera.

But you wanted more. More creative latitude. A more efficient battery/transport system to put more footage through the camera. And other features, to give you greater flexibility for low-light and animation.

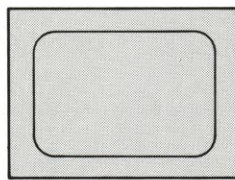
Our answer was the Scoopic 16M, which found its way from news and documentaries onto campuses and into corporations.

Thanks to growing numbers of happy Scoopic users... and a number of remarkable features.

First and foremost was the Macro 12.5-75mm f/1.8 (T2.5) lens that set



Much more than a superb macro.



Larger, brighter viewfinder shows and tells more.

new standards for the state of the art. Besides superior *conventional* capabilities, it introduced *continuous* focusing from under 3½" to infinity. And unique *optical dolly*ing — with constant image size — from a fixed position.

But we didn't stop there: Scoopic 16M offered a brighter finder with built-in T-stop indicator and wider auto-exposure range. For animation and stop-motion, we added a single-frame control, plus an improved



A boon for animation and time-lapse.

frame/footage counter. A redesigned battery/transport system



Built-in battery check ends guesswork.

doubled capacity to 1600' on a single charge. While many other features, including a film feed indicator, inching knob, iris opening switch and battery check circuit, added further convenience.

With no other camera under *twice* the price providing all these features, Scoopic 16M soon became even more popular than its predecessor. But the more filmmakers



OF THE SPECIES.

SCOOPIC 16MS



Sound economy with built-in crystal sync.

discovered about Scoopic, the more they wanted it to do: Could its capacity be increased? What about crystal control and even lower noise for sound? Built-in filtration? And more.

The answer is "yes"

on all counts. And the proof, our new Scoopic 16MS.

For greater capacity, filming sports or features, you can use our 400' magazine adapter, with CP



400' adapter and magazine keeps you in action longer.



Wider wides and tighter telephotos.

or standard Mitchell magazines. All without losing Scoopic's internal 100' capability.

For sync sound, there's an optional built-in, crystal-controlled 24fps—accurate to .003% over -20 to +50°C. And we've reduced noise by more than 3dB, as well. You get a lot more optical versatility, too. In terms of filtration. And focal length.

For quick changes between daylight and artificial lighting, there's a convenient filter holder

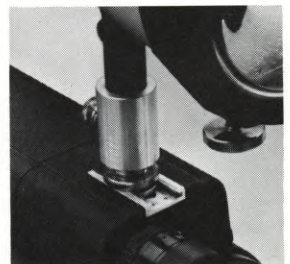
that accepts sheets of gel. And if you'd like wider wides or closer telephotos,

Scoopic will deliver them, with no loss of f-stop. Thanks to an optional snap-on 9mm wide-angle adapter and 112.5mm teleconverter.

There's a lot more to the new Scoopic you helped us design—remote control, sound barney, cold-weather shooting case... even an optional light-mounting stud, to shed more foot candles on the subject. But the best news may be that the entire kit—camera with lens, battery, charger, sunshade, CdS cell hood, 5 gel filter holders, comfort eyepiece, lens cap and deluxe hard case—is still one of the best values on the professional market today. Ask your Canon professional dealer for a demonstration of the Scoopic MS... or contact us for more information.



Easier-to-add, built-in filtration.



A brighter way to carry your lighting.

Canon[®]

Professional Motion Picture Division
 10 Nevada Drive, Lake Success, N.Y. 11040 (516) 488-6700
 123 East Paularino Ave, Costa Mesa, Ca. 92626 (714) 979-6000
 3245 American Drive, Mississauga, Ontario, Canada
 (416) 678-2730

CINEMA WORKSHOP



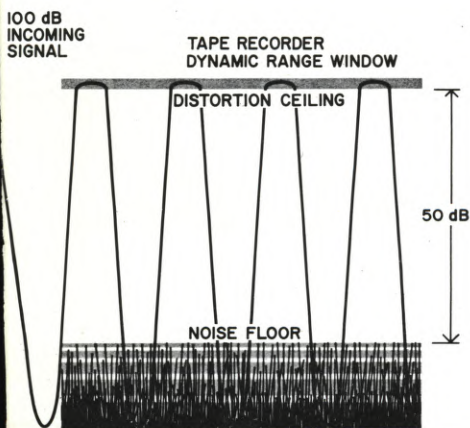
By ANTON WILSON

AUDIO BASICS— NOISE REDUCTION

Over the past few years, it has become more and more common to hear the term "noise reduction" mentioned by professional recordists. Almost every professional recording studio employs some form of signal processing to reduce noise, and even consumer items, such as hi-fidelity cassette decks, almost exclusively employ Dolby B circuitry. Brand names such as "dbx" and Dolby have become household words, and recently dbx has introduced two models of noise reduction units designed specifically for the Nagra SL and Nagra 4.2 respectively. The reasons for this current popularity are not as simple as the term "noise reduction" may suggest.

Each application has a different purpose for such circuitry, and, moreover, these circuits do more than just reduce noise. Any discussion of noise reduction must begin with the concept of "dynamic range". Cinematographers should be familiar with this concept as it is identical to the latitude or luminance ratio of a film stock. Most film stocks have a luminance ratio of 6 or 7 stops. This is in essence a "window" — only objects within this range will be recorded on the film. All objects brighter than this range will be burned

FIGURE 1 — In this illustration, the recording tape has a dynamic range of 50 dB. Between tape saturation (maximum recorded signal) and the residual noise, the tape can accept a program with a maximum range of 50 dB. It can be seen in this example that a program with a range in excess of this 50 dB (in this instance, the program has a 100 dB range) will not "fit" on the tape. The loud passages will distort, and the softest passages will be lost in the noise.



out and have no detail, and all objects below this range will be black and indistinguishable on the film. By changing ASA or "T" stop, this "window" can be moved up or down to favor lighter or darker objects; but the width of the "window", the 6 or 7 stops it can distinguish, remains constant. This is the "dynamic range" of the film.

Magnetic recording tape is identical in this concept. The upper end is limited by tape saturation. Once the signal exceeds this level, it will be distorted. On the lower end, the tape recording process has a residual noise level usually referred to as "tape hiss". A signal must be substantially above this inherent noise to be useable.

Once again we have a "window" situation: a ceiling of distortion and a floor of noise. The signal must be restricted to fit within these limits, the dynamic range of the tape.

The cinematographer is always confronting the problem of "dynamic range". Quite often a scene exceeds the luminance ratio of the film, and reflectors and fill light must be employed to bring up the low end or compress the range of the scene to that of the film. The same problem exists with sound recording.

Figure 1 represents a typical situation. The subject being recorded might be a symphony orchestra. This is an extreme situation where the difference between a flute solo and a fortissimo of the entire orchestra can be on the order of 100 dB. The problem is the tape has a range of only 50 dB. The recordist can set the level to favor either the loud or soft portions, but the range remains at 50dB. From Figure 1, it can be seen that the loud peaks will be clipped off, causing considerable distortion and the softest passages will be totally lost in the residual noise. In addition, the reproduced signal will only have a range of 50 dB between the loudest and softest passages, hardly the equivalent of the original 100 dB.

Like the cinematographer, the recordist would like to employ some means of reducing the dynamic range of his subject so that it will fit within the limits of his tape. Moreover, even if the subject had had a range of 50 dB, the

softest passages would still be so close to the residual noise, that this noise would be quite prominent during playback. It is this aspect of the problem that has given rise to the somewhat narrow expression "noise reduction". Thus, in practice, the goal is not only to compress the subject to enable it to fit unscathed within the range of the tape, but to include an extra margin of compression to ensure that even the softest passages are recorded significantly above the residual noise.

The reasons for employing so-called noise reduction circuits depend somewhat on the application. The professional recording studio may use as many as 16 or 32 individual tape tracks in preparing a final cut. Many of these tracks are recorded during the original performance by employing an individual microphone (and track) for each instrument and vocal. This practice provides the mixer with full flexibility in combining and adjusting the individual elements of an ensemble. The mixer has full control of the "sound" of the recording. Additional tracks may be used for "overdub" where the same or different musicians, at a later date, can add parts while listening to the previously recorded tracks. Theoretically one could record an entire symphony orchestra without any two musicians being at the same place at the same time.

The point here is that somewhere along the line, these 16 or 32 tracks must be mixed down to one (or two) tracks for the final mix. While the signal-to-noise ratio or dynamic range of an individual track may be acceptable, the noise content of each track will add during mixdown.

The final cut will not only have 32 musical instruments, but also 32 noise tracks. The resulting music will sound as if it had been recorded in front of a waterfall. Thus, in the case of multiple-track recording, some type of noise reduction circuitry must be employed during the original recording to preclude a horrendous build-up of noise during the mixdown.

The reason for the almost universal association of Dolby B with consumer cassette recorders is entirely different.

Continued on Page 86

Cassette Recording Goes Professional With **OPTASOUND**



Professional quality sound is now available at a fraction of the cost you would normally pay for recording equipment with the introduction of the new Optasound 116R Synchronous Self-Resolving Tape Recorder. Optasound 116R can serve as your prime or backup unit. Weighing less than four pounds with batteries and measuring only 5½" x 9 5/7" x 2½", Optasound enables filmmakers to shoot four hundred feet of 16mm professional quality sound on a single side of a C-30 cassette. The unit is available in a Crystal Sync model for Super 8, 16mm or 35mm, a Pilotone model for professional cameras and a Digital Sync Pulse model for Super 8 and 16mm. Signal to noise ratio is 60dB, wow and flutter is comparable to the Nagra SN at equivalent speed. Optasound is all-American made. Write us for additional details and for information regarding sound lab transfer to full coat sprocketed and other post-production facilities or equipment.

CRYSTAL SYNC MODEL 20275

Designed for professional motion picture cameras, the 116R model 20275 includes a 60Hz crystal sync generator that plugs into the sync input on the recorder. This extremely accurate sync signal is recorded on a separate track from the audio on the cassette tape. In playback, the 20275 will self-resolve the sync pulse signal recorded without additional accessories.

Optasound 116R Model 20275 .. **\$650.00**

PROFESSIONAL PILOTONE MODEL 20175

Designed for use with professional cameras equipped with Pilotone sync generators, the 116R model 20175 is identical in operation to the Model 20075 except that it utilizes a Pilotone generator to supply sync pulse instead of a digital pulse.

Optasound 116R Model 20175 .. **\$515.00**

DIGITAL SYNC PULSE MODEL 20075

Designed for Super 8 or any camera equipped with a flash/strobe socket, the 116R model 20075 records a separate sync track from the audio of one pulse per frame at either 24fps or 18fps.

Optasound 116R Model 20075 .. **\$495.00**

SERVING THE WORLD

alan gordon enterprises inc.



1430 N. Cahuenga Blvd., Hollywood, Calif. 90028

Telephone: (213) 466-3561 • (213) 985-5500

TWX: 910-321-4526 • Cable: GORDENT

The Electronic Bolex H-16 EL.

By any other name it would cost twice as much.

Having built professional 16mm cameras for close to 40 years, we can offer this assurance about our H-16 EL:

There isn't another 16mm camera within thousands of dollars of the EL that gives you anything like its quality, its reliable performance, and its up-to-date all-round capabilities.

You have crystal control of the motor for wireless sync sound. Sync-pulse generator permits automatic slating. Solid-state electronics control other motor speeds from 10 to 50 fps forward and 18 fps reverse, single-frame exposures, and LED exposure readout in the reflex finder.

The silicon-cell metering system responds instantly, with spectral all-color uniformity, and has no memory problems. The shutter starts and stops instantly, in closed position.

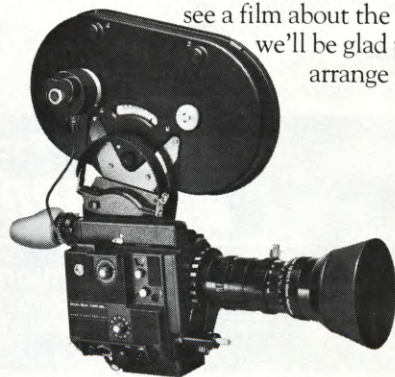
As an example of all-over EL ruggedness, you can carry it safely by the lens. Automatic threading and spool ejection are typical of its built-in, time saving convenience.


Choose among hundreds of lenses, including the most advanced types. Add any accessories you need—400-ft. magazine, blimp, matte box, underwater housing, and more—all available in the Bolex system.

And, save enough on everything to pay for hundreds of extra rolls of film, or additional equipment you thought beyond your budget!

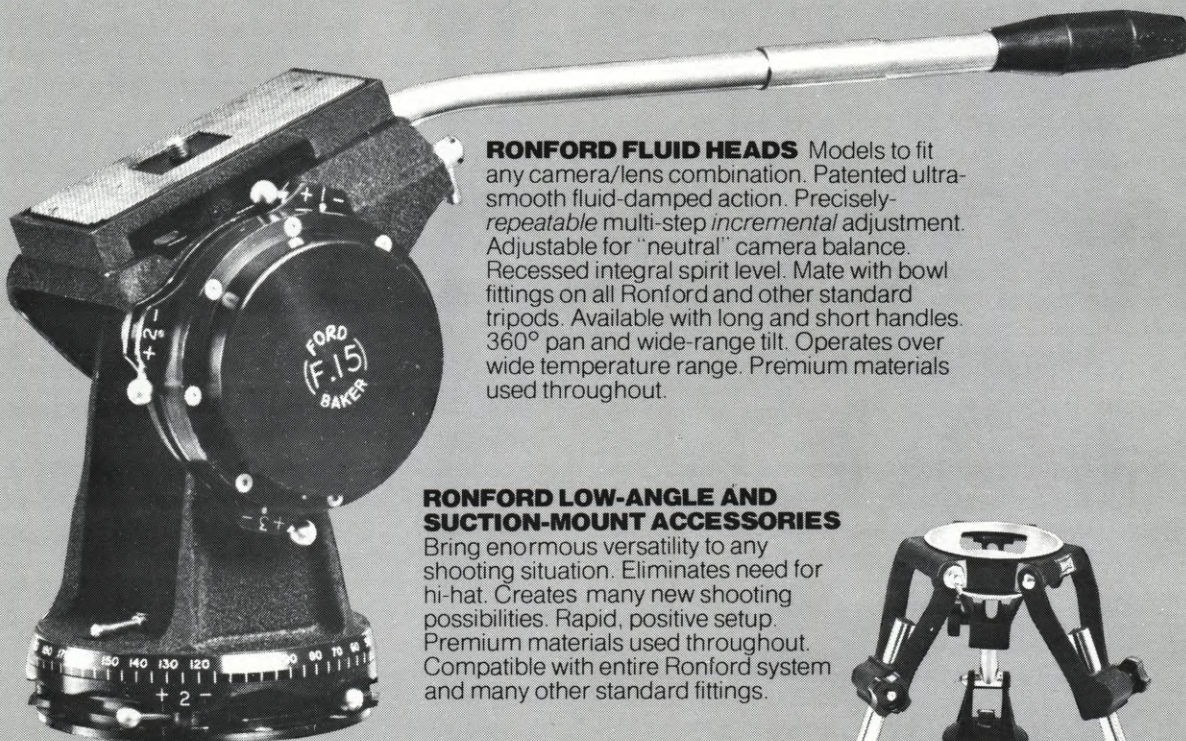
For full-color literature about the EL, as well as the other Bolex 16 cameras and sound projector, write for Lit/Pak P-77. And if you'd like to

see a film about the EL,
we'll be glad to
arrange it.



Ehrenreich Photo-Optical Industries, Inc.
Woodbury, N.Y. 11797 

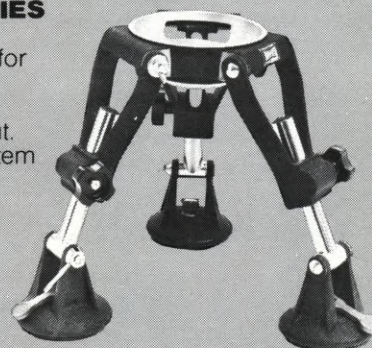
RONFORD HEADS, \$520-1630. SUCTION ATTACHMENTS, \$260 AND UP. TRIPODS, \$265-495. INFLATION? NO. PERFECTION.



RONFORD FLUID HEADS Models to fit any camera/lens combination. Patented ultra-smooth fluid-damped action. Precisely-repeatable multi-step *incremental* adjustment. Adjustable for "neutral" camera balance. Recessed integral spirit level. Mate with bowl fittings on all Ronford and other standard tripods. Available with long and short handles. 360° pan and wide-range tilt. Operates over wide temperature range. Premium materials used throughout.

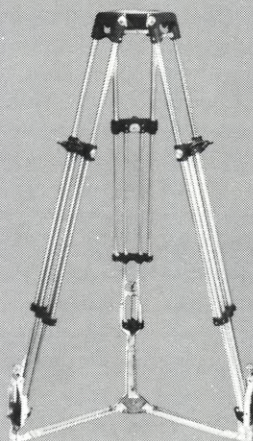
RONFORD LOW-ANGLE AND SUCTION-MOUNT ACCESSORIES

Bring enormous versatility to any shooting situation. Eliminates need for hi-hat. Creates many new shooting possibilities. Rapid, positive setup. Premium materials used throughout. Compatible with entire Ronford system and many other standard fittings.



Working with a Ronford is like getting behind the wheel of a Rolls: the machine responds precisely and unvaryingly to your directions. Thanks to the way it is designed and built. With many refinements, large and small. Lavish use of costly materials. Precise, prideful fabrication and finishing. And an inordinate attention to detail.

"Designed to last indefinitely," is not a Ronford salesman's boast, but a case of British understatement. You owe it to your reputation to find out more about the Ronford line. Or better yet, trying their products for yourself.



RONFORD STANDARD LEGS

Available in light, medium and heavy duty models. Absolutely rigid in all positions. Positive, quick-action lock. Exclusive "no-stoop" height adjustment. High strength/weight ratio. Premium materials. Fully guaranteed.

**CAMERA
MART**

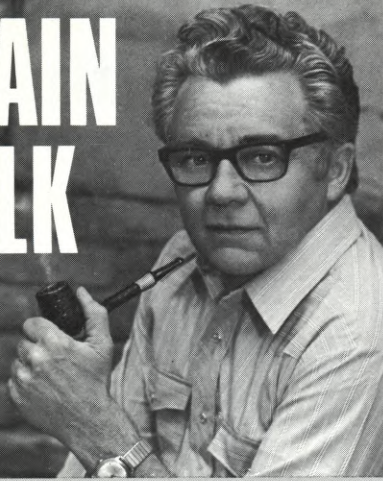
THE CAMERA MART, INC.

456 W. 55th St., New York, 10019 (212) 757-6977
SALES-SERVICE-RENTAL

Sole U.S. distributors. Dealer inquiries invited.

Prices subject to change without notice.

PLAIN TALK



by *J. Carl Treise*

**"Honestly, do you believe
that everyone is the greatest?"**

If you accept what you read in most film processor ads, it seems that every manufacturer is the greatest. Honestly, do you believe that stuff?

Many manufacturers brag about their units being made of "stainless steel", as if it were a miracle metal.

Frankly, that makes me laugh. They won't tell you that some of the metal they use is so thin any sharp object can penetrate it.

And you can go right down the line . . .

For example, do you know that some manufacturers have to modify their processors beyond Kodak specifications, in order to reach the film speed they advertise? (Which means Kodak can't help you when you get into trouble!)

We get tired of false promises and misleading statements. Instead of boasting, a manufacturer should simply describe his processor and let you come to your own conclusion.

The best compliment we ever received was from a customer who thanked us for selling it "as it is".

Do yourself a favor. Don't believe everything you read or hear (—including what you find in this column). Check out any processor you're interested in. Talk to the customer who's actually using it. Find out what he thinks of it. That's how you can reach a sensible decision.

And that's when we think you'll come to Treise.

TREISE
ENGINEERING, INC.

1941 FIRST ST. • SAN FERNANDO, CALIF. 91340
PHONE: (213) 365-3124

WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE

QUICK-SET ANNOUNCES FOUR NEW FLUID HEADS FOR CINE/ENG CAMERAS

Four new fluid pan/tilt heads each with a specified capacity — the Samson Mini (20 lb. cap.), Samson Junior (30 lb. cap.), Hercules Hydro (50 lb. cap.) and Hercules Fluid Cam (50 lb. cap.) have been introduced by Quick-Set, Inc. They are designed specifically for Cine/ENG cameras.

Meeting the most critical professional standards, these heads incorporate special bearings for precise, effortless, ultra-smooth pan and tilt movements. All four heads feature compact, lightweight design, independent positive pan and tilt locks, a built-in level, 360° pan range, and a choice of Pro Jr., ball level, or geared column bases.

Except for the Samson Mini, each of the heads have separate pan and tilt tension controls for critical adjustments. The Hercules Hydro features a spring-loaded tilt action to counterbalance uneven loads. All feature dual-handle operation. Optional accessories include a quick-on camera plate mount (included with the Hercules Fluid-Cam at no extra charge) and a second telescoping control arm.

For a catalog sheet on all four new heads, write to Quick-Set, Inc., 3650 Woodhead Drive, Northbrook, Illinois 60062.

RTI PUBLISHES NEW 1977 CATALOG

Research Technology Incorporated has recently published a brand new 1977 catalog. It's their biggest and most complete ever, with 80 pages introducing over 100 new A-V items. Catalog includes RTI's complete line of film inspection/cleaning equipment, video tape conditioners, storage systems, plus the supplies and accessories you need to stock a complete film library/media center.

RTI has recently expanded their line of 16mm film inspection/cleaning equipment to include models for 35mm and Super 8mm films. A low-priced line of portable cleaning units for filmstrips and 16mm/35mm/8mm/films have been introduced. Catalog also features an 8-page section of LIPSNER-SMITH Ultrasonic Cleaning and Conditioning Equipment and professional

projectors.

A large collection of storage systems and supplies for video cassette tapes is included in the catalog. Film repair equipment, labeling machines, 16mm reels and cans, shipping cases and media center furniture are also featured.

For your FREE copy write Research Technology Incorporated, P.O. Box 730, Skokie, Illinois 60076, or call toll-free 800/323-7520 (if busy or calling from Illinois, Alaska, or Hawaii call 312/677-3000 collect). Cable: RETEC. Telex: 28-9414.

NEW LINE OF 16MM AND 35MM SPLICING TAPE FOR GUILLOTINE-TYPE SPLICERS

A new line of optically-clear splicing tape in both 16mm and 35mm sizes is now available from Alan Gordon Enterprises Inc.

The tape, which meets all stringent demands of professional editors, is moisture-proof and non-discoloring, with acrylic adhesive. It is designed for use with all Guillotine-type splicers and features high tensile strength and low stretch coefficient. Thickness is 0.056mm.

Sizes available are 16mm (.600 width or exactly two frames) and 35mm in one inch and three-quarter inch widths.

FALL 1976 ISSUE OF "CINEMA PERSPECTIVES" NOW AVAILABLE

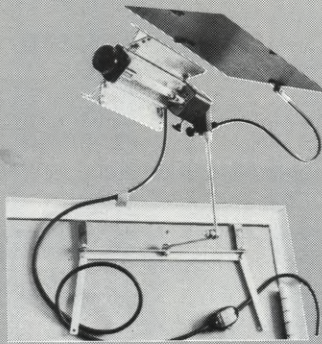
Cinema Products Corporation announces the availability of the new Fall 1976 issue of "Cinema Perspectives" — published by Cinema Products Corp. as a service to the motion picture and television industries.

This handsome, four-color, 28-page Fall 1976 edition of "Cinema Perspectives" features many exciting and informative articles on news/documentary and studio-type filming, including a detailed description of Cinema Products' new and revolutionary camera stabilizing system, *Steadicam*.

To receive your free copy of the Fall 1976 edition of "Cinema Perspectives," please send a written request (on company letterhead) to: Cinema Products Corporation, 2037 Granville Ave., Los Angeles, California 90025.

Continued on Page 55

Location lighting's not what it used to be.



Tota-Light: new flexibility in mounting and control.

Location lighting imposes a number of unique requirements for well-thought-out, durably-built equipment. Over the last fifteen years, Lowel systems have proven themselves in a wide variety of applications in motion pictures, still photography and video. And, in the process, changed location lighting from a compromise to a creative tool.

Tiny Tota-Light. More than a small 1000, 750 and 500-watt light with an ultra-wide, even pattern: it's the first professional quartz light built like a system camera, with lock-on mounting and control accessories.

Modular Link System. Solves grip and control problems as they occur on location. Rugged, lightweight components interlock to form flags, booms, diffusers...dozens of other rigs. Outstanding stands: with unusually high strength-to-weight ratios.

Link system: countless control and support combinations.



Location lighting imposes a number of unique requirements for well-thought-out, durably-built equipment. Over the last fifteen years, Lowel systems have proven themselves in a wide variety of applications

of applica-



Variflector II: the only roll-up, flood-out reflector.

Folding Softlight 1500. Only a fraction of the weight of studio units, it makes soft-shadow location lighting a reality. Delivers more output than most 2K softlights

with two 750-watt lamps. Mounts or clamps anywhere...folds into compact case for travel.



Softlight 1500: the large, soft-shadow source that fits in a small case.

Roll-up

Variflector II. The only truly portable, professional reflector. Complete flood control through 3:1 ratio,

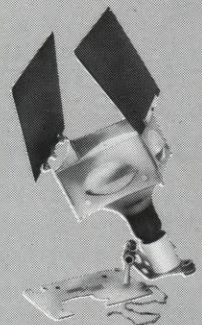
to adjust brightness and spread. Rolls up to fit in compact case with stand.

Workhorse Quartz "D". Studio versatility in a compact, lightweight focusing unit with wide (7:1) spot/flood ratio and inter-

Quartz "D": 7-1 focusing plus high intensity.

changeable 1000, 750 and 500-watt lamps. Quick-change accessory-reflector system transforms it from a versatile general-purpose light to a high-intensity, long-throw source.

Lowel-Light. The tape-up, clamp-on light that helped change the industry's approach to location lighting, and introduced Gaffer-Tape™. Some of the original units are still going strong, after 15 years of rental.



The Antique.

For more information on Lowel products see your dealer or contact us.

lowel 

421 West 54th Street, New York, N.Y. 10019 (212) 245-6744
West Coast: 3407 West Olive Avenue,
Burbank, Ca (213) 846-7740

B&S Makes More Than 200 Products To Help You Make Better Films

HERE ARE JUST A FEW:

TRIPODS

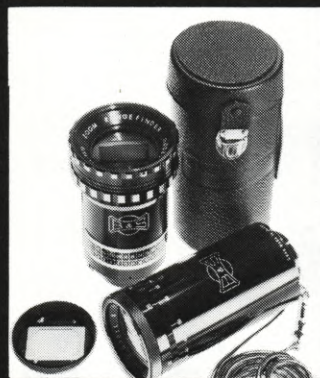
VG100Jr, VGM200 and VGH300. Birns & Sawyer V-grooved tripods are stronger, faster, easier and safer to use.

Selected hardwoods, highest quality metal parts, careful assembly assure long lasting, dependable product in any tripod configuration. From \$150.



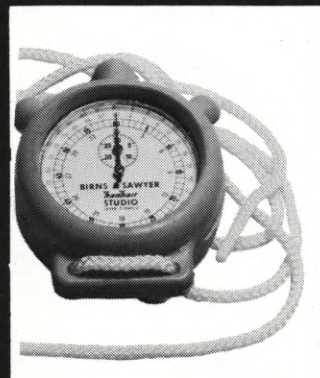
DIRECTORS FINDERS

B&S Directors Finders are industry-proven tools for directors and cameramen. Fine precision optics permit zoom framing in all standard aspect ratios. Plan your shots now at low, low prices. \$119.50 and \$149.50.



FILM STOP WATCHES

The B&S *Filmeter* and the *Studio Stop Watches* are super quality. They record 16/35mm footage, "take" time and accumulated time. Shock-proof, anti-magnetic and easy to read. Unbreakable main springs. Necessary tools for film makers. From \$49.95.



TELEZOOMS

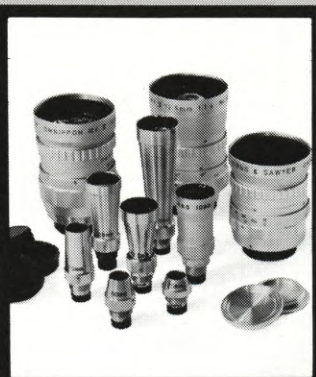
B&S *Telezooms*® double the effective focal length of most prime and zoom lenses. Available with mounts for Arriflex, CP16-R, BNC-R, XR35 and Eclair.

The new BNC-R Telezoom fits both spinning mirror and pellicular-reflex Mitchell cameras as well as Mitchell and Arri "hard-fronts." From \$123.50 to \$795.00.



OMNIPPON® LENSES, OBJECTIVE FINDERS

The B&S *Mark II Omnippon C-Mount Lenses* are again in production and better than ever. 10mm to 75mm and selling at about one-half of competitive prices. From \$240 to \$375. We also have the most complete line of quality Viewfinders anywhere for the B&H 70-series. 10mm to 150mm. \$24.00 to \$55.00.



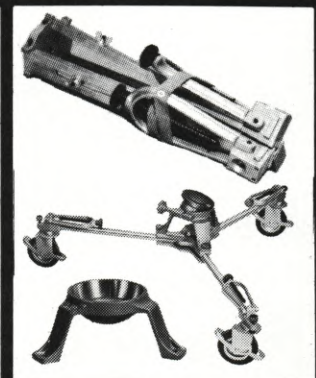
DITTY BAGS, ASSISTANT JACKETS

B&S *Ditty Bags* keep countless film-making accessories handy. So does the attractive, multi-pocketed *Assistant's Jacket*. Hang the ditty bag from your tripod, hang the jacket on your assistant. Better yet, wear it yourself and save money. Both made of heavy-duty canvas or blue denim. From \$30.00.



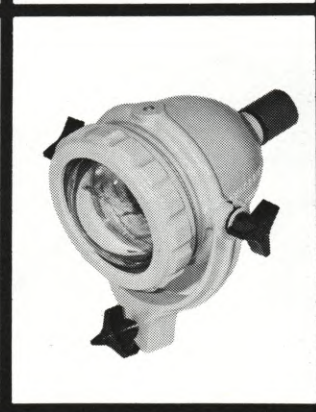
DOLLIES, TRIANGLES, HI-HATS

Birns & Sawyer makes more camera support equipment than anybody. *Senior Dolly*, \$210.00, *Triangle*, \$79.50 and *Hi-Hats* from \$32.00. Also *Tri-Ped Grip-Tips*, \$13.95, *Bodypods*, \$79.50, and *Twi-Pods*, \$99.50.



UNDERWATER LIGHTS

The famous Birns & Sawyer *SeAQUartz® Snooper* and *Snooperette* deep-sea underwater lights have proven themselves brilliantly for a dozen years in every ocean. Currently used in feature productions by MGM, Universal, Paramount and others. From \$249.50 to \$495.



And 200 more. And new ones on the way. Look for them soon.

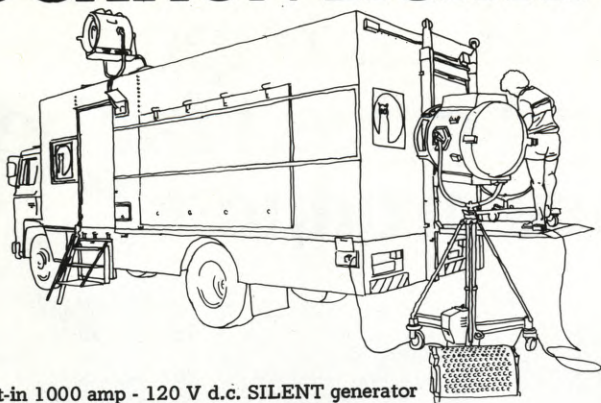


BIRNS & SAWYER, INC.

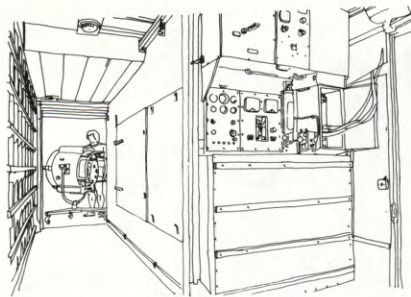
1026 NO. HIGHLAND AVE. • LOS ANGELES, CALIF. 90038
(213) 466-8211 • CABLE: BIRNSAW • TELEX 673280



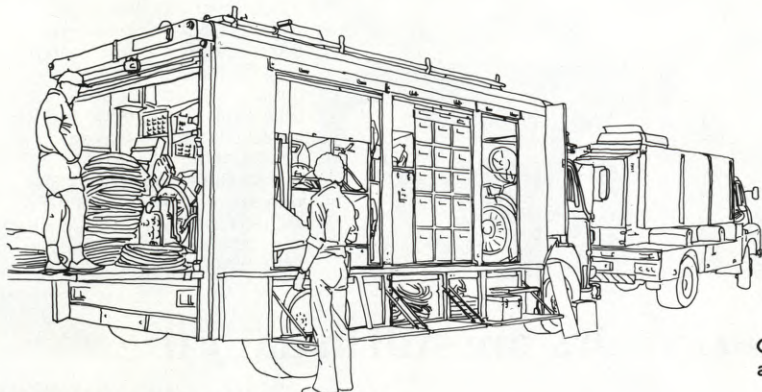
LOCATION LIGHTING MOBILITY...



OWL III. Built-in 1000 amp - 120 V d.c. SILENT generator



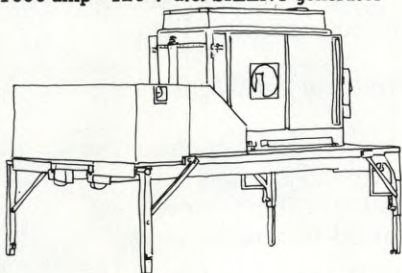
... and 874 cu. ft. of storage space



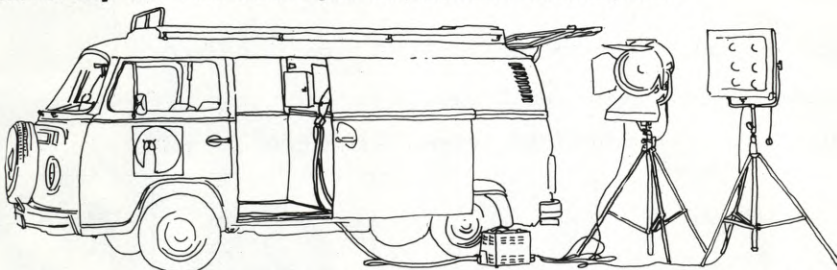
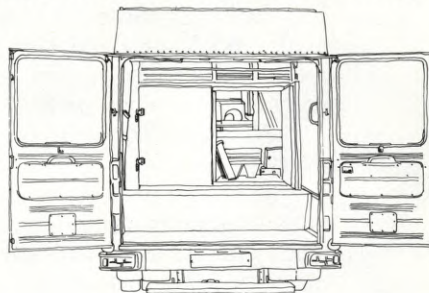
SAM III. Lighting/Grip mobile with separate 1000 amp - 120 V d.c. SILENT generator



OWL II. Built-in 50 kVA - 120/240/415 V a.c. SILENT alternator with 311 cu. ft. of storage space (see below).



'D' Mount 250 amp - 120 V d.c. SILENT generator, shown left in working mode



OWL I. Built-in 15 kW - 120/240 V a.c. SILENT alternator with 144 cu. ft. of storage space



...depends on having the right vehicles and equipment. And the right personnel.

Here at Southern we have a complete range of specially designed vehicles with and without built-in generators/alternators, and with enough carrying space for all lighting and grip equipment. Our enthusiastic technicians are the very best. So, whether you're planning a one-day commercial, a tight budget 16 mm documentary or a major overseas production, we have exactly the generator/alternator/lighting/vehicle package you need. Phone Geoff Smith or Terry Walters on (01) 452 5477/8/9.

SOUTHERN LIGHTING ASSOCIATES Ltd

112 Cricklewood Lane · Cricklewood · London NW2 2DP · Tel: (01) 452 5477 · Telex: 21430 · Cables: Samcine London
A Member of the Samuelson Film Service Group of Companies

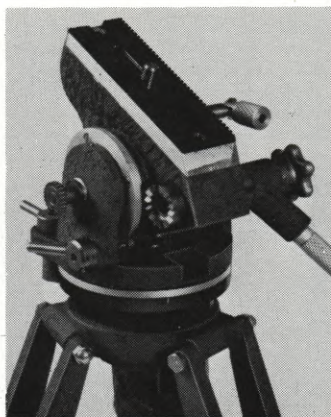
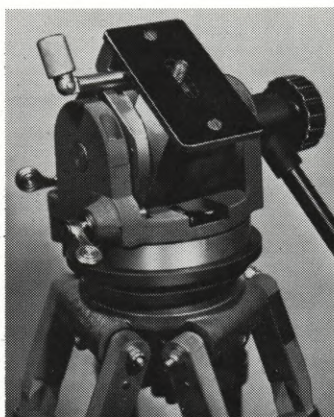
“Pro-Jr. is the best tripod in the business and priced far below competitive products.”*

PRO-JR. FLUID HEAD.

Silicone fluid assures maximum smoothness. Features adjustable tie-down screw to balance camera; accessible camera-mounting knob; panhandle with adjustable angle position; L-spirit level; 360° pan, 55° tilt action backwards and forwards. Accommodates any camera up to 30 lbs.

Weight: 11 lbs.

Fluid Head Complete with Swivel Bowl and Legs. \$675.00. Without Legs \$550.



PRO-JR. MINI FLUID HEAD

Exclusive silicone formula fluid assures maximum smoothness. 360° pan, 55° tilt action backwards and forwards. Ball leveling. Spirit level. Tilt tension adjustment. Positive locks. Adjustable tie-down screw to balance camera. Accessible camera mounting knob; pan handle with adjustable angle positions. Swivel bowl and top tripod casting. Accommodates any camera up to 20 lbs. Weight 9 lbs. Head complete with swivel bowl and Mini-Pro Jr. Legs. \$450. Mini Fluid Head and Pro-Jr. V-Grooved. Legs. \$495. Without Legs. \$375.00.

After 40 years, 10,000 Pro-Jrs. are still in daily use.

But over those 40 years we've never stopped improving it. And the all-new ball-joint heads and V-grooved legs reflect the Pro-Jr.'s continuous improvement in design and operation. Pro-Jr. is now all magnesium. To make it the most efficient and most light-weight tripod ever made.

Now Pro-Jr. is the strongest, the smoothest and the lightest. And you can't beat the price.

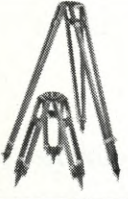

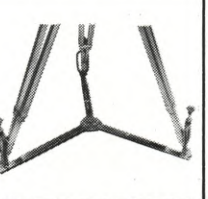

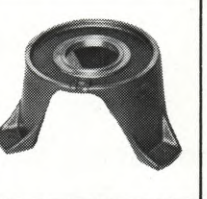
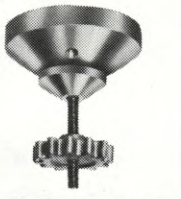
It has an instant leveling swivel bowl that helps you keep the camera level. It eliminates time consuming leg adjustments. And its magnesium fluid drive and friction drive heads can be used with all cameras. They're tough. They're dependable. They provide you with years of trouble-free service. Efficient operation is guaranteed in temperatures from 20° below zero through 120° above.

Find out about the improvements in the Pro-Jr. and you'll find out why it's the best tripod in the business.

Available from professional equipment dealers—or direct from F&B/Ceco.

**Say 64 major equipment dealers throughout the U.S. and 30 foreign countries.*

Other tripod accessories available from F&B/Ceco:

					
PRO-JR. ADJUSTABLE V-GROOVED LEGS \$125.00	PRO-JR. HI-HAT \$48.00	PRO-JR. COLLAPSIBLE LEG CLAMP TRIANGLE \$69.95	PROFESSIONAL ALL METAL TRIPOD \$350.00	MITCHELL TYPE HI-HAT \$48.00	UNIVERSAL BALL ADAPTER \$60.00

F&B/CECO

SALES—SOS DIVISION

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

'touch&go' -

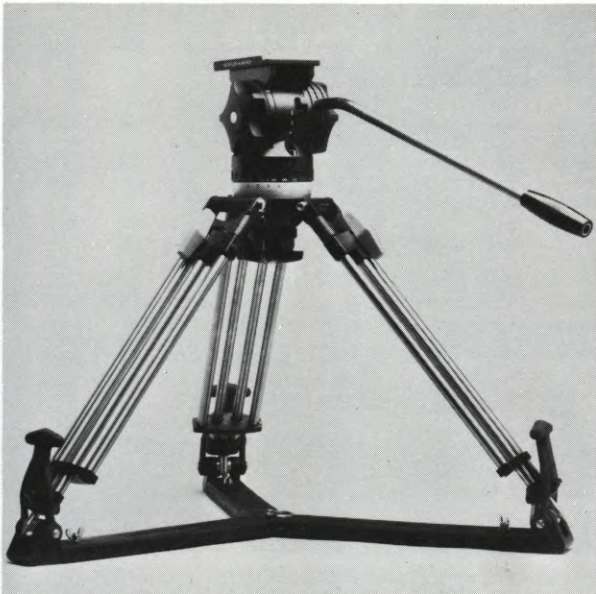
Sachtler

touch&go

Tripod:

The absolute best we ever made. Taking the roughest handling on all types of locations from the camera crew. Yet, all the movements always smooth. Utilizing a new torsion-free trapezium

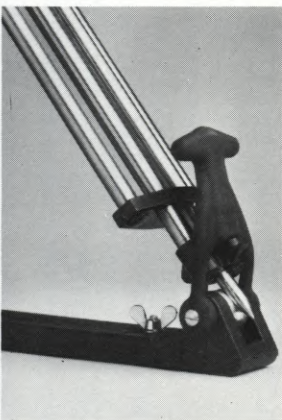
design manufactured with the latest space-age lightweight metal combination of aluminium and titanium steel easy to make adjustments with extra large hard rubber butterfly lock knobs.



Triangle:

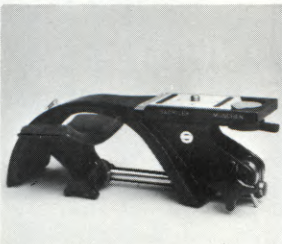
Made of unbreakable hard rubber that will not slip on or scratch the smoothest surface. It is quick and easy to fold without removing from tripod, however, a very slight pull on the rubber locking

handgrips will separate the triangle from the tripod legs.

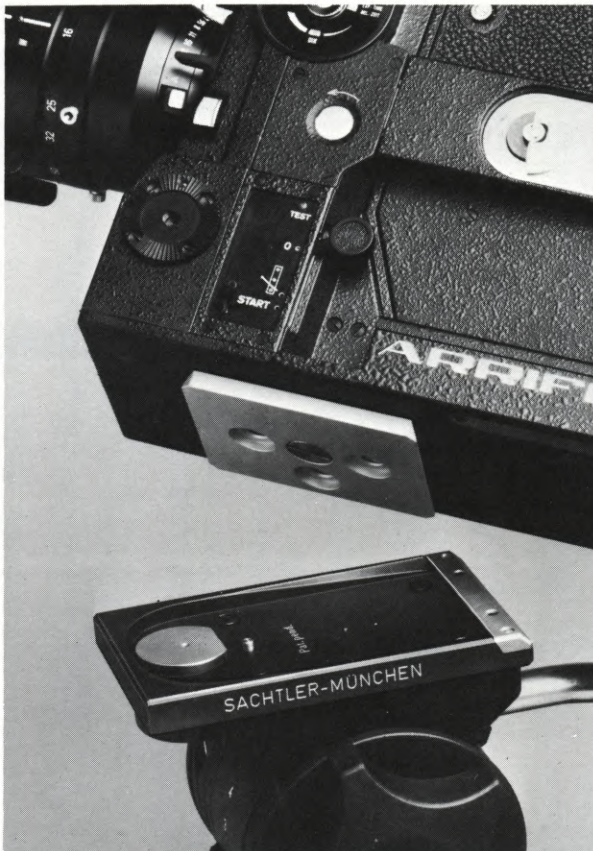


Shoulder Brace:

A unique design with new quick release one touch camera mount. A new lightweight easy to fold shoulder support that will safely hold the camera in the folded down position.



presents
a new tool for the
Professional Film-
maker



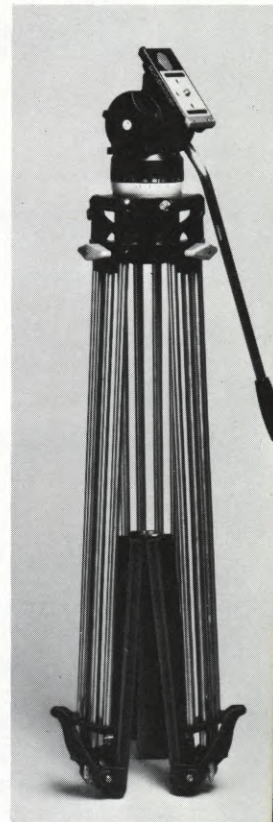
The Super Fluid Head:

With 16 combinations and 2 x 4 panning and tilting speeds. Allow ultra quiet and slow movements to extremely fast panning action covering all sporting events. The Touch and Go System is

the latest innovation of the forward thinking Sachtler Co. A new design approach making the basic fluid head tripod, triangle (spider) and shoulder brace much easier and faster to use.



Sachtler GmbH
Filmtechnische Geräte
Osterwaldstraße 10
D-8000 München 40
Telefon 0 89/36 40 65
Telex 2 15 340



The heart of the Touch and Go System is the entirely new quick-release one touch camera mount, ending forever the fumbling to mount camera to tripod head. Now, with one soft touch of your finger, the camera is released from head and quick mounted on shoulder brace - Touch and Go.

touch&go 16 Sachtler



Cine Specials

From the West Coast's Finest Photographic Center.

ARRIFLEX

Arriflex 16 M w/Synch Motor, Variable Motor, 4-400' Mags and Case	Used \$6500.00
Arri 16 MB	New \$5980.00
Arri 16 SB	New \$4130.00
Arri 16 SR	(Phone or Write)
400' Magazine for SB	New \$ 359.95
Torque Motor for 400' Magazine	New \$ 375.00
200' Magazine for SB	New \$ 359.95
Torque Motor for 200' Magazine	New \$ 375.00
400' Magazine for MB	New \$ 528.95
200' Magazine for MB	New \$ 465.00
1200' Coaxial Magazine for MB	New \$1489.95
Governor Controlled Motor for SB/MB	New \$ 465.00
Variable Speed Motor for SB/MB	New \$ 339.95
Sync Motor for SB/MB	New \$ 900.00
Standard Matte Box for SB/MB	New \$ 295.00
Barney for 16 S	New \$ 205.00
Barney for 16 M	New \$ 205.00

NEW RAIN COVERS

for Arri 16 BL w/400' Mag.	\$59.95
for Arri 16 S Camera	\$42.00
for Arri 16 S 400' Mag. Only	\$15.95
for Arri 35 w/400' Mag.	\$59.95
for Eclair NPR w/400 Mag.	\$59.95
for Eclair ACL w/200 Mag.	\$52.95
for Beaulieu R 16 camera	\$42.00
for Beaulieu 200' Mag. Only	\$12.95
for Bolex H 16 Rex camera	\$42.00
for Bolex H16 Rex 400' Mag. Only	\$15.95
for CP-16 and CP-16A w/400'	\$59.95

NEW SOUND BARNEYS

for Arri 16 BL	\$129.50
for Eclair NPR	\$129.50
for Eclair ACL	\$129.50
for Arri 35 BL w/1000' Mag.	\$149.50
for Arri 35 BL w/400' Mag.	\$129.50
for Beaulieu R 16 camera	\$ 75.00
for Canon Scoopic	\$129.50

NEW SUPER-8 CAMERAS

	Cash Price
Canon 1014 Electric w/Case	\$466.95
Canon 814 w/Case	\$297.95
Canon 514 XL w/Case	\$189.95
Canon 512 XL w/Case	\$249.95
Canon Sound 514 XL w/Case	\$299.95
Elmo 1000S	\$449.95
Kodak 200 Ektasound	\$359.95
Yashica LD-6	\$159.95
Sankyo 25S Sound	\$209.95
Sankyo 40S Sound	\$249.95
Sankyo 60S Sound	\$329.95
Minolta XL-225 Sound	\$199.95
Minolta XL-440 Sound	\$239.95
Minolta XL-660 Sound	\$269.95

If It's Not Listed
Please Call or Write

We do not have a catalogue. Please write for individual price quotations.

Mail and Phone Orders Promptly Filled

NEW EQUIPMENT: All new equipment is sold with manufacturers guarantees and original packaging. We cannot ship new equipment on "trial" or "approval."
USED EQUIPMENT: If not fully satisfied, merchandise may be returned for refund less shipping charges within 10 days of receipt.
PAYMENT: We accept Bank Checks or Money Orders for fastest shipment. Personal Checks cause delay. 20% deposit required for C.O.D.'s. BankAmericard or Mastercharge OK.
QUANTITIES LIMITED: All items subject to prior sale. Not responsible for misprints or price changes.
SHIPPING CHARGES: Please pay estimated shipping charges. Balance will be refunded. Minimum \$3.50. California residents add 6% sales tax.

CINE LENSES

Angenieux 5.9mm f1.8 "C"	New \$1045.00
Century 6.5mm f1.8 "C"	Used \$ 289.95
Angenieux 10mm f1.8 "C"	New \$ 329.95
Switar 25mm f1.8 "RX"	Used \$ 199.95
Angenieux 15mm f1.3 "C"	Used \$ 319.95
Angenieux 15mm f1.3 "C"	New \$ 404.80
Switar 16mm f1.8 "RX"	Used \$ 199.95
Angenieux 25mm f1.4 "C"	Used \$ 269.95
Angenieux 25mm f1.4 "C"	New \$ 329.95
Angenieux 25mm f0.95 "C"	Used \$ 399.95
Angenieux 25mm f0.95 "C"	New \$ 549.95
Pizar 26mm f1.9 "C"	Used \$ 79.95
Angenieux 50mm f1.5 "C"	Used \$ 399.95
Angenieux 50mm f1.5 "C"	New \$ 499.95
Pizar 50mm f1.8	Used \$ 199.95
Cooke 50mm f1.4 "C"	Used \$ 199.95
Angenieux 75mm f2.5 "C"	Used \$ 249.95
Angenieux 75mm f2.5 "C"	New \$ 329.95
Yvar 75mm f2.8 "C"	Used
Switar 75mm f1.9 "C"	Used

Angenieux 100mm f2.5 "C"	New \$ 469.95
Yvar 100mm f3.3 "C"	Used \$ 124.95
Macro Yvar 150mm f3.3 "C"	New \$ 385.00
Angenieux 150mm f2.7 "C"	New \$ 549.95

Angenieux 9.5x57 f1.6 "C"	New \$2125.00
Angenieux 10x150 f2 "C"	New \$2589.95
Pan Cinor 17x85 "C"	New \$1159.95
Berthiot 17x130 "C"	New \$ 699.96
Angenieux 17x68 f2.2 "C"	New \$ 839.95
Angenieux 17x68 f2.2 "C"	Used \$ 589.95
Retro-focus for 17x68 Angenieux "C"	Used \$ 169.95
Vario-Switar 16x100 POE "RX"	Used \$ 739.95
Angenieux 12x120 f2.2 "RX"	Used \$1749.95
Angenieux 12x120 f2.2 "C"	New \$1879.95
Pan Cinor 12x120 "RX"	New \$ 549.95
Angenieux 12x240 f3.5 "C"	New \$5550.00
Angenieux 12.5x75 f2.2 "C"	New \$1422.95
Angenieux 9.5x95 f3.5 "C"	New \$2348.00

LIGHTS

Colortran Mini Pro Kit	New \$ 459.95
Colortran Mini King Kit	New \$ 459.95
Colortran Pro Kitr IV	New \$ 539.95
Colortran Flight Kit	New \$ 649.95
Colortran Mini Pro Kit	Used \$ 389.95
Hervic Location Light Kit	Used \$ 259.95
Lowel Lights	(Call or Write)
Sylvania Sun-Gun	New \$ 149.95

BEAULIEU

Beaulieu R 16 BFZ with 12x120 Angenieux	Used \$2350.00
Beaulieu R 16 B with 12.5x75 Angenieux	Used \$1995.00
Beaulieu R 16 B Turret	Used \$ 989.95
Beaulieu News 16 with 12x120 Angenieux	Used \$4750.00
Beaulieu 200' Magazine	Used \$ 219.95
Beaulieu 500 mA Battery	Used \$ 69.95
Beaulieu 1000 mA Battery	Used \$ 119.95
Beaulieu Sync Pulse Generator	Used \$ 209.95

BEAULIEU SUPER-8

4008 ZM4 w/6x70 Optivaron	New \$1199.95
3008 MS w/8x50 Optivaron	New \$1299.95
5008 S w/6x80 Angenieux	New \$1699.95
5008 MS w/6x70 Optivaron	New \$1699.95

SOUND

Sony TC-142 Tape Recorder	New \$ 177.95
Sony TC-153 Tape Recorder	New \$ 274.95
Sony TC-150 Tape Recorder	New \$ 146.95
Sony TC-56 Tape Recorder	New \$ 124.95
Uher 4000L Tape Recorder	Used \$ 289.95
Electro-Voice 644 "Spot" Mic	Used \$ 74.95
Electro-Voice 642 Shotgun Mic	Used \$ 149.95
Sennheiser Modular Micro-phones	(Phone or Write)
Stellavox	(Phone or Write)

BOLEX

Bolex H-16 EBM Camera with Bay. Mt. w/Power Grip, Battery, Charger, 3' Cable, Vario Switar 100 POE Zoom Lens	New \$1889.95
Bolex H-16 EL Camera with Battery, Charger, Remote Control Cable, Filter Holder and Gelatin Filters	New \$2420.00
Bolex Vario Switar 12.5x100 f2 for H-16EL	New \$1650.00
Bolex H-16 Rex 5	New \$1040.00
Bolex H-16 SBM	New \$1090.00
Bolex ESM Motor	New \$ 459.95
Bolex ESM Motor with Handgrip, Battery, Charger & Cable	New \$ 785.00
Bolex EM Motor	New \$ 179.95
Bolex EM Motor with Power Pack, Charger, and Cable	New \$ 405.00
Bolex 400' Magazine	New \$ 239.95
Bolex 400' Magazine with Take-up Motor and Cable	New \$ 450.00
Bolex Crystal Sync Unit with Cable	New \$ 329.95
Bolex Matte Box B	New \$ 199.00
Bolex Barney	New \$ 124.95
Bolex Cover for 400' Magazine	New \$ 15.50
Bolex Aluminum Case for H-16 with 400' Mag	New \$ 340.00
Bolex Rex-O-Fader	New \$ 109.95
Bolex 18x86 Vario Switar EE	Used \$ 489.95
Bolex 12x120 Angenieux Rex Mount	Used \$1749.95

METERS

Minolta Color Meter	New \$ 469.95
Minolta Auto Spot II 1 Degree	New \$ 349.95
Minolta Auto Spot II Digital	New \$ 539.95
Minolta Autometer II	New \$ 109.95
Gossen Luna Pro	New \$ 89.95
Gossen Multi-Beam (Variable Angle Meter)	New \$ 59.95
Spectra Tri-Color Meter	New \$ 579.95
Spectra Combi 500 w/pointer lock	New \$ 175.00
Spectra Professional w/pointer lock	New \$ 115.00
Sekonic Meters	(Phone)

TRIPODS

NCE JB Head w/legs	Used \$ 485.00
Miller Super 8 Head	New \$ 135.00
Miller Super 8 Head w/legs	New \$ 270.00
Miller F Head	New \$ 285.00
Miller F Head w/slip pan	New \$ 345.00
Miller Model F Tripod w/ball level top	New \$ 266.00
Miller Model F tripod w/ball level top	Used \$ 220.00
Bolex Tripod complete w/ball level top, Head	New \$ 285.00
Miller Pro w/slip pan	Used \$ 349.95
Foba Metal Legs	New \$ 350.00
Ronford Heavy Duty Standard Legs	New \$ 525.00
Ronford Heavy Duty Baby Legs	New \$ 505.00
Ronford Medium Duty Standard Legs	New \$ 415.00
Ronford Baby Legs	New \$ 400.00
Ronford Fluid Heads	(Call or Write)
Foba Collapsible 3-Wheel Dolly	New \$ 250.00
Collapsible 3-Wheel Dolly	Used \$ 149.95

EDITORS

Minette 16mm Editor	New \$ 195.00
Minette 16mm Editor	Used \$ 165.00
Rewinds for Minette	New \$ 58.50
Rewinds for Minette	Used \$ 50.00
Zeiss 16mm Moviescope	New \$ 199.95
Rewinds for Zeiss 16mm Editor	Used \$ 54.95
Minette 16mm Editor w/50 watt Hologon Lamp	New \$ 345.00
Cineamex 16mm Editor	Used \$ 249.95
Specialties 4 Gang Super-8 Editing Bench	New \$ 629.95
Minette S5 Super-8 Editor	New \$ 85.00
Maier-Hancock 816 16-8mm Hot Splicer	Used \$ 189.95
Guillotine 16mm Gold Label Kit	New \$ 175.00
Guillotine Super-8 Splicer	New \$ 19.95
Guillotine Super-8 Splicer (Metal)	New \$ 29.95
Bolex 16mm Splicer	New \$ 69.95

PROJECTORS

Kodak Pagent AV 126 TR	New \$ 689.95
Kodak Pagent AV 256 TR	New \$ 799.95
Kodak Pagent AV 12 E6	New \$ 659.95
Kodak 199 Analyst	New \$ 579.95
Elmo 16 AR	New \$1195.00
Elmo 250 HS	New \$ 695.00
Silma Bivox Dual 8 Sound	Demo \$ 299.95
Bauer 16/16 Studio Interlock	Mint (Phone)
Bell & Howell 552 Auto 16mm Sound	Used \$ 349.95
Bell & Howell 1574 A	New \$ 495.00
Kodak VP-1 Super 8 TV Video-player	New \$1595.00

bel air camera & hi-fi

927 Westwood Boulevard, Los Angeles, California 90024

(213) 477-9569 or 879-9616

1/2 Block South of UCLA in Westwood, Hours: Monday-Saturday 9-6

TRADE-INS WELCOME

CLEAN answer prints from 7247 A&B Negatives

Take advantage of the excellent quality of 7247 negative without the fear of dirt, scratches, and cinch marks.

Du Art's unique computer system* of negative handling and timing keeps your negative in brand-new condition—

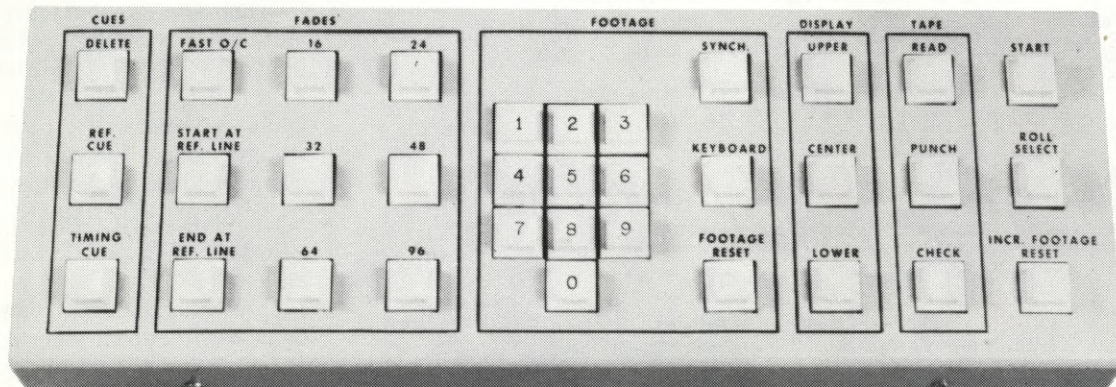
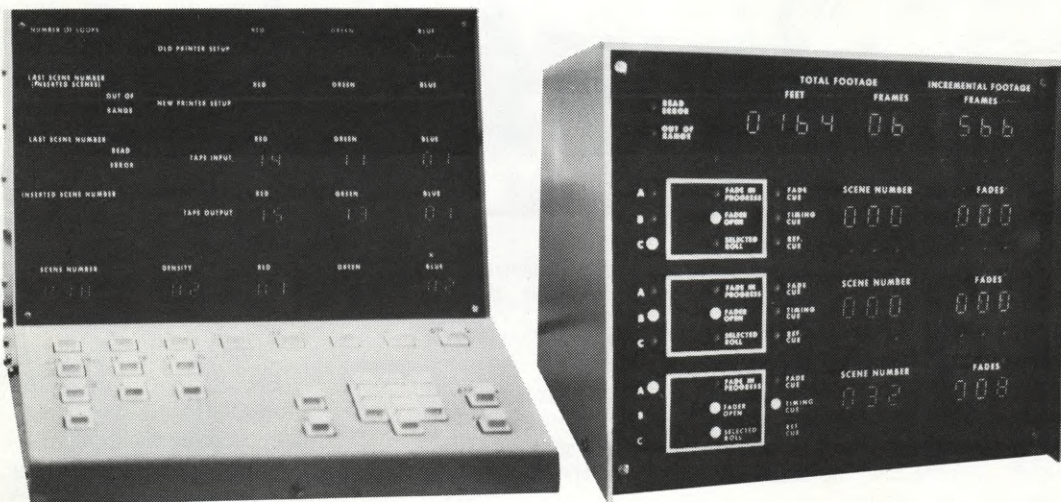
No Notches...No Metallic Tabs...Nothing touches your negative.

The proof is in the spotless condition of the answer print. But don't just take our word for it. Try it! You'll agree, there's nothing in the industry like it. Call Bob Smith for further information.

*Pat. Pending



the CLEAN way to 7247 answer prints



Now in our 53rd year

Du Art Film Building, 245 W. 55th St., New York, N.Y. 10019 (212) PL 7-4580

THE BOOKSHELF

By GEORGE L. GEORGE

BROADENING THE CRAFT

With television assuming an ever-expanding role in the mass communication and entertainment industries, much material has been written to enable film craftsmen to broaden their technical and creative horizons in order to function effectively in their enlarged fields.

The 5th edition of *THE TELEVISION PROGRAM* examines in authoritative detail the technical end of video production. Written by Edward Stasheff, Rudy Bretz, John Gartley and Lynn Gartley, it reviews the most recent equipment, the work of the producer, the director and the cameraman, as well as the operational procedures involved in the creation of a television show. (Hill & Wang \$12.95)

The revolution in videotape caused by the new portable minicamera is discussed at length in *ENG/FIELD PRODUCTION HANDBOOK* (ENG meaning Electronic News Gathering) by C. Robert Paulson and colleagues, a comprehensive survey of the equipment and its use. (BM/E \$9.95)

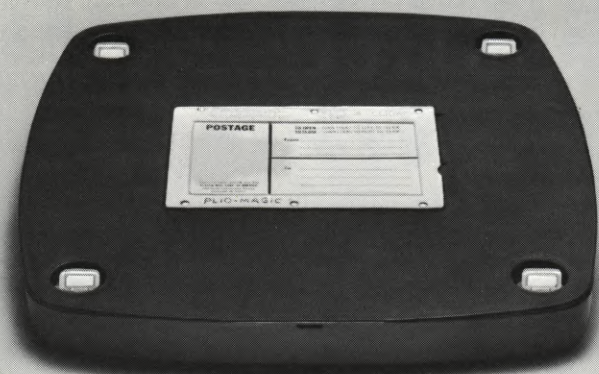
The artistic possibilities of the medium, some of them pretty far-out, are explored by Ira Schneider and Beryl Korot in *VIDEO ART*, a broad anthology of achievements by a number of creative videomakers. (Harcourt Brace Jovanovich \$19.95/9.95)

Vincent Terrace's *THE COMPLETE ENCYCLOPEDIA OF TELEVISION PROGRAMS 1947-1976* is a valuable compilation with all essential data of all the shows that shaped TV over a quarter century. (Barnes, 2 vols. \$29.95)

Audio-visual resources of some 2000 libraries and media centers are indexed in *NORTH AMERICAN FILM AND VIDEO DIRECTORY*, edited by Olga S. Weber, a comprehensive volume listing services and holdings available to the public. (Bowker \$35.)

In *THE GOLDEN YEARS OF BROADCASTING*, Robert Campbell celebrates 50 years of NBC radio/tv programming, a well illustrated cavalcade of broadcast entertainment with many behind-the-scenes glimpses. (Scribners \$20.)

A perceptive analysis of the influence of power and money on the arts, *THE CULTURE BARONS* by Faye Levine finds some of its most telling instances in the visual media, where the



**How to spend less for postage.
Even with the new, higher rates.**



Switch to Plio-Magic® reels and shipping cases. They weigh considerably less than conventional packing, so you still save money, even with the 26% postal increase.

And the money-saving features of Plio-Magic® don't stop there! Plio-Magic® cases last longer than fiber cases, and require less handling time. There's a wide assortment of colors, enabling color coding. They can be imprinted with your company's or library's logo and address. And only PRC cases offer the new, improved **Twist-Ease™ Locking System**, for simple opening and closing.

Plio-Magic® reels last longer, too, and are safer around children. Together, they make a lightweight, super-tough package that does a better job of protecting your film while costing you less.

Now more than ever, you need Plio-Magic®. Call or write today for literature and details.

PLIO-MAGIC®

 **PRC of AMERICA**

Plastic Reel Corporation of America
A wholly owned subsidiary of Williamhouse-Regency, Inc.
640 South Commercial Avenue, Carlstadt, New Jersey 07072 (201) 933-9125
7165 Willoughby Avenue, Hollywood, CA 90046 (213) 851-7532

Available in Canada through Rutherford Photo Ltd.

final decisions as to contents and form of a show often lie with the money people. (Crowell \$10.95)

Robert Sobel's study of the information media and the effect they exercise over public opinion, *THE MANIPULATORS*, offers stimulating historic perspectives on the evolution of our cultural growth from "educated gentlemen" to "mass intellectuals". (Doubleday \$9.95)

The popular aspects of television are well served in 4 topical paperbacks. Paul Denis' *DAYTIME TV'S STAR DIRECTORY* presents personality sketches of all the principal serial performers (Popular Library \$1.50). Ron Luckmann's *SOAP OPERA ALMANAC* writes up stars and story lines of these popular shows (Berkeley \$1.50). Daniel Lockwood's *THE MARY HARTMAN STORY* performs a similar job for *MH2*, that latest newcomer that baffled all experts (Bolder Books \$1.75). And Bart Andrews' brash compilation, *THE OFFICIAL TV TRIVIA QUIZ BOOK No. 2* (Signet \$1.25).

* * *

HOLLYWOOD THEN AND NOW

Edited by Tino Balio, *THE AMERICAN FILM INDUSTRY* is an informative and enlightening anthology of original papers and previously published materials dealing with the historic development of the U.S. motion picture in terms of its economic structure from 1894 on. (U. of Wisconsin Press \$15./6.95)

The full story of the Vitagraph Co., which was active in film production from 1896 to 1925 when it was sold to Warner Bros., is told by Anthony Slade in *THE BIG V*, a well-researched volume that records Vitagraph's influence on the nascent industry. (Scarecrow \$9.)

The 66 serials that Republic Studios produced during 1935-1955 are described with a wealth of detail by Jack Mathis in *VALLEY OF THE CLIFF-HANGERS*, an extraordinary 11 lb., 13" x 18" leatherbound whale of a book, enhanced by over 2000 photographs and 1000 frame-blowups. (Mathis, Box 714, 3501 Woodhead Dr., Northbrook, IL 60062; \$66.)

The prowess of Movietone News cameramen comes to life again in a sumptuously illustrated book, *MOVIE-TONE PRESENTS THE 20TH CENTURY*, where Lawrence Cohn recaps their intrepid coverage of world history in the making during the 1919-1963

era. (St. Martin's \$17.95)

Gifted immigrants who made good in the film capital — Chaplin, Stroheim, Lubitsch, Curtiz, Hitchcock, Lang, Preminger, Forman and others — are discussed by Don Whittemore and Philip Alan Cecchetti in *PASSPORT TO HOLLYWOOD*, a study of their influence on the evolution of film art. (McGraw-Hill \$13.50/9.95)

A deadly on-target spoof by Brian McCannachie, *THE NAKED AND THE NUDE* daringly alleges unseemly behavior on the part of well-known film personalities in a hilarious reportage on "Hollywood and Beyond". (National Lampoon \$2.50)

* * *

NAMES IN THE NEWS

A highly readable biography by Bob Thomas, *WALT DISNEY* is a full-length portrait of a mass culture giant. Factual details culled from family archives abound, evoking Disney's early years, financial binds and production achievements, expertly and entertainingly related. (Simon & Schuster \$9.95)

In *THE BEST OF BUSTER*, Robert J. Anobile has perceptively selected scenes from many of Keaton's comedies, artfully displaying them in sequences of frame-by-frame blowups and highlighting the comedian's inventive and precise style. (Crown \$12.95/5.95)

The classic image of the news reporter as presented in American movies is epitomized in *STOP THE PRESSES!*, Alex Barris' diverting collection of over 300 movie stills with his knowledgeably informative text. (Barnes \$17.50)

In *HOLLYWOOD PLAYERS: THE THIRTIES*, James Robert Parish and William T. Leonard parade some 70 just-below-star level performers whose solid support acting contributed significantly to the movies' credibility. (Arlington \$19.95)

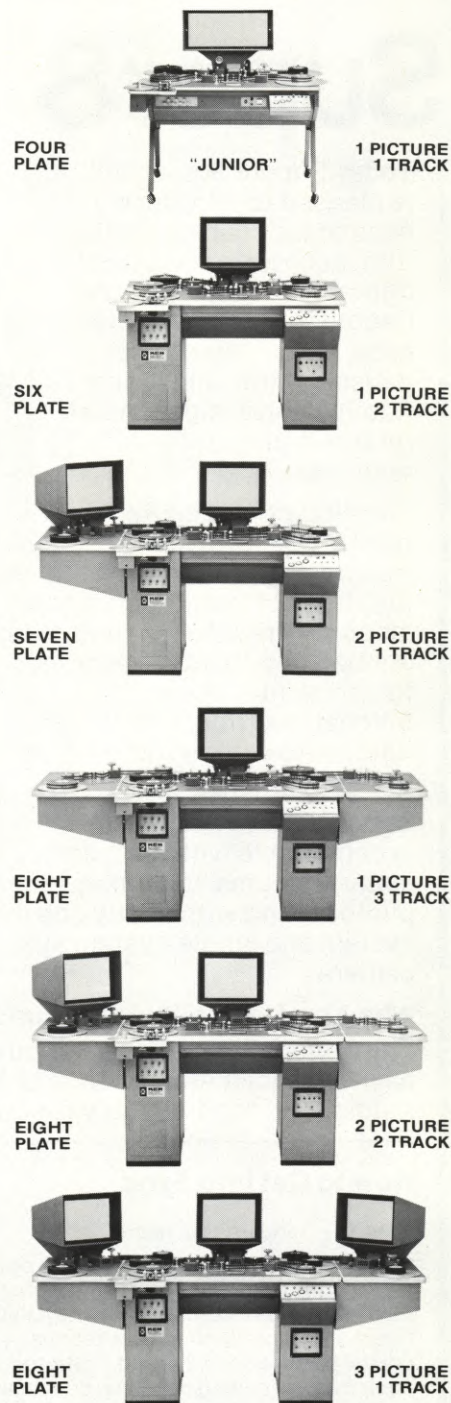
Now available in paperback, *THE MAKING OF KING KONG* by Orville Goldner and George E. Turner tells of the remarkable technical achievements and surrounding circumstances of the original 1933 production. (Ballantine \$4.95)

An illustrated survey of "before the talkies" stars, Anthony Slade's *THE IDOLS OF SILENCE* brings back from the past many famous performers' names, complete with an extensive bibliography. (Barnes \$15.) ■

KEM UNIVERSAL

A Unique, Modular, Extendable Editing System — Quickly Interchangeable For All Film Formats.

Multiple screens and tracks let you weigh the full balance of images dialogue, music and effects.



EAST OF THE ROCKIES

MM Editing Systems Inc.
230 Park Avenue (at 45th St.), Rm. 339, N.Y. N.Y. 10017 (212) 889-0440

WEST COAST

KEM Editing Systems Inc.
6253 Hollywood Blvd, Hollywood California 90028 (213) 461-4143

Professional Super 8

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.

Later, the original group was joined by the engineers who led the \$300,000 development project at MIT to bring every professional



cinematographic technique to Super 8 — crystal sync, quiet cameras, flatbed editing, etc.

Super8 Sound designed complete production systems for Super 8, systems in use in hundreds of schools in the U.S. and abroad, and wrote the definitive "what with" listing of Super 8 equipment — the \$2 Super8 Sound Catalog. More than one thousand of the original Super8 Sound Recorders are now in use by educators, independent filmmakers, and audiovisual departments in government and industry.

Super8 Sound Recorder II

Today Super8 Sound, Inc. is pleased to introduce a second fullcoat magnetic film recorder, 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.

Like Super8 Sound Recorder I, the new Super8 Sound Recorder II combines 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.

Super8 Sound Recorder II is compatible with all sync sound systems, including 16mm pilotone, and with nearly one hundred double-system and single-system sync sound Super 8 cameras.

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.

Unlike 16mm where optical sound is normally prepared by a laboratory, with Super 8 you can then transfer your finished composite master sound track to the edge stripe of release prints, or to the sound channel of a video tape recorder.

Now that Super 8 offers all the professional techniques of sync sound filmmaking at a capital cost one-fifth 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?

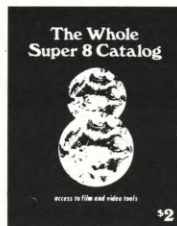
How to Get into Sync

Step 1 — Send us your name

Super8 Sound will put your name on our mailing list and send you a complete technical brochure on Super8 Sound Recorder II. You may also request flyers on our production accessories — silencers, crystal camera controls, and post-production equipment — editing benches, doubleband projectors, etc. If you're ready to act now, call Patti Maine at 617/876-5876.

Step 2 — Send us \$1

For \$1 Super8 Sound will send you a copy of the User's



Manual that accompanies each Super8 Sound Recorder II — 24 pages of technical specifications and detailed applications for the recorder that has become the sound standard of Professional Super 8.

Step 3 — Send us \$2

We'll send you postpaid your own copy of the Super8 Sound Catalog — cameras, recorders, editing benches, projectors, video equipment, systems descriptions, and more — 84 pages that show you how every production and post-production technique of professional filmmaking can now be accomplished in Super 8.

Now, Isn't it Time..... ?



Super 8 Sound, Inc.
95 Harvey Street, Cambridge, Mass. 02140

Release prints from Pittsburgh?

Even Hollywood gets them.

(We now
have
an office
in L.A.)



Wash. D.C. Area Office
Phone 202 554-7019

TOMORROW'S TECHNOLOGY NOW!



“...TVC’s role in ‘American Enterprise’ didn’t end with dailies... TVC is now making thousands of release prints.”

“Once in a while, an idea taps unexpected enthusiasm. *AMERICAN ENTERPRISE* is one of those ideas. Turns out there’s a great hunger in schools across the country, as well as public television, for films on the nation’s economic history.

“*AMERICAN ENTERPRISE*, with Star Trek’s William Shatner as host/narrator illustrates America’s economic history through five half-hour films plus a ten-minute introduction to the series.

“A national subject must have nation-wide coverage. Stock footage was a ‘no-no’. For *AMERICAN ENTERPRISE* that meant a shooting schedule through thirty states — in four months.

“Scripts required on-the-run candid one day and carefully staged and lighted historic reenactments the next. And always fast, fast, fast.

“As cameraman I knew I could rely on ECN 7247 and TVC’s amazing ability to get



the most out of the stock.

“But it was during post-production that TVC really came through. As producer, I faced the toughest editing schedule I’ve seen in 15 years of film making. And Dan Sandberg and his crew delivered beautiful answer prints *fast*.

“TVC’s role in *AMERICAN ENTERPRISE* didn’t end with dailies and answer prints. TVC is now making thousands of release prints for distribution by the Phillips Petroleum Company to most of the nation’s high schools and to public television. “Deliver six demanding films in seven months from ‘Go!’ It was my toughest film assignment to date! I couldn’t have met the schedule without TVC.”

Mike Jackson
Independent Producer-Cameraman
AMERICAN ENTERPRISE a production of
Playback Associates, Inc. New York

15X

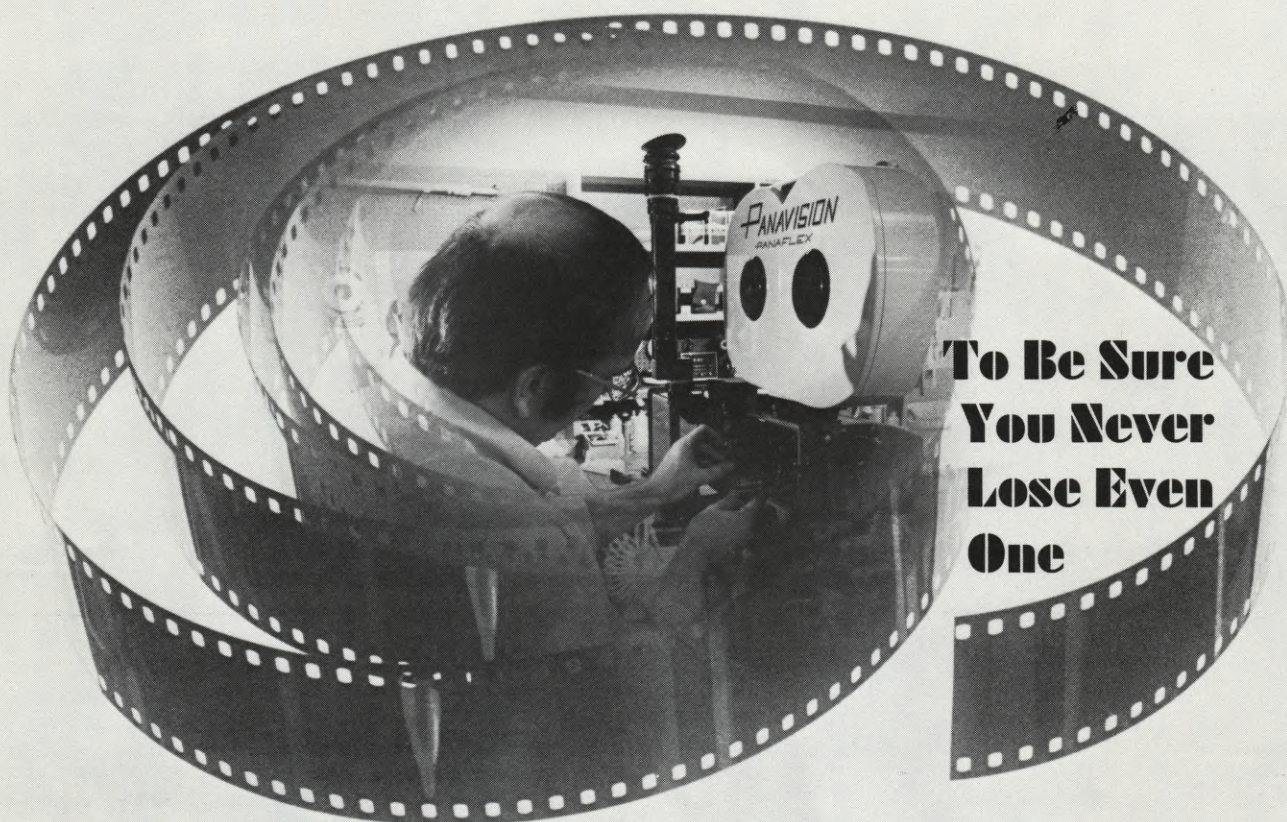


10-150mm, T2.3, close focusing to 2 feet in a package less than seven inches long. Now available in mounts for Arriflex, Cinema Products, Eclair and other professional 16mm cameras.

angénieux corporation of america

1500 OCEAN AVE., BOHEMIA, N.Y. 11716 • (516) 567-1800
13381 BEACH AVE., VENICE, CALIF. 90291 • (213) 821-5080

We Run 30,000 Feet of Test Film Each Week



**To Be Sure
You Never
Lose Even
One**

At Victor Duncan we run an average of 30,000 feet of film each week through our rental camera equipment 'before' it goes out on rental. 30,000 feet just to make sure that every important detail in camera operation is perfect; perfect camera speed, perfect clutch and magazine takeup, perfect loop performance.

And this is in addition to our 'everytime' check of the flange focal depth, ground glass alignment and camera collimation. We know the importance of perfect camera operation when you're on a shoot. The last problem any cinematographer needs is equipment malfunction. So we go that extra step to give you as near perfect operation as possible on all our rental equipment.

On your next picture, call the professionals at Victor Duncan. We know you'll appreciate the results.



VICTOR DUNCAN, INC.

Exclusive Midwest distributor of Panavision®

the check and double check people

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

Ask any film maker about prestige. He'll tell you about MPL.

Living up to our clients' expectations and needs—that's what MPL is all about. And we know what it takes to be good. That's why TV producers, documentarians and 16 mm film makers across the country depend on MPL.

We set the highest standards for our work. And our standards are reflected in everything we do. Send MPL your film and VTR's and see why we're so proud of our name.

PROCESSING: 7247 Color Negatives, B & W Reversal, B & W Neg/Pos, Color ECO and EF, Color Interneg/Pos, Reg. & Super 8, also:

SOUND: Original Recording, Rerecording, Mixing, Interlock Screenings, Sound Optical Transfers, Musical Libraries

PRODUCTION SERVICES: Editorial, Conforming A/B Rolls, Titling, Film Treatments, Film Lubrication, Scripting

PRINTING: B & W Interneg/Pos, B & W Reversal, Color Interneg/Pos, Kodachrome Prints, Ektachrome Prints, Printing Masters, Reg. & Super 8, also:

SPECIAL SERVICES: Color on B & W Videotape to Film Transfers, 35mm to 16mm Optical Reductions, 16mm Optical with Effects, 16mm to 8mm Reductions

RENTAL, SALES, and REPAIRS: Camera and accessories rented. Repair service and factory warranty work performed.

MOTION PICTURE LABORATORIES, INC., Piedmont Division,
2517 South Boulevard, Charlotte, North Carolina 28203
CINE-CRAFT LABORATORIES, 8764 Beverly Boulevard,
West Hollywood, California 90048



**MOTION PICTURE
LABORATORIES, INC.**

781 South Main Street
Memphis, Tenn. 38101
(901) 774-4944



New Zeiss T1.3 lenses— designed exclusively for Arriflex 16mm cameras.

The fastest matched set you can buy,
and the closest focusing. Designed for the
Arri bayonet mount. Zeiss quality.



Five T/1.3 lenses — three of them available now.

To take advantage of the newest emulsions and camera technology, our goal was to make the *best* matched set of 16mm lenses available. So we went to Zeiss.

New designs

The Zeiss designers had the unique advantage of *starting from the beginning*. No adapted 35mm designs. No compromises with back focal distance.

The hard way

A brand-new design, commissioned specifically for *one* film format and *one* brand of camera, takes more time and

costs more money to develop, naturally. But, given a good designer, you get a better lens.

Matched set

What we've got now is *three* lenses — 12mm, 16mm and 25mm. They're all f/1.2, T/1.3. Two more T/1.3s are in production — a 9.5mm and a 50mm.

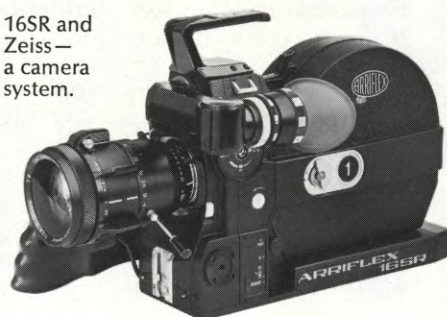
Close focus

Minimum focusing distances: For the 12mm, 8 inches; for the 16mm, 10 inches; for the 25mm, 15 inches. They all stop down to f/11. And they're designed to deliver Zeiss quality at *every* stop, not just wide open.

For Arri only

Zeiss is making T/1.3 16mm lenses exclusively for us, in the steel Arri bayonet lock mount only. Usable with the 16S/B, the 16M—or the 16SR. The new emulsions, the 16SR camera and these lenses add up to a state-of-the-art 16mm *system*.

16SR and Zeiss—
a camera
system.



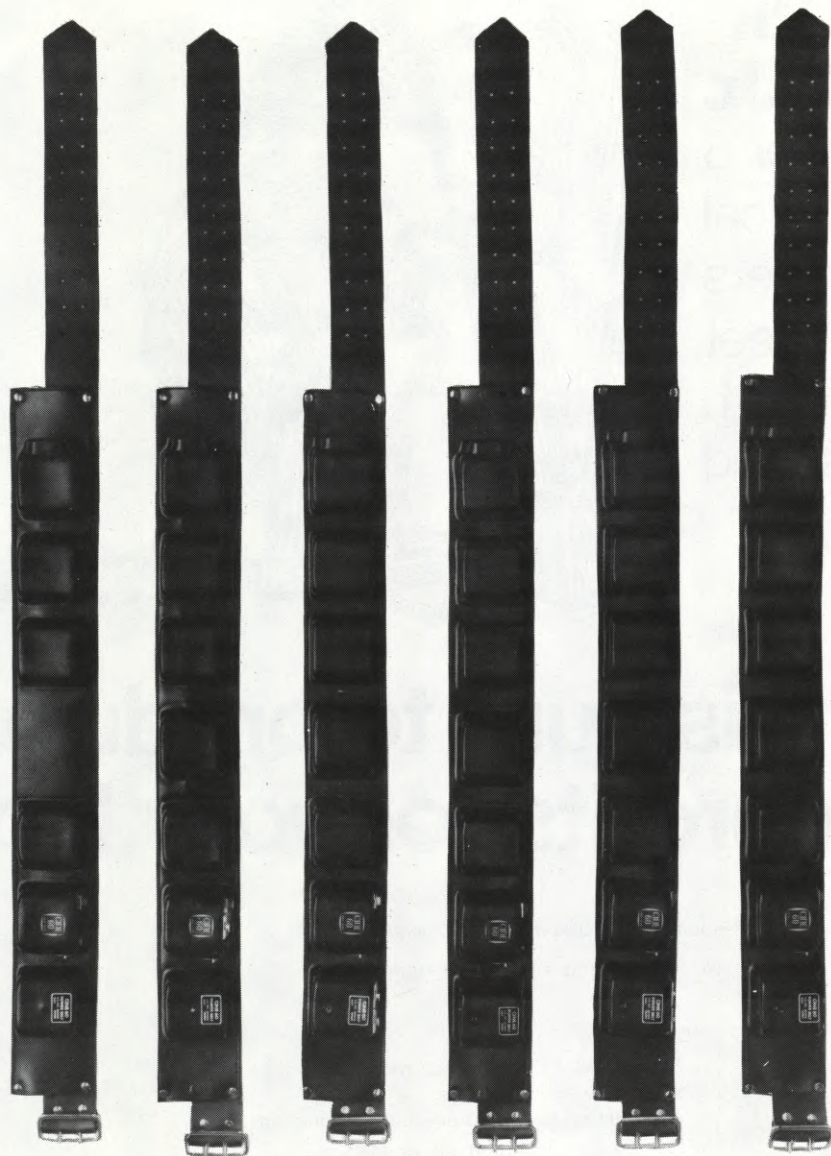
ARRI

ARRIFLEX COMPANY OF AMERICA

Arriflex Company of America: P.O. Box 1102C, Woodside, New York 11377; phone: (212) 932-3403. Or 1011 Chestnut St., Burbank, Calif. 91506; phone: (213) 845-7687.

SATISFY YOUR NEED FOR POWER

ANY WAY YOU WANT IT.



Film, video or lighting, wherever and whenever you need portable power, you can rely on Cine 60. For over a decade and a half, we've helped the industry film in "impossible" locations with battery power that's so reliable, we've become the industry standard. Our rechargeable battery systems—from 6 to 30 volts and up to 7 ampere-hours—have "liberated" camera people to shoot while sky-diving, skiing, cycling and spelunking (to name but a few).

Over the years, we've made a number of improvements, including higher capacity, dual-voltage charging, ruggedized cases and quick charging. And now, you can have Cine 60 performance in handy Power Packs, as well as our popular Power Belts.

Whatever your need for power, talk to us—or send for our catalog. You'll be very satisfied with the results.



U.S. Pat. No. 3,274,476 German Pat. No. D.B.P. 1,264,001

Cine 60 Power Belts and Power Packs for motion picture and video. Available in standard and quick-charging versions—6-30VDC, up to 7AH. Matching, focusing sun-guns available, with unique swing-away filter holder. Contact us for specifications and prices on these and other exclusive Cine 60 products.

CINE 60
INCORPORATED

630 Ninth Avenue, New York 10036 (212) 586-8782

© 1975, Cine 60, Inc.

the "COR"
 and **COR Jr.**
 a duet of super 8
 Continuous Optical
 Reduction printers
 that play sweet
 tunes of both
 quality and speed



**One of them is sure to produce
 higher profits for your lab!**

- Continuous Optical Reduction • Resolution in excess of 108 line pairs/mm
- Aerial image optical system for sharp, cleaner prints • f/2 Illumination System

"COR-Jr"

- Speed—180 FPM on negative side
- Color Additive, Manual Light Valves only
- Silent only
- Uni-directional printing — direction of film travel available in either left or right

"COR"

- Speed—180 FPM on negative side with light changes. 400 FPM on negative side—one light printing
- Color Additive: Automatic or Manual Light Valves
- Silent, Optical or Magnetic Sound
- Bi-directional printing—no negative rewinding or rethreading



PETERSON ENTERPRISES, INC., "the printer people"

1840 Pickwick Avenue, Glenview, Illinois 60025 (312) 729-1010 Telex: 289-438


Peterson International Ltd. Subsidiary of Peterson Enterprises, Inc.



The new Spectra® Electronic Meters: Sensitive and accurate beyond your wildest dreams!

Imagine a meter that's able to give you readings in light so dim it requires an 8-minute exposure at f1.4 with ASA 25 film! That can go from there to the brightest snow scene... and read both instantly, with utmost accuracy!

This is one measure of the capabilities you command with the new Spectra Series II meters. Built with silicon blue cells and solid-state electronic circuitry, they offer total accuracy from 0.004 to 100,000 foot-candles—a twenty-five-million-to-one lighting ratio!

They also give you instant, direct f-stop readings for still and cine cameras with the touch of a button. Choice of incident or reflected light measurements. And a complete new accessory system, too. Your dealer is ready to demonstrate these remarkable new Spectra meters to you. Or write for Lit/Pak P-70. Ehrenreich Photo-Optical Industries, Inc., Woodbury, N.Y. 11797. 

New Spectra® Combi™ II

- Widest sensitivity range: EV minus 6 to plus 18.5 with ASA 100.
- Exclusive dual silicon cells for built-in incident or reflected measurements; choose either or average both simultaneously at the flip of a switch.
- Wide-range calibrations: exposures 8 hrs—1/8000th sec., 1-256 fps; apertures f0.7—f90; footcandles 0.004—100,000; ASA 0.1—25,000.
- Pointer "memory" lock.
- Accessories: 1° spot attachment, fiber optics probe, enlarging/densitometry attachment, ground-glass reader, microscope/telescope adapter.

New Spectra® Professional™ II

- Sensitivity range EV minus 5 to plus 18.2 with ASA 100.
- Incident or reflected measurements without accessories.
- Easy-to-read scales: exposures 8 hrs—1/8,000th sec., 1—256 fps; apertures f0.7—f90; footcandles 0.008—80,000; ASA 0.1—25,000.
- Pointer "memory" lock.
- Accepts same accessories as Combi™ II.

New Spectra® Lumicon™

- Silicon-cell footcandle meter (for illuminance measurement only)
- Three measuring ranges: 0.004—10 fc, 0.4—1,000 fc, 40—100,000 fc.
- Pointer "memory" lock.
- Accepts accessory 1° spot attachment for direct Foot-Lambert (luminance) readings, plus all other Spectra Series II accessories.



A whole new scene for editors!

THE ONLY FLICKERLESS PICTURE HEAD IN PRODUCTION

*...available now on
Moviola M-84A, M-85A, M-86A
Console Editors!*



WRITE, WIRE OR CALL FOR FULL INFORMATION

magnasync

moviola

magnasync/moviola corporation

A Subsidiary of Craig Corporation

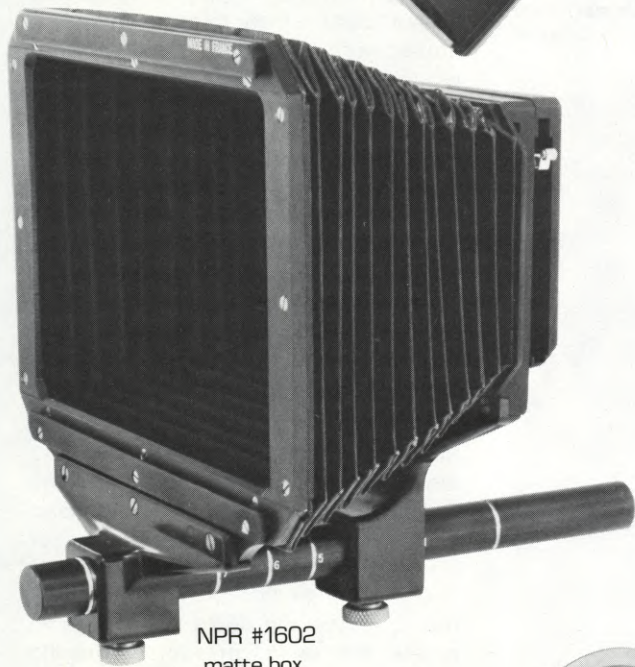
5539 RIVERTON AVENUE, NORTH HOLLYWOOD, CALIFORNIA 91601 / (213) 877-2791



take advantage of big advantages

You already know some of the FRENCH ECLAIR ACL's big advantages: low profile; five second magazine change; designed-in flexibility; silent operation; light weight. To these we added a multi-speed crystal motor, an LED-7 thru the lens exposure guide, and a brighter and more flexible image-erect view finder. And now a big new advantage: LOWER PRICES.

(You can now save \$1,900 on a FRENCH ECLAIR ACL #2109 camera pack at our new prices.) You get LOWER PRICES on FRENCH ECLAIR accessories and FRENCH ECLAIR parts, too. In this industry you need all the advantages you can get. And when you get more camera for your money, that's a big advantage.



NPR #1602
matte box

Official French Eclair service agent:
SABA CAMERA SERVICE
905 N. COLE AVE.,
HOLLYWOOD, CALIF. 90038



SOREMEC U.S.A. INC.
eclair
905 N. COLE AVE.
HOLLYWOOD, CALIF.
90038

Hollywood (213) 464-2125
New York (516) 889-4810

BEHIND THE SCENES OF

King Kong

The most famous film fantasy of all time is brought to the screen a second time around with such consummate skill and artistry that it could well serve as a "living textbook" of modern cinema technology

Starting with "THE POSEIDON ADVENTURE" and continuing on through such epics as "EARTHQUAKE", "THE TOWERING INFERNO", "JAWS" and "THE HINDENBURG", the master technicians of Hollywood have, during the past several years, illumined the screens of the world with a dazzling display of cinematic magic.

Now comes Dino De Laurentiis' updated version of "KING KONG" for Paramount release, a production that cost more than any of those previously mentioned and may top them all in terms of sheer spectacle.

"How does that grab ya?" might be a logical question, as Kong scoops Dwan (Jessica Lange) up in his big hairy paw. The hydraulically operated giant hand was so superbly articulated that it could simulate every movement of an actual human hand. Fail-safe controls were built in to keep it from crushing Miss Lange, who plays the role made famous in the original "KONG" by Fay Wray.

The original "KING KONG", released by RKO in 1933 and long since canonized as a cult classic, starred a "giant gorilla", actually played by an 18-inch puppet animated by means of masterfully executed single-frame stop-motion. The new version of "KONG" doesn't piddle around with any such Lilliputian prop. It has been done on the grand scale, starring a "life-size" Kong more than 40 feet tall and brought to life through a maze of space-age hydraulics and electronics.

Expatriate Italian producer De Laurentiis, for the past several years a dynamic force in American film-

making, is a man who thinks big and he has spared no expense (almost \$25,000,000) in bringing Kong to life again on-screen. The enormous complexity of his undertaking became evident more than a year ago, when he began assembling craftsmen, contracting for vast Hollywood sound stages, overseeing construction on the elaborate sets, and conducting a search for locations and a young actress to portray Kong's hapless romantic interest, the role made famous by Fay Wray in the original version more than 40 years ago.

The role was finally assigned to Jessica Lange, a New York model who had never appeared in a film, and Jeff Bridges and Charles Grodin were chosen as her co-stars.

John Guillermin, whose most recent film was the highly successful "THE TOWERING INFERNO" was contracted to direct and Richard H. Kline, ASC, was assigned as Director of Photography.

In adjoining sound stages, carpenters put up scaffolding from which cameras could record, from many angles, the enormous figure of Kong; seamstresses worked on the costumes for hundreds of extras; plasterers made molds that became the realistic rocks the humans crawl over to escape from the rampaging Kong, and skilled cameramen experimented for hours with the latest cinema techniques to bring Kong brilliantly to the screen.

In its vastness, not only did the film spread over seven sound stages, including the biggest one existing in Hollywood, but across the Pacific Ocean to Kauai, the loveliest and most remote island in the Hawaiian chain, and across a continent to New York City where filming took place in June, 1976.

For three weeks the company shot on the Kauai coast, bringing boats through surfs running as high as 12 feet, to get footage of the crew from the *Petrox* coming ashore on Skull Island to begin the dangerous search for Kong.

On one of the last days on the island, the company laid down a fog bank to create the eerie, mysterious feeling surrounding Kong's home.

Returning to Hollywood in March, the company shot for a week on the supertanker, *Susanne Onstad*, out of Oslo, Norway, and on a run from the Middle East to the West Coast of America, which in the film provides the transportation for Kong in captivity from his jungle island to New York City.

Then the company returned to the

Continued on Page 76





(LEFT) Using multiple Panavision cameras, the crew of "KING KONG" prepares to shoot hundreds of Hollywood "natives" in an intricately choreographed number on Lot 2 of the MGM Studios. Although the picture is a Paramount release, it was filmed almost entirely at MGM because of the extensive stage and backlot facilities available there. **(RIGHT)** Firmly in command and fresh from his triumph of guiding "THE TOWERING INFERNO", Director John Guillermin (in knit cap) prepares to stage a scene.



(ABOVE) The natives are restless as they prepare to sacrifice the kidnapped and doped Dwan to their God, Kong. **(BELOW)** After she falls in the mud trying to get away from him, Kong holds Dwan under a waterfall, dunks her in a pool for a quick rinse, then lifts her up to his face, where, in a stunning and tender closeup, he puffs out his cheeks and blows her dry. It is undeniably the start of something big.



(LEFT) Fondled by the fickle finger of Kong, Dwan is at first terrified of him. (Her succinct comment: "Lissen — I don't think this is gonna work.") But after she gets to know him she goes ape over the big lovable slob. **(RIGHT)** Lovesick and lonely, the subdued Kong languishes in his "cell" in the hold of a giant tanker transporting him to America for exploitation by an oil company. (There's a message there somewhere.) As with many a human male, his love for the girl leads to his ultimate downfall — but literally.



THE CHALLENGES OF PHOTOGRAPHING "KING KONG"

By **RICHARD H. KLINE, ASC**

Director of Photography

The making of the new "KING KONG" presented an incredible challenge, and the fact that we were able to achieve its completion very successfully and come up with a visually exciting film was due to the tenacious direction of John Guillermin and the undaunted courage and integrity of Dino De Laurentiis, plus the backing that he and his organization afforded the cast and crew involved in the making of the picture.

From the photographic standpoint the main challenge of "KING KONG" stemmed from the fact that, stated in visual terms, it was virtually a "technique" film. The script called for 90% exterior shooting, but approximately 75% of those scenes had to be created on a sound stage. The creation of exterior atmosphere and visuals on a stage is in itself a difficult task, but a further complication arose from the necessity of blending the action of what was termed a "life-size" Kong with that of a "miniature" Kong. Certain sequences would be shot to include both elements and they had to blend perfectly in order to make such composite scenes work.

Throughout the filming of "KING KONG", because of the enormous time pressures, it seemed as though the sets were always being completed just an hour before it was time to shoot. There was never a chance of thoroughly studying a set beforehand. The last nail was always being driven into it as we were moving onto the stage.

Another difficult aspect was that we

were shooting totally out of continuity. We might shoot a portion of a sequence on one day and then, a month later, come back and do two more cuts for that sequence, returning three weeks later to shoot additional footage. The reason for this was that a portion of the set might not have been completed, or one of the several elements necessary for the compositing of a scene was not ready.

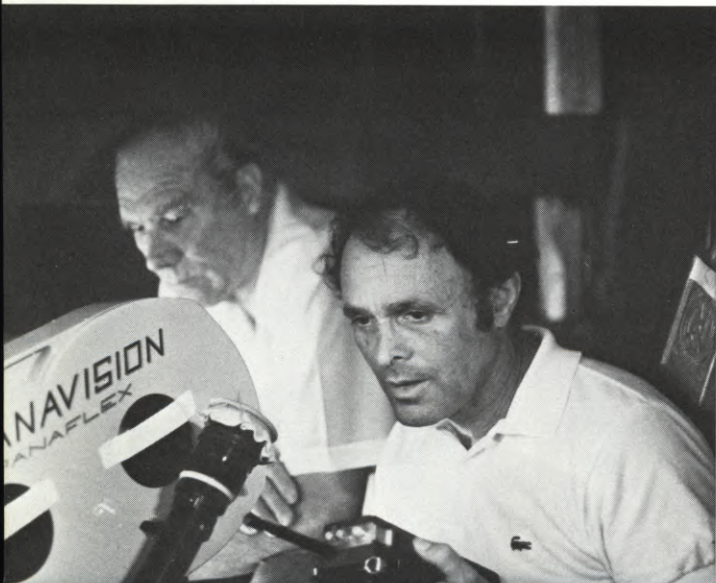
In the early period of developing the techniques for photographing "KING KONG" we explored several ways of doing the special effects photography. We explored front-projection, the classic use of the traveling matte, and blue-screen photography. After a great deal of experimentation in front-projection we were, unfortunately, forced to rule it out, the reason being that front-projection lends itself basically to vertical projection of backgrounds. For example, a straight-down shot or a straight-up shot would be very difficult to achieve in front-projection without the use of angled mirrors or some means of hanging a front-projection screen from the ceiling, or taking the camera up on a scaffolding and shooting straight down — a procedure that would have been very costly and time-consuming. In contrast, by using the blue-screen process you can, in a much simpler fashion, do angular photography, shooting straight up or straight down or whatever the angle might be. Also, once the screen is lighted, you can shoot several scenes in succession, which is a simplification.

Mixing front-projection with blue-screen effects was ruled out because the quality of the respective techniques did not match and there was the danger of a "jump" in texture from one to the other. So, after all our experimentation, it was decided to eliminate front-projection as a possibility and go with blue-screen exclusively.

"KING KONG", which was filmed in Panavision anamorphic to achieve a really "big" look, started shooting in January 1976 outside the Long Beach harbor on a ship owned by the Scripps Institution of Oceanography. For these sequences we were the second ones to use a special gyro-gimbal stabilizing device designed by Nelson Tyler, which served as a means of keeping a perfectly level horizon line in the picture, regardless of the ship's roll. It was an enormous aid to us and we found it very simple to use. I'm certain that it will be an important element in the making of many pictures in the future — particularly films to be shot at sea.

In the film Kong is found on Skull Island, a fictitious locale that has never been seen by anybody because of the thick fog bank which perpetually engulfs it. We had to create this fog bank and it was done very cleverly by means of fog machines developed by Glen Robinson, our special mechanical effects technician. The machines were mounted on three tug-type fishing boats and, under the direction of John Guillermin, who is an expert sailor, the ships were guided by radio into a fantastic pattern that made the

(LEFT) Director of Photography uses a walkie-talkie to give lighting directions to his gaffer on the set of "KONG". Shown with him is his colleague, Second Unit Cinematographer Harold Wellman, ASC, a specialist in miniature and special effects cinematography, who also worked on the original "KING KONG". (RIGHT) In the miniature set of Kong's "cell" aboard the supertanker, Kline holds a small quartz unit which he manipulates as a kind of floating fill-light. This is a favorite technique which he has found to be most effective.





(LEFT) For night sequences of the natives performing their ritual of sacrifice to Kong, the basic lighting was done with 18 Brute arcs mounted on 40-foot forklifts — two Brutes to a forklift. These encompassed the entire five-acre set. To achieve the firelight effect, other lamps were bounced off of sheets of gold mylar placed on four-foot-square frames. **(RIGHT)** On the northern Na Pali coast of the island of Kauai, a boat moves against a huge natural arch in a solid wall of rock hundreds of feet high.

fog bank, which stretched for many miles, entirely believable on the screen. The initial fog bank scenes were shot off Catalina Island at the commencement of filming. A couple of weeks later we ended up in Kauai, Hawaii, where we shot the remainder of the sequence and three ships similar to the ones used in California were employed to carry the fog machines, which had been flown over for the purpose. This segment of the sequence proved to be a much greater challenge because of the force of the trade winds, but again the expertise of John Guillermin came to our rescue and he was able to simulate a credible match in laying the fog around the island of Kauai.

Kauai was a unique location for us, in that the locations we filmed were accessible only by helicopter. I would consider them virgin territory in that they had never before been photographed for a feature film. It was a spectacular-looking locale, with pristine beaches, waterfalls and a natural arch of such enormous proportions that it dwarfed the cast. There were magnificent seascapes and mountain terrain resembling the Grand Canyon. The anamorphic format was perfectly designed for capturing the full impact of this exquisite terrain.

During the preparatory phases of "KONG" we had explored many possible areas for filming, such as Malta, Bora Bora and other exotic islands, but after seeing Kauai we realized that everything we wanted was right there. Without looking further, we decided that this would be our "Skull Island" where a research party lands to explore for oil, but finds King Kong instead and sets out to capture him.

One of the unique locales in which we filmed on Kauai is a volcanic crater that is considered the wettest spot on earth — 50 feet of rainfall annually. We kept a lookout posted to let us know the very moment we could enter this crater, because it's soaked in 98% of the time. When the word came, we flew in immediately and made what I consider to be some of the most spectacular shots in the picture. I don't think anyone has ever been in there before and it's a paradise, but we almost had a fatal mishap while the helicopter was balancing on its skids on a very precarious perch, with the rotors revved to maintain stability. We were unloading the camera from the helicopter when the rotors lost speed momentarily and the chopper kicked backward. Bob Edesa, our assistant cameraman, carrying the Panaflex in his hands, and I leaped to safety just in time and narrowly missed being hit by the rotor blade. Luckily, no actual casualties took place, but it was a very dangerous place to be filming, in view of the fact that it could start raining any second and once the rain fell you could not get out of there until it stopped. That could amount to hours or days, so I think we were very lucky to get what we did in a period of an hour-and-a-half.

We then returned to Hollywood and started shooting on the sound stages. This entailed tremendous problems of matching between the life-size sets and the miniature sets. Both types of sets had to be created on the stage so that trees and other "natural" elements could be duplicated exactly. For example, we had to create our own life-size trees and then miniaturize the same trees in precise detail. The minia-

ture scenes were shot using a six-foot man in a brilliantly designed Kong suit with a mechanically animated head. The suit was conceived by Carlo Rambaldi, a very talented sculptor/technician trained in Paris and Italy.

This matching was complicated by the unavoidable shooting-out-of-continuity procedure which I mentioned before. We could never shoot a sequence in its entirety at any one time. We would shoot a couple of scenes in the life-size set, then do a couple of scenes in the miniature set, then switch to an entirely different set because of its availability. The result was that a sequence that had 15 cuts in it might take three or four weeks to complete because of this type of maneuvering back and forth — playing "musical stage", so to speak.

The sequences we had shot on Kauai had dealt mostly with the trek of the landing party from the shoreline up into the highlands in quest of the legendary huge animal they had heard about. After trekking through valleys, past waterfalls and around forbidding mountain peaks, they arrive at an enormous wall, 47 feet high and 500 feet wide. Although, through the medium of trick photography, this wall appears to have been shot on Kauai, it was actually constructed on the backlot at MGM Studios in an area encompassing five acres.

We filmed both day and night-for-night sequence around this wall. The day sequence centered around a dance that symbolized an offering to Kong of a native princess and it was brilliantly choreographed. The costumes were extremely original and I think that anyone seeing the film will



(LEFT) Italian designer/engineer Carlo Rambaldi surveys the scene, as his creation, the 42-foot hydraulically operated Kong is moved on rails into the shooting location on MGM Studios' Lot 2. **(RIGHT)** Thousands of people crowd the grandstands, awaiting the appearance of Kong, on the huge backlot set. The wall shown here is the same one previously used for the native village sequence, but resurfaced for double-duty. The entire set was also reproduced in miniature.



feel that he's watching something out of a National Geographic travelogue shot in the wilds of Borneo or some other out-of-the-way place.

We then went to night sequences at the wall, which we worked on for three solid weeks, using 500 to 700 "natives". The shooting of these night sequences presented some complicated prob-

lems of lighting. The basic lighting was done with 18 Brute arcs mounted on 40-foot forklifts — two Brutes to a forklift. Once the five-acre area was encompassed by these arcs we were able to go through set-ups quite rapidly. Incorporated in the lighting of these night sequences, in addition to the Brutes, were other lighting units placed to simulate

moonlight and fire effects. To achieve the fire effects I utilized sheets of gold mylar placed on four-foot frames. We bounced Brutes, and sometimes 10Ks and nine-light units, into these mylar reflectors, with the slightest hand movements by the special effects people creating a marvelous fire effect
Continued on Page 68



(LEFT) Rick Baker, wearing the Kong suit, takes a test position, while his image is checked for blue-screen composite on video monitor. **(RIGHT)** Camera crews are positioned in the baskets of giant extendable hydraulic cranes for photographing the 42-foot Kong. **(BELOW LEFT)** The huge ravine set built on the sound stage. The floor was coated with blue-screen material to allow for later matting in of "almost bottomless chasm". Overhead can be seen a few of the white silk parachutes used to cover the ceiling and bounce light for overcast daylight effect. **(RIGHT)** Intrepid explorers inch their way along log bridging the ravine.





At the bottom of a canyon on the sound stage Kong fights a battle to the death with a giant constricting serpent, finally vanquishing the reptile by tearing its jaws apart (the only actually gory scene in the film — and brief, at that). In the original “KING KONG” the great ape protagonist battled a whole menagerie of creatures left over from pre-history, but in the current version, Man is Kong’s major antagonist. The serpent, gliding in on a hidden track, was superbly animated.



(LEFT) Producer Dino De Laurentiis shares a light moment with Director of Photography Richard Kline, ASC, on the set of “KING KONG”. (RIGHT) Kline and Director John Guillermin ponder the next set-up. Their understanding of each other’s ideas was so complete that they required little verbal communication. (BELOW LEFT) An unhappy king — crowned and caged for the amusement of the crowd. (CENTER) Elaborate set-ups like this, complete with Chapman crane, were commonplace in filming “KING KONG”. (RIGHT) A miniature helicopter crashes one of the twin towers in a burst of flame — shades of “THE TOWERING INFERNO”!



THE PRODUCER TALKS ABOUT HIS NEW "KING KONG"

In the tradition of the great film showmen of the past, this colorful Italian producer spares no expense in updating a film fantasy classic, while creating the greatest superstar of them all — forty-two feet tall

In Italy, before moving his production company to America four years ago, "KING KONG" producer Dino De Laurentiis was the impresario of hundreds of films, including such epics as "WAR AND PEACE", "THE BIBLE" and "WATERLOO".

De Laurentiis was born 57 years ago in a little town near Naples. While still in his teens, he took to the road selling pasta from his father's spaghetti factory. In Rome he decided that he wanted to study at the Film Institute, but his father, thinking that this was a whim that would pass, cut off his allowance. Young Dino promptly went out to the studios and got a job as an actor. Soon he had moved to the production side of the business and, by the time he was 20, was running the studio. A year later he decided to produce his own motion pictures and arranged the financing for them himself in industrial Northern Italy. He has been producing his own motion pictures ever since.

Since he moved his operation first to New York and then to Beverly Hills, De Laurentiis has become a dynamic force in American film production, turning out such pictures as "SERPICO",

Producer Dino De Laurentiis (shown with son Federico, who serves as Executive Producer on the film) inspects one of the many miniature sets utilized in "KING KONG". He got the idea for the remake from day-after-day exposure to a poster from the original "KONG" tacked up on the wall of his daughter's bedroom. He spared no expense (almost \$25,000,000) to make it a truly spectacular production.

"DEATH WISH" and "THREE DAYS OF THE CONDOR".

People who have worked with him, such as Director John Guillermin, rank him with such great and gutsy film showmen of the past as Goldwyn, Mayer, Zanuck and Thalberg — an all-but-extinct species.

A tough professional and uncompromising perfectionist, De Laurentiis is also an immensely likeable man, a charismatic figure whose own electric energy and enthusiasm spark his co-workers to deliver more than their best. In the following interview for *American Cinematographer* he discusses his latest "labor of love" — his 25-million-dollar remake of "KING KONG":

QUESTION: Your production of "KING KONG" is the biggest and most expensive film project since "CLEOPATRA". When you first announced it, did you visualize doing it on such a grand scale?

DE LAURENTIIS: It's the only way. When I decided to do "KING KONG", the only thing on my mind was to make something unique — to try to do some-

thing that was pure cinema. By pure cinema I mean fantasy, imagination — and that's really what "KONG" is. The audience wants to dream. They want to stop thinking about the problems they've been having all day. They just want to go to a movie and relax — and "KONG" satisfies that desire very well.

QUESTION: How closely did you try to follow the story line of the original "KING KONG"?

DE LAURENTIIS: Well, basically it's the same story, but the way we did it makes it look completely different — nothing to do with the old "KONG". The Kong of 1932 and my Kong are completely different. In 1932 Kong was a monster. In our picture Kong is not a monster. He is so "simpatico" that when he dies people all over the world will cry. The relationship between Kong and the girl is so fantastic that I don't hesitate to call our "KING KONG" the best love story ever made.

QUESTION: I'd like to ask you about the technical problems of building the Kong that appears on the screen.

DE LAURENTIIS: It wasn't easy, building Kong. We wanted to build him ourselves, so we brought in an Italian guy, a genius named Carlo Rambaldi. He is the only guy in the world who can do with his hands what he has in his brain — there's a direct connection. We spent two million dollars and fourteen months in building Kong. When we built him the first time we made a test and I said: "I don't like it. Let's start again from the beginning." We built the second Kong and I said: "Well, so-so, but this is not what I want." They said: "What do you want? This one looks like a gorilla." I said: "I don't want a gorilla. I want Kong. Kong is unique; he has nothing to do with any apes, nothing to do with a gorilla. Kong must come from what we have in our imaginations. He's something completely special — both a human being and a gorilla — because if Kong is not human he will not create the sympathy and the emotion we need in the picture." By the way — and I'm very serious about this — in this movie Kong acts so well, so fantastically, that he must have an Academy nomination as one of the best actors of the year. When you see the picture you can't believe your eyes.



QUESTION: Can you comment on the advanced technology used in the making of this picture?

DE LAURENTIIS: What is it possible to do with the modern technology we have today? The answer is that everything is possible. You can get any fantastic scene you want onto the screen. You need only two important things: time and money. If you have enough time and money you can achieve anything. By the way, I have changed my entire schedule for future production. I am going to do only this kind of movie — the fantasy movie — because modern technology can give us the chance to do it very importantly and to reach the imagination of the audience.

QUESTION: Even though, by ordinary standards, this film took a long time to make, considering its size and complexity it was completed in a very short time. What was your reason for wanting to get it out so fast?

DE LAURENTIIS: I wanted to get it done in time for a Christmas release. In order to make a successful movie, it's not only necessary to have a good story, a good cast and a good everything, you need also to release it at the right moment. In my forty years of experience in making movies I've learned that if a very good movie is released too late — or too early — it can't be successful. It's very important to time the release of a picture correctly. That's the important reason why I decided to put "KONG" out in December — because the audience is ready for it.

QUESTION: Let's talk a bit about your key technical people, starting with the director.

DE LAURENTIIS: John Guillermin was the best guy in Hollywood to direct this picture. I don't think anyone else would have done the job he did. Technically he is very well prepared, especially in the use of special effects. And I must say the same for Dick Kline; he should get an Academy nomination. All of our people did an excellent job — Mario Chiari, Dale Hennesy, Carlo Rambaldi, Glen Robinson, the Special Effects people — and except for Chiari and Rambaldi, who are Italian, they are all Americans. If tomorrow I were going to do a picture in Europe, I would bring with me these same people. Here in America you have the best film technicians in the world.

QUESTION: Your version of "KING

KONG" seems to be more low-key visually than the original — more night shooting. Is there a particular reason for this?

DE LAURENTIIS: The reason was to create some mystery, a certain suspense, because if you are making a movie today you must have everything. We shot many, many scenes at night, with real night. I don't believe in shooting day-for-night, because you never get a real night atmosphere. You kill all the dramatic impact going day-for-night. I don't like it at all. If you can't really shoot at night, then you must change the script from night to day. It's very expensive shooting at night. For our picture we shot almost 40 weeks, and at least 40% of the picture involved shooting at night. It was very expensive, but we had to do it.

QUESTION: Can you tell me why you selected Kauai as the island where Kong is found?

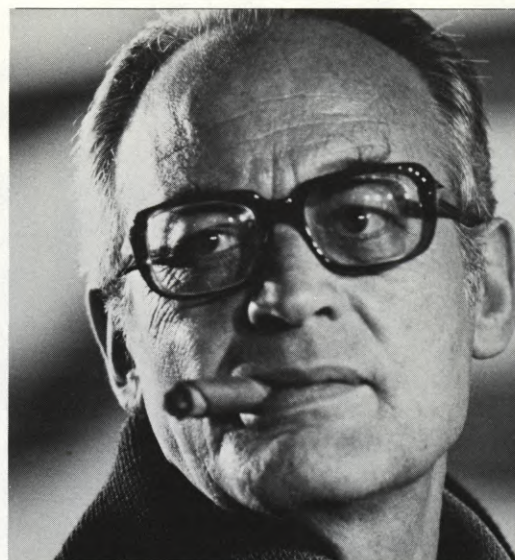
DE LAURENTIIS: What is Kauai in this picture? It is the location for Kong's hideout. If Kong is an ape 42 feet high, then you must give him a special background, a special island. I sent my people around the world to select the best island and they selected Kauai. However, there was a big problem for us there — no road to bring in the people and technical equipment. It was also impossible to land with a boat, so we had to bring everybody and everything in with helicopters every day. We had to use the helicopters for three weeks, but everybody loved the sequence in Kauai.

QUESTION: What about the filming in New York? Did that present any special problems?

DE LAURENTIIS: Not special problems, really. Every feature has its own problems, whether you are shooting in New York or Los Angeles or in Europe, because each picture is different from the other. Making a movie is always rough, but without the problems you do not have a movie. You must live with the problems if you are going to make a movie.

QUESTION: But what about the 30,000 extras you had to handle in New York?

DE LAURENTIIS: In the last sequence? Yes, that was a problem, no question about it, but a usual problem. In making movies you can't be surprised when a problem comes up; you can only be surprised when a problem doesn't come up.



Having moved his film production organization from Italy to America four years ago, De Laurentiis is a dynamic addition to the Hollywood scene.

QUESTION: Is it true that the December 17th release of "KING KONG" involved 2,200 theaters?

DE LAURENTIIS: Yes — 1,000 in the United States and 1,200 for the rest of the world — all released on the same day. I believe it is the biggest opening ever made in this industry. It has been released in several foreign languages — dubbed in French, Italian, Spanish, German, and Japanese. It is the first time an American film has been dubbed in Japanese. There are also three sub-titled versions: Portuguese, Scandinavian and Japanese.

QUESTION: I've heard rumors that there may be a sequel to "KING KONG". What about that?

DE LAURENTIIS: There is no "may be". For sure we will do the sequel.

QUESTION: But he died in this film.

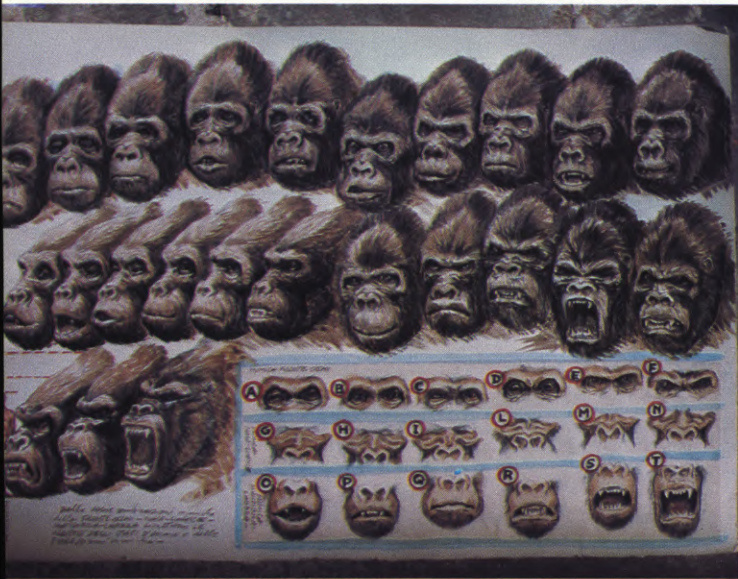
DE LAURENTIIS: Steve McQueen made a picture in which he died at the end, but they made another picture with Steve McQueen. Many stars die at the end of a picture and then go on to the next picture. Kong is a star. We are going to have a new story, a new Kong.

QUESTION: What will you eventually do with the 42-foot Kong?

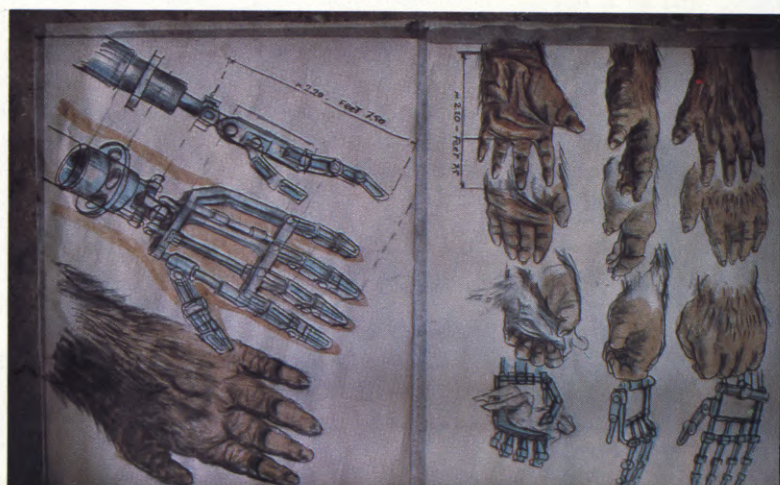
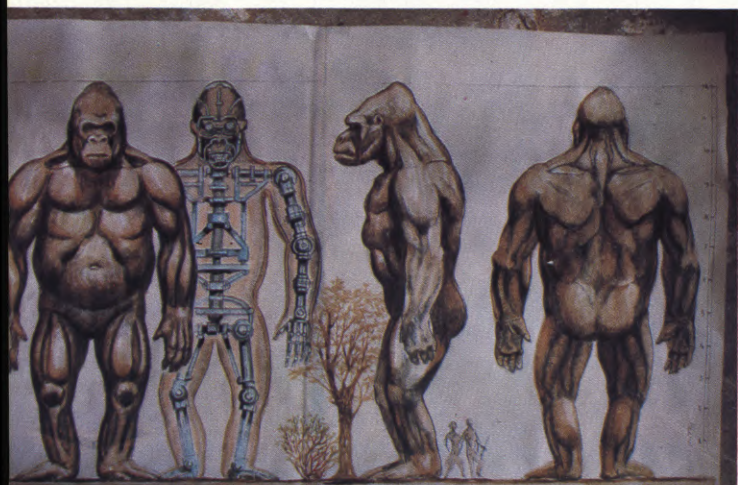
DE LAURENTIIS: We've cut him up and put him away for the next picture. I've already had an offer from Universal and other places to show Kong, places like Disneyland, but I'm not going to do that. For me, he is a star — and the star is waiting to start his next movie. ■



(LEFT) Designer Carlo Rambaldi, the Italian genius whose rare combination of talents made Kong “come alive” most realistically on the screen. A famed artist/sculptor, as well as skilled engineer, he had worked on many big productions in his native Italy. For the new version of “KING KONG” he designed both the life-size (42-foot) Kong and the marvelously articulated heads for the “miniature” (man-in-the-suit) Kong. (RIGHT) One of the hundreds of sketches rendered by Rambaldi — this one showing details of arm movement.



(LEFT) Multiple sketches of some of the expressions required of Kong in the film. The insert at bottom right of this sketch shows six combinations of eye-nostril-snout mobility, which permitted the manufacture of six separate heads, each capable of six or seven different expressions. With approximately 40 expressions at his command, Kong could thus express almost any emotion. (RIGHT) Mechanical details of head and face for the masks. (BELOW LEFT) Sketches of the full-size Kong, shown in relative size relationship to a man. (RIGHT) Mechanical details of the giant hand.



CONCEIVING THE PERSONA OF KING KONG — IN TWO SIZES

An Italian artist/sculptor/engineer applies the genius of his varied skills to creating a Kong — big and small — who is capable of expressing an extensive range of animal and human emotions

By DAVID HAMMOND

On a film like "KING KONG" which employed dozens of the most highly skilled, hand-picked cinema technicians in the world, it might seem that the word "genius" would crop up now and then. But the man for whom his fellow technicians reserved this singular accolade was a wiry, intense, totally dedicated Italian artist/sculptor/engineer named Carlo Rambaldi—for it was he, more than any other individual, who was responsible for almost literally bringing Kong to life on the screen.

In the beginning, a talented makeup artist, Rick Baker, presented for Dino De Laurentiis' approval a gorilla suit of his own devising which he proposed to wear himself in order to animate the character of Kong, but after preliminary camera tests, it was decided that this suit was not nearly flexible enough to simulate truly life-like movements — let alone the wide range of almost human expressions which Kong was supposed to be capable of.

It was at this point that Carlo Rambaldi was brought over from Rome for consultation on the problem. A highly respected fine artist and sculptor in his native Italy, he had worked on many motion pictures and had earned a reputation as a wizard at mechanically animating a wide range of otherwise inanimate objects, most notably a "life-size" wooden "Pinocchio", the star of a popular television special.

Arriving in Hollywood during October of 1975, Rambaldi launched into intensive research on the "KING KONG" project. It was "get to know your gorilla" time. He studied gorillas in still photographs, on film and "in person" during repeated visits to the San Diego Zoo.

Following that, he studied the storyboard and did a detailed breakdown of the script, ascertaining where and how Kong would appear during the course of the film story. He made special note of scenes in which closeups of Kong had to be utilized in order to express specific emotions. He listed the scenes in which a "miniature" (man in a gorilla suit) Kong must appear, and those which required the awesome presence of a life-size Kong.

By then it had become obvious that Kong had to be available in two sizes, with both articulated to perform movements that would be as lifelike as possible. Rambaldi also realized that it would be necessary to create "extra" full-size arms and legs in order to film

certain detail shots.

The first major decision that had to be made had to do with the scale of the full-size KONG: How tall should he be? Rambaldi approached this decision by pegging the size of the giant hand in relationship to the size of the girl it would be grasping, and he arrived at the figure of seven feet. Since the height of a primate averages six times the length of the hand, the total height of the giant Kong was established as being 42 feet.

As a result of all his research, Rambaldi arrived at the following set of parameters in order to meet the demands of the mechanical special effects to be incorporated into "KING Kong"
Continued on Page 52



(ABOVE RIGHT) Carlo Rambaldi fits one of the seven Kong head-masks which he designed onto the body of Kong. Each of the heads is a unique entity and is capable of an average of seven expressions, permitting Kong a wider gamut of emotional expression than mere humans enjoy. (BELOW) Several stages in the design evolution of a Kong head.



FROM TOWERING INFERNO TO TOWERING GORILLA

The director who burnt down the tallest building in the world now takes on the biggest beast ever to stride across the screen — and accomplishes the feat with dogged tenacity, high technical skill and tender loving care

John Guillermin, the director of "KING KONG", is an expert at working on a large canvas. A native-born Londoner, he had done a brilliant job of burning down the world's tallest building in "THE TOWERING INFERNO", so he wasn't intimidated by the prospect of directing a 42-foot ape.

His extensive experience in directing feature films for the past 25 years in Europe and the United States had amply prepared him for his rendezvous with one of the most famous characters in film history. His list of outstanding directorial achievements includes "THE BLUE MAX", "BRIDGE AT REMAGEN" and "SKYJACKED".

Attending the City of London School and Cambridge University, Guillermin, born in 1925, volunteered for service in the RAF during World War II. Of French parents, he then went to Paris to produce and direct documentaries before returning to London and the J. Arthur Rank Organization. His first feature film was "TORMENT", released in 1949.

In 1950, he wrote the screenplay for "NEVER LET GO", starring Peter Sellers. But his principal interest remained directing, compiling a list of impressive and diversified credits, including "WALTZ OF THE TOREADORS", which brought him to the attention of Hollywood. Soon he was in America directing feature films. On this side of the Atlantic, his credits included "RAPTURE", with Melvyn Douglas; "GUNS OF BATASI", co-starring Richard Attenborough and Mia Farrow, "P.J.", "HOUSE OF CARDS", "EL

CONDOR" and "SHAFT IN AFRICA".

A pipe-smoking, patient man who does not lose sight of the details that go into a big picture, Guillermin found himself spending most of his working time on this side of the Atlantic, and he moved from a rambling house outside London to Los Angeles with his wife, the former actress Maureen Connell, and their two children, Michele and Michael.

In the following interview for *American Cinematographer*, Guillermin discusses what was certainly the most demanding technical challenge of his career: the direction of Dino De Laurentiis' "KING KONG":

QUESTION: The new "KING KONG" obviously began with Dino De Laurentiis, so it would seem logical to begin this interview by asking about your working relationship with Dino.

GULLERMIN: Dino is Dino. He runs the show, but he doesn't interfere. He lets everybody function, but he's able, in his utter crazy wisdom, to get people to give their 100% best and yet be the Godfather — in the same way that Darryl Zanuck was or like Thalberg, I'm sure, was — maybe even Louis B. Mayer. They say Mayer was a villain, but I don't believe it. I think Mayer allowed people to work for him and he guided them in a sort of avuncular way to the point where they felt good because they were making a Metro picture, whatever that meant. That's the way it was with the whole crew on

"KING KONG". The love, the interest they showed for this film was amazing. They'd come back to watch what was going on, even though they weren't on call. This picture had the greatest mixture of race and every other bloody thing — a marvelous bunch of people. We had no time, but they all delivered great. And there was Dino, absolutely insane, at the head of it. No one in his right mind could have started this bloody picture in January and finished it in November. There is no way — not with what we had to go through. So, in that sense, he's crazy — just as Zanuck was crazy and Thalberg and Mayer and all the others. How many people do you find that would spend the amounts of time that Dino puts in? His whole life is film. After putting in a long day, at 8 o'clock in the evening he has film delivered to his house, because he wants to see a picture that will obviously run until 11 or 12. Then at five in the morning he's sitting there making transatlantic calls. I've never run into anybody like that before. Making films is a very passionate business, and Dino has so much bloody passion. You've got to have a guy like him that you can knock against, someone who allows you to rebound, gives you the dough, leaves you alone and doesn't screw you up when you're putting it together. It's not often you find that combination.

QUESTION: You've mentioned Dino in some pretty fast company. How does he actually compare as a producer with some of those legendary figures

London-born director John Guillermin, long a resident of Los Angeles, is no stranger to "big" pictures, having directed such large-scale epics as "THE BLUE MAX", "THE BRIDGE AT REMAGEN" and "THE TOWERING INFERNO" — but the new "KING KONG" — because of its enormous technical complexity and shortened shooting schedule, proved to be his most demanding assignment to date. He inherited the job after Roman Polanski, previously scheduled to direct, confessed that he "didn't know what to do with the monkey." Guillermin obviously did.



you've named?

GUILLERMIN: I had personally worked with only one great producer over a period of 20 years, and that was Darryl Zanuck. He was the only one that I was lucky enough to meet. Then I met Dino. He's the second one — and that's the league. I hope there are others somewhere, but I don't know who they are.

QUESTION: What was your method of working together?

GUILLERMIN: The same as with Darryl. I never spoke to Darryl about a picture. We'd get a script out and we would agree or disagree in a meeting; we would put our ideas up. We would hardly talk about dailies, because Darryl wouldn't look at them. Dino looks at every frame of dailies, but never comments on them. Then, after three or four months of rough cut, we'd exchange ideas and discover that we were so close in taste, or whatever that magic word is, that we'd have to adjust only a few little things. It worked in an incredibly open and relaxed fashion.

QUESTION: How did you get involved in this project in the first place?

GUILLERMIN: Dino had Roman Polanski interested in doing "KING KONG". Then Roman, two or three days later, told Dino that he didn't know what to do with the monkey. Dino called me and said, "Do you want to do 'KING KONG'?" I said, "Yeah." He said, "Do you know what to do with the monkey?" I said, "I've been there before and I know what to do with the monkey." And that's how we started "KING KONG".

QUESTION: In approaching what many people refer to as the "remake" of the 1932 "KING KONG", you must have run that picture several times. To what degree did you attempt to remake it faithfully?

GUILLERMIN: I looked at it once. Loved the story; loved the subject. The special effects were the greatest in the world — just a piece of sheer brilliant technical hocus-pocus. Out of that stop-action they got the movement of humanity. In "JAWS" the shark was a monster, a Japanese monster — which was great. But in "KONG" we had a beautiful, marvelous monster who was also intensely human. That's what the kids remember of the original — and I'm one of the kids. But in doing the film, I didn't want to remake it. I wanted to make it.

QUESTION: Beyond the original, what

did you want to do with it that hadn't been done before?

GUILLERMIN: I wanted to make a story about a 42-foot ape who falls in love with a girl in the middle of a jungle in contemporary times. It's a romantic, Gothic love story. It's so classic: a doomed love story. Doomed, I hope, only for me, not for the audience.

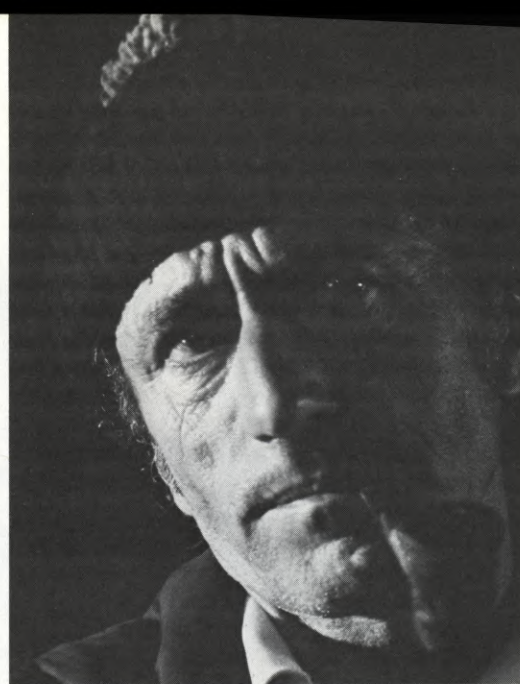
QUESTION: Did you feel at all intimidated by the fact that you were following such a classic as the original? Or were you able, in a certain sense, to ignore it?

GUILLERMIN: No, I discarded it. Terribly irreverent of me to say so, but I discarded the original. For me it didn't exist. Otherwise, I couldn't have made the bloody picture, you know. You can't remake something — even if it is a remake. I tried to make a story which I felt was fairly timely, a story of today. I think the horror of whatever we want to invest the beast with is all there, and it has overtones of the truth about society — but also it's terribly tender, very vulnerable, utterly simplistic — which is the way I work. To me it was a very personal little film. I'm very pleased I was given a chance to make it. Whether it does well is another matter.

QUESTION: "KONG" is a picture that demands the most sophisticated technology in every frame. How about your approach to the sheer mechanics of putting the thing on the screen?

GUILLERMIN: Well, I worked since last August — which is less than 18 months — breaking the "KONG" story down into 900 shots (with each shot insurmountable in its difficulties) and then taking each shot and smacking it through. Each shot had four or five composites — some of them more, some of them less — just the utter grind of day-to-day, dawn-to-dusk labor, that's all. The secret for me, as far as working on this sort of nonsense is concerned, is that I'm able to break it down into pieces, into shots that everyone can understand. Otherwise the concept would get lost and there would be no way you could work on it. You can't work on generalities. So I finished breaking it down into 900 shots last December and those 900 shots are all in the picture. Some of them are more successful than others, but they've all taken days and weeks of chasing out.

QUESTION: Can you describe in a bit more detail just how you went about breaking it down into those 900 shots?

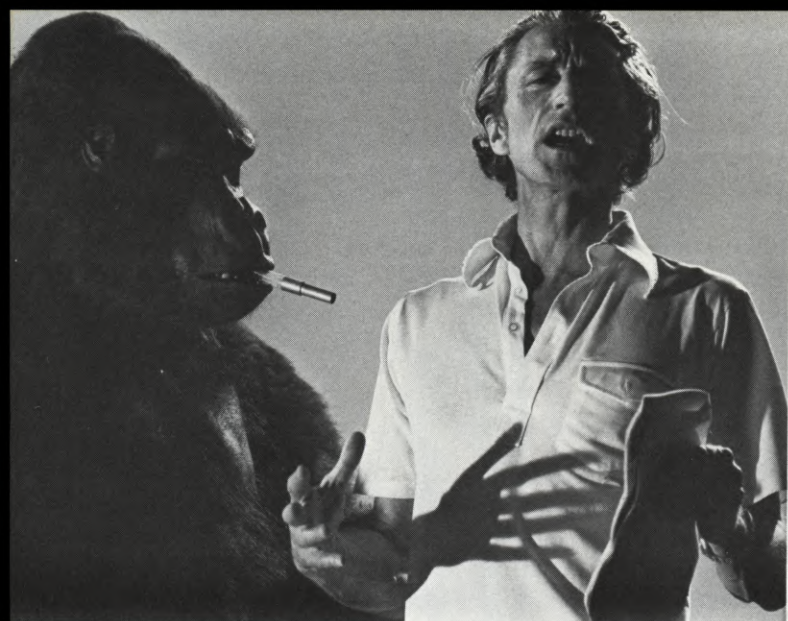


A demanding taskmaster, Guillermin is also a sensitive creative artist and highly skilled technician, with a fierce passion for filmmaking.

GUILLERMIN: My approach to breaking it down requires that you know exactly what the technical processes are — which I know and many other people know — but these help decide what you're going to do. Then what you are going to do has to be equated with what you can do. At this point you need a mediator who tells you that what you want to do you can't do. In this case, I didn't have a mediator, so I knew what I wanted to do and I had to do it. Otherwise it wouldn't be done right. It's a hard day-to-day slough. What you need is a comprehensive knowledge of what can be done in Hollywood by the best technicians. Your thinking, which is limitless, has to be bounded by that and then you split that into 900 shots. We spent months putting those shots through the mill and shooting and achieving, finally trying to get them into the picture the best way we could, without them being spotted as artifice.

QUESTION: From the standpoint of mechanics, what particular technical obstacle did you find the most difficult to surmount?

GUILLERMIN: The most difficult challenge, from the moment the project was conceived, was how to introduce Kong. Kong has to make an initial appearance on the screen — but how? I wrestled with that problem alone because there was no way that anybody could help. You make up your mind and shoot it and then it either works or it doesn't. From the time that I finished the storyboard in November, until Feb-



Off-stage a very private, rather shy person, Guillermin becomes a crashing extrovert when it comes to demonstrating for actors how he wants a scene to be played. (LEFT) He shows Rick Baker (in ape suit) how Kong must howl in agony as the attacking helicopters shoot him down. (Baker is not smoking a cigarette. The tube in his mouth helps him breathe inside the sweltering suit.) (RIGHT) How does a 42-foot gorilla walk? Guillermin demonstrates, while Baker observes.

ruary, I still hadn't made up my mind. I finally decided to go with my first idea and introduce him in huge closeup — because he was the biggest thing on earth. The only thing I could think of was that you had to see nothing except his eyes and a bit of snout. We shot it with a 1,000mm lens. As far as I'm concerned, it works in the picture — but it was an awkward moment, my most difficult problem, and the one that I wrestled with the most.

QUESTION: There could have been a temptation — and perhaps a legitimate one — to feed a lot of shock value into a subject like this, because a 42-foot ape is not something that you see at Hollywood and Vine every day, but the film is interestingly devoid of shock. I think there was only one shot that had obvious shock value to it and that was the one where a native dancer rears up into the frame suddenly. Was it a purposeful move on your part to avoid obvious shocks?

GUILLERMIN: Oh, utterly! The very idea of Kong is, in itself, a shocking concept. If you were to shock people who were looking at a shocking story it would be too much. You can't parody an idea like this. Everything in the story has to look and feel as undramatized as possible — even though it is highly dramatized. Otherwise all fantasy is lost. If you try to shock people with a shocking idea you're dead. In "JAWS" they decided — and rightfully so — to make a shark the most shocking thing you've ever seen, and they succeeded brilliantly. But we're not talking about sharks; we're talking about a 42-foot ape, and there are none of those

around, that we know of. So when you tell a story about a shocking thing you have to tell it as realistically and as evocatively as you can. Fantasy relies on non-shock, because the shock is experienced traumatically throughout the fantasy. The shock is permanently resounding, if it works at all. Beyond that, everything has to be cool, as it were. Does that make sense?

QUESTION: In other words, piling shock on shock would be gilding the lily?

GUILLERMIN: Well, it would explode the lily. It would destroy it.

QUESTION: Can you tell me about some of the problems you experienced in shooting the climactic sequence in New York?

GUILLERMIN: They were just the normal location shooting problems, except that, unfortunately, we didn't have enough time. We had a crowd of 30,000 people in the World Trade Center Plaza, but they were unbelievably well-behaved. Someone stole the eye and one of the fingers of Kong and the next day they called the production office and said, "Do you want to buy Kong's eye and finger back for \$5,000?" So typical — trying to make a buck out of it. We had to remake them out of wood. But that was just a normal day in the life of filming "KING KONG". I can't equate that to anything particularly difficult. I've had that sort of nonsense going on all the time.

QUESTION: Do you have any com-

ment on the shooting that took place in Hawaii?

GUILLERMIN: Logistically I was very happy with Hawaii, because we found a location on the north shore of Kauai — the Na Pali shore — that was unexplored and inaccessible, except by helicopter. I had to make a snap decision as to whether it was possible to airlift a first unit every day to that location, along with everything else that we needed. It was like a wartime operation in low key. We got some very fine pilots who didn't take risks, but who flew to the limit of their capacities. We had no near-accidents, even though we flew the whole unit to that remote location every day. It was a very wild shore and there was no way to get the people out or get food to them except by helicopter — but it worked. I'm very happy that we found the people who were able to do that. No line pilot could have done what they did. They were just extraordinary pilots, terrific guys!

QUESTION: This is probably the most thoroughly storyboarded film I've ever seen — just incredible. How closely did you work with the illustrator in order to arrive at this storyboard?

GUILLERMIN: I broke the script down, as I said, into actually 870 shots. Then the illustrator, Mentor Huebner, and I sat for a total of probably two months and he sketched, as best he could, drawings for each shot. However, I got exasperated with the drawings because I didn't have enough time with Mentor so that he could draw exactly the detail of each scene. Our confusion arose out

of the fact that there was no time to have the drawings accurate enough. Anyway, drawings are always amorphous and inaccurate to some degree because they indicate only the one frame in each shot. Nevertheless, Mentor did a marvelous job of putting down on paper shot-by-shot what I asked him to — each little moment. He thought I was crazy, actually, because we were going through stuff that was just ridiculous — with two full-sized hands and the girl in the foreground and Kong in behind. Mentor is the finest illustrator I've ever worked with and I wish I'd had another three months so that we could have made things a little clearer in the pictures. But I think Mentor did a great job and he had only two months in which to do it.

QUESTION: Can you tell me about your working relationship with the Director of Photography, Dick Kline — the planning of the photographic concept, and so forth?

GUILLERMIN: Our working relationship was just automatic, immediate, eye-to-eye, wing-to-wing. We hardly talked. We just knew what we were doing instinctively, each one of us. He did a perfectly marvelous job. Dick and I hardly talked about concept; it was just there. We were so inside each other that there was no way that each of us would not know what the other was doing. It was a perfect professional marriage — one you dream about.

QUESTION: In your own mind, from the beginning, you must have had a sense of visual style, a concept of how you wanted it to look, the mood you wanted to create. Could you tell me a bit about that?

GUILLERMIN: We were doing a low-keyed, mysterious, modern Gothic piece of adventure-fantasy, whatever you want to call it. That's what it was. Basically it was like a black and white picture, in the sense that it was non-color. It was a matter of using color like Grimm would have used it — a Grimm's fairy tale.

QUESTION: What are your comments on the blue-screen matting techniques created so extensively by Frank Van Der Veer for this picture?

GUILLERMIN: Frank did the best soft-edge blue-screen mattes ever done in Hollywood, in my opinion, and he had two hard taskmasters: Dick Kline and myself. The mattes had to be soft-edge, because if we had made a hard-edge picture the entire feeling of fantasy

would have gone out the window. It would have been a piece of dross, a special effects picture — which is what we were trying to avoid. It would be the greatest credit to Dino, Dick, Frank and myself if this were not considered a special effects picture.

QUESTION: Which brings us to the dichotomy that while the film's subject matter is almost by definition, fantasy, you had to make it human to the point of really touching the audience. What about that?

GUILLERMIN: I don't consider it a dichotomy. To me, the essence of fantasy is that when you're telling a fantastic story it has to be more real when you see it and think about it than reality itself. Otherwise the fantasy will, again, go out the window. Fantasy is only the magnification of our dreams, our hopes, our nightmares — but it has to exist perfectly, or we will reject it. Fantasy is the grossest form of documentary film-making, because it has to capture the enormity of whatever the fantasy element is. In this case it is truly enormous — a 42-foot-high Kong, and you have to accept him with complete believability. Fantasy is a more demanding medium than documentary, in the sense of a picture like "THE TOWERING INFERNO", in which all we were doing was trying to make a picture about a fire in an apartment house. "INFERNO" was almost a straight documentary, which is relatively simpler because the problems are only physical. With fantasy, which is an explosive element in itself, you can go overboard or "underboard" very easily. You balance on the razor's edge and you bring your audience to it so that they want to believe. They must never turn away because it seems false. You take them on a trip from beginning to end. "KONG" is a trip, if it works. In my opinion, it's much, much more realistic than any realistic picture I've tried to make. It has to be. Otherwise, the fantasy would be absurd.

QUESTION: I can understand how you would have to create a climate of reality for yourself in order to make such a picture, but how did you manage to convey that to all the people on the set, who, by the time production was completed, were almost believing that Kong was a flesh and blood creature?

GUILLERMIN: Just by passion. I'm a passionate person. Dick Kline is very low-key, but he is also extremely passionate, as are most of the people we work with. An enormous passion lurks

underneath whatever surfaces that they may cover it with. I merely touched the nerve of passion in as many of our unit as I could — and that included most of them. They felt my passion because I'm a passionate nut, so everything was out in the open and we all worked together like a lot of bloody madmen to do the best we could. We touched each others' nerves continuously — and survived. Their passion was touched. They rebounded off mine and found ways of tolerating me and setting off their own fireworks. There never was a happier or closer unit, in which no one ever pulled the carpet from under anyone else, right from the day we started until the day we finished. It was a beautiful unit made up of beautiful people — and it's not often that one can say that in Hollywood. I feel very sentimental about making pictures and they were a marvelous bunch of people, as it happened. Great luck!

QUESTION: You feel, then, that the technical staff really came through for you and got you what you wanted?

GUILLERMIN: Absolutely! But that was not just an accident. They were all hand-picked; they were the best, definitely the most expert and finest unit I've ever worked with anywhere. They happened to be a collection mostly from Hollywood; plus a few people from Italy, and they were really a tremendous unit — almost unique in my experience.

QUESTION: Now for the final question: If you knew going in what you would have to go through to get "KING KONG" on the screen, would you do it again?

GUILLERMIN: Yeah ... naturally. Absolutely yes! ■

The director, in his lonely role of coordinating the many elements of the new "KING KONG", would appear to have the situation well in hand.



PRODUCTION DESIGN FOR THE NEW "KING KONG"

A special world, at once fantastic and realistic — and big enough to be called "home" by a giant gorilla — takes shape on the drawing board, to be reproduced in full-size and miniature scale on the sound stage

It is rarely that two Production Designers are assigned to the same film, but "KING KONG" was no ordinary project. So massive was its scope, so intricate its demands and so short the time available for completing the project, that two outstanding Production Designers were engaged to share the chores — the two, in this case, being famed Italian Production Designer Mario Chiari, and the outstanding American Production Designer, Dale Hennesy.

Although their assignments overlapped in several areas, generally speaking, Chiari gave his main attention to working with artist/technician Carlo Rambaldi in the design of the two Kongs — both the full-scale and the miniature — while Hennesy concentrated mainly on designing the 107 different sets, both full-scale and miniature, required in the filming.

In what follows, each of these eminent artists discusses his own work in the production design of "KING KONG":

MARIO CHIARI:

Last year my friend, Dino De Laurentiis, asked me to work with him in designing "KING KONG" and the biggest problem was bringing Kong to life on the screen.

To help solve that problem I called upon Carlo Rambaldi, with whom I had worked on "BARRABAS", "THE BIBLE" and many other pictures. He is a sculptor, an artist and a technician, and that was exactly the combination needed to do this kind of a job.

Our assignment was to create a star for the picture, because in this picture, Kong is the star. It was not simply a matter of creating beautiful sets. We knew that the closeups of Kong would be even more important.

We decided that we would need two Kongs — one a full-size Kong and the other a miniature Kong — and that they would both have to match each other exactly in character and in their proportions. But the main question was how big the full-size Kong should be. After discussions with Dino De Laurentiis and John Guillermin, it was decided that the size of Kong should be calculated in proportion to the size of the hand required to hold the girl. That meant that Kong would have to be about 40 feet tall, and that was the height decided upon.

There wasn't any problem in matching the big Kong and the small Kong, because their proportions were the same, even though they were very different in size. The big Kong has artificial eyes and the small Kong uses a

man's eyes, but their motion is the same.

There was, however, a bit of problem in matching the fur. For the small Kong we used the fur of a bear, but that would not work for the big Kong. He needed much longer fur, so we ended up using about 2,000 horses' tails. These cost a fortune — about \$70,000, but they looked realistic. In addition to the big Kong, we had to make two extra arms and two extra legs the same size for special scenes.

The main problem with the small Kong was to find a way for him to act with all of the required expressions — roaring, snarling, crying, blowing, even smiling. It was obvious that the man inside the suit could not be doing the acting, as far as these expressions were concerned. So Carlo Rambaldi designed six heads, each of which, by mechanical means, could be made to produce six or seven different expressions.

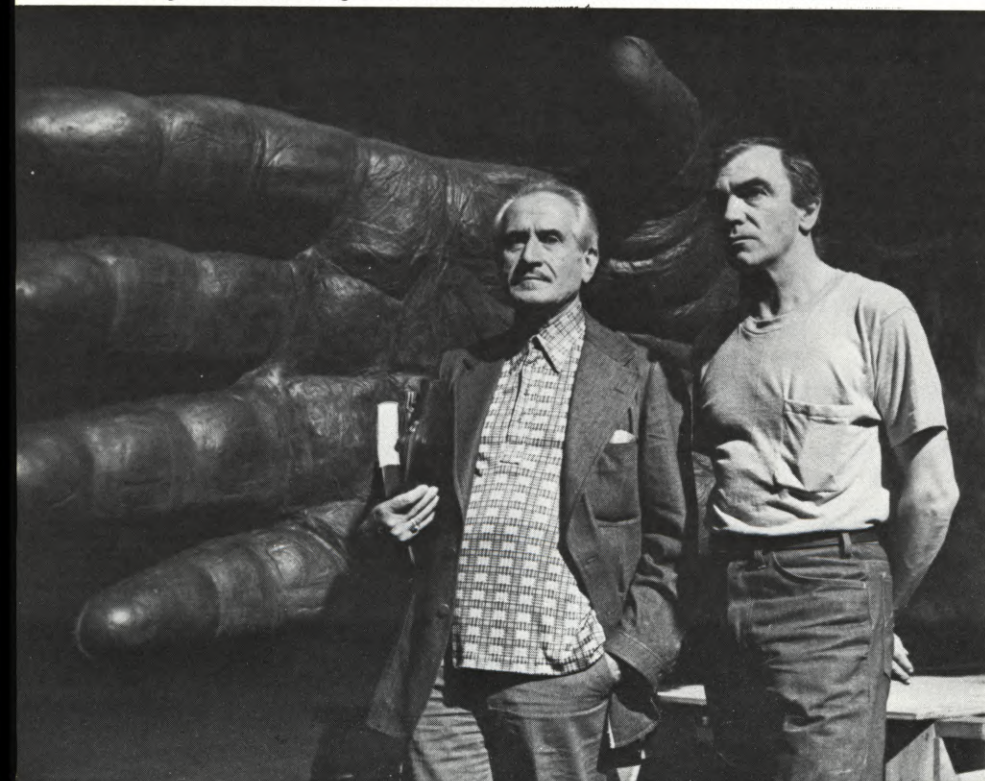
The result is that the Kong that is seen on the screen is really a composite of the full-size and the miniature Kongs. In order to make this believable it was necessary, also, to design full-size and miniature sets in exact duplication. Some of the full-size sets were real, like the locations we found on the island of Kauai, but others had to be built on the sound stages and backlot of MGM Studios. In both cases, however, the miniature sets we built had to match them exactly — not only in proportion, but in color and character.

To build a miniature of a building is very easy, but to build a miniature of a jungle is not so easy, because the leaves of trees, grass and flowers must be made very small and their movement must look real. To actually build these miniatures we brought in a very good man from Rome, Aldo Puccini, and we worked very closely together as a team.

There was also very close teamwork between myself and the other Production Designer, Dale Hennesy, who is a very good man to work with. We divided up the work that had to be done and helped each other in every way.

"KING KONG" is different from any other picture that I've worked on. I've designed more than 120 pictures and more than 150 shows on the stage, but "KONG" was the most difficult project of all.

Famed Italian Production Designer Mario Chiari (left) and talented artist/sculptor/engineer Carlo Rambaldi look as though they are about to be grabbed by the heavy hand of their own creation, the 42-foot Kong. The two long-time friends and colleagues worked very closely in the design of the new Kong — in both his full-scale and miniature manifestations.



DALE HENNESSY:

The basic problem in designing the new production of "KING KONG" was to make it visually exciting, while also trying to achieve a look that would be different from that of the original "KONG".

A basic decision that had to be made before any other designs could be locked down had to do with the scale of the creature Kong himself. In other words, how tall should he appear to be? The scale was determined by Dino De Laurentiis and his Italian designers, Mario Chiari and Carlo Rambaldi. At one time the scale was set at 32 feet, but later, based on the size of the hand needed to pick up the girl, it was decided to go to 42 feet. Accordingly, the scale for the miniature sets was established as 1/7th actual size.

As we got further into the development of the story, another change was made. Our director, John Guillermin, felt that in order to make Kong seem even more imposing for the sequences in New York, he should appear to be about 55 feet tall. Based on that decision, the miniature sets for the last sequence, which takes place in New York, were built to a scale of 1/10th actual size. By underscaling the New York miniatures in this way, the height of Kong was exaggerated.

The designs of some of the sets stemmed from the locations selected. For example, we found some incredible natural locations on the Na Pali coast of Kauai, the north shore, and from that terrain evolved the jungle and volcanic crater sets built back at the studio, both full-scale and in miniature. An example is the ravine set for the famous sequence in which Kong toys with the log spanning the chasm and finally throws the adventurers off the log and into the ravine.

Inspired by the Kauai terrain also was the crater in which Kong lived. This was a departure from the original film, in which he lived in a huge cave. In our version he lives in a kind of top-of-the-world crater where there are small volcanoes and smoke and steam. This is more or less his lair.

The character of the Kauai terrain also influenced the architectural approach to the great wall built by the natives to keep Kong out. Our design was based on a New Guinea primitive architectural look, rather than on the original wall, which had a kind of stone feeling. We went to more of a wood structure, which was much more primitive. We used eucalyptus poles wrapped with vines and twigs to convey the almost desperate feeling of the natives that behind the wall there was this



Production Designer's sketch for the classic sequence in which Kong confronts the adventurers crossing the ravine on a log, later throwing them into the chasm. This sequence has been staged almost identically in both versions of "KING KONG", although the technology of the new version is somewhat more advanced.

giant creature that they had to pacify and that they had done everything they could with eucalyptus trees and vines to build some kind of strong element that would keep the ape out.

The big wall (approximately 500 feet long and 50 feet high) was built in Culver City on Lot 2 of the MGM Studios, using the New Guinea architectural style and it had a good look, an authentic feeling. Adjacent to it we built a big mountain, so that the men from the ship and the girl could come over the top of it and look down upon the native ritual taking place below.

All the way through the filming of "KING KONG" we dealt with many, many versions of miniature sets, in addition to the full-size sets that they duplicated.

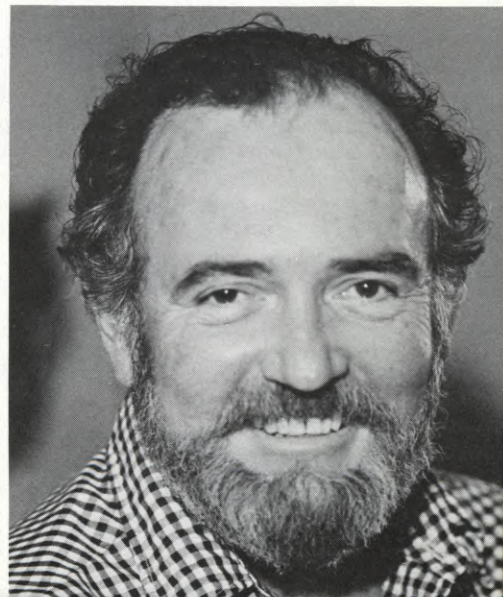
For the supertanker aboard which they take Kong back to New York we built a complete miniature set, plus portions of full-size sets to which could be added matte shots for the special effects composites that created the feeling that you were inside the full-size tanker.

We had to duplicate in miniature several areas of New York City, where Kong goes on a rampage and picks up miniature Cadillacs and hurls them against buildings or crushes them underfoot. We built a miniature of an

actual New York railroad station where Kong destroys an elevated train. We had to build miniature warehouses and a model of the World Trade Center with its twin towers, which Kong finally climbs. He jumps from the South Tower to the North Tower and is eventually killed by helicopters. All of this was built in miniature scale to exactly duplicate the full-size buildings. We were very fortunate in having access to the

Continued on Page 88

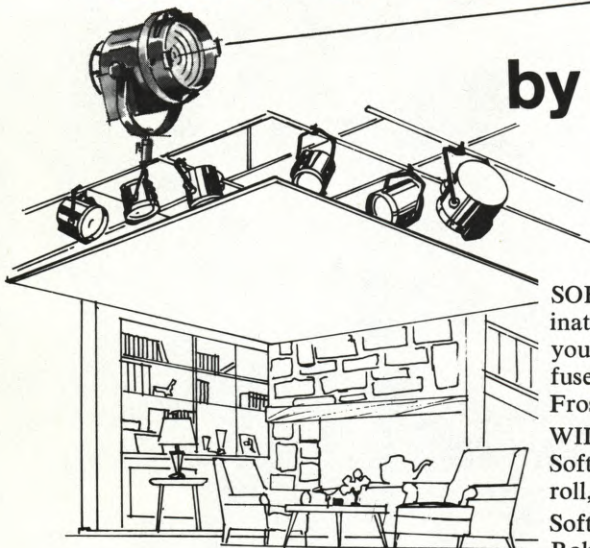
Production Designer Dale Hennesy (Academy Award winner for "FANTASTIC VOYAGE") worked mainly on the 107 sets (big and small) for "KONG".



diffusion



by **ROSCO**



Without diffusion



With Tough Spun



With Rolux

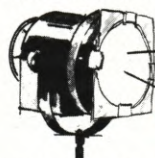
SOFT FROST. When you want to eliminate the strong shadows in a set, and you're lighting from above, you can diffuse all the lights with one roll of Soft Frost stretched over the top of the set.

WIDE SOFT FROST is the same as Soft Frost but comes in a 150 sq. ft. roll, 72" wide.

Soft Frost is roughly 1/2 the density of Rolux.

1/2 **DENSITY SOFT FROST** is about half of that. Soft Frosts are sold in 100 sq. ft. rolls, 54" wide.

Rolux and all the Soft Frosts are not designed to be used directly on "hot lights." They do not have the high-heat resistance of the "tough" diffusion filters.



TOUGH DIFFUSERS

TOUGH ROLUX has the same characteristics as Rolux, but can be used on "hot lights."

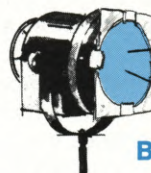
TOUGH SPUN. A tough diffusion filter for use on "hot lights." Diffuses like spun glass without the particle irritation to eyes and skin. It won't char or yellow.

LIGHT TOUGH SPUN is similar to Tough Spun, but is less dense. Both are sold in 100 sq. ft. rolls, 48" wide.

TOUGH SILK is another "hot light" diffuser. It gives an effect similar to silk. The 100 sq. ft. rolls are 48" wide.

TOUGH FROST is a non-textured frost filter designed for direct application to a "hot light."

LIGHT TOUGH FROST and **OPAL TOUGH FROST** are two derivatives with 1/2 and 1/4 of the density of Tough Frost respectively. All three Tough Frosts come in 100 sq. ft. rolls, 48" wide.



BOOSTER DIFFUSERS

Although nominally 3200K, most lights tend to produce slightly lower color temperatures because of voltage drop or reflector aging.

That's why we created the "Booster" diffusers.

TOUGH BOOSTER SILK, combining Tough Silk and Quarter Booster Blue—diffuses and raises color temperature about 300°K. 100 sq. ft. rolls, 54" wide.

TOUGH BOOSTER FROST, combining Tough Frost and Quarter Booster Blue. 100 sq. ft. rolls are 48" wide.

TOUGH BLUE 50 FROST diffuses and makes the full correction of 3200K to daylight. 100 sq. ft. rolls are 48" wide. Then there is also a special diffuser:

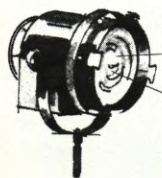
SPECIAL DIFFUSER

ROSCOMATTE whose extraordinary light transmission ability is so high that it becomes worthwhile to put up with its brittleness. Only available in 20" x 24" sheets. Must be handled with care.

For additional information, data sheets, swatchbooks of the complete system and samples contact our Rosco dealer, or write:

The words used to describe the character of a particular lighting look are familiar to all. High and low key, soft, flat, hard, and shadowless are only a few of the more familiar ones. The variety of terms, and the implied gradations inbetween, are the reasons for having fifteen types of diffusion media in the Rosco Cinegel product line.

Diffusion is utilized to control the "shadow-casting" properties of a light source. The variety of light sources that the cinematographer must deal with range from the sun, through the gamut of natural conditions, artificial sources in luminaries designed for photography. Rosco provides the widest range of diffusion materials available today.



SOFT DIFFUSERS

ROLUX, Rosco's densest material has diffusion properties capable of diffusing the sun into a nearly shadowless source. It makes the illumination from an intense point-source look like "shadowless" light. It is used in applications ranging from tents for the photography of specular items (jewelry, appliances and the like) to covering the windows on natural locations so that the sun produces only a soft, diffuse glow. May be used as a bounce surface as well. Rolux is available in 48" wide rolls of 100 sq. ft.

ROSCO

36 Bush Avenue, Port Chester, N.Y. 10573 • (914) 937-1300 • Telex: 131472
11420 Ventura Blvd., Studio City, Cal. 91604 • (213) 980-0622 • Telex: 691123
69/71 Upper Ground, London SE19PQ • 01-633-9220

CONSTRUCTING A 42-FOOT SUPERSTAR

A giant gorilla with oil in its veins and a hide covered with 2,000 horses' tails, is designed and built in record time by 60 dedicated technicians who gave him a short, happy hydraulic life of his own

By GLEN ROBINSON

When we first started on this project we were assigned to create a wide range of special mechanical effects, but these did not include construction of the 42-foot mechanical King Kong. Carlo Rambaldi had done the basic design of the big monkey and the original plan was to have an aircraft company build it. However, in our first meeting with those people we learned that the aircraft company wanted four or five months just to get the design for a small model, after which it would take them at least a year to build the large one. Obviously, there was no way that we could wait that long, so we decided to build it ourselves. We completed it in just over four-and-a-half months, which, I guess, is pretty good.

There were several possible approaches to animating the creature. At first we thought we might build a control suit that would fit onto a man, so that any movement he made would be transferred to the large model. This we could have done fairly easily, but it was potentially dangerous in that the man in the suit might forget himself and make a random gesture that would wipe out the people working on an arm, for example. As a result, we decided to take another direction in designing and building the mechanism.

Originally we started to use chrome alloy tubing, but ended up fabricating the basic structure of King Kong out of aluminum. We had used probably about 31 feet of hydraulic tubing by the time it was assembled and around 52 proportional valves. This was the secret of our control, of course — the capability of getting proportional valves to control all the different members of Kong through a potentiometer system. This system was bought from an outside company and their technicians worked with us until we got what we wanted.

We built probably a total of four full-size Kongs. One was to serve as a model for the skins; one was to go back to New York; one was our full-size mechanical Kong and then we made several extra arms and legs. All the main lines were designed so that the various actions could be controlled separately, with a group of people doing the controlling. This meant that an arm could be controlled to pick up Jessica — or do whatever else it had to do — with relative safety. Of course, the



In the construction department at MGM Studios, a technician works on the disembodied legs of the giant "KING KONG". The skeleton shown here was originally scheduled to be fabricated of chrome alloy steel, but the final version was made of duraluminum. In addition to the complete monster, several "extra" arms and legs were built to this scale to be used for special scenes.

fully assembled Kong could also pick her up. However, in order to make it easy to get shots on the stage, we usually used just the controlled arm.

The skin for Kong was made out of a type of rubber that was covered with horsehair. There was a company that helped with the horsehair, but we made the skins. The model of the gorilla was made by Don Chandler and his group and we then took molds off of that in order to get our skins to fit the structure. It was quite a challenge (especially getting it finished on time), but fortunately it worked out very well.

When we got the assembled King Kong out onto Lot 2 and set it up on long tracks, we had to put the six-story-high Petrox gasoline pump over the whole figure. However, every time we got that pump up in the air about 100 feet and tried to put it over Kong, the whole thing turned into quite a cliff-hanger. We finally made it, though. The pump was built on a framework of duraluminum, with muslin covering, and an artist painted the detail of the pump onto it.

There were a lot of other mechanical effects we had to come up with for

this picture, but the giant Kong was the main item.

We were involved in the building of the miniatures also. Perhaps the most ambitious miniature was the elevated railroad that we set up on Stage 25. It included miniature railway cars that Kong could pick up and destroy. All in
Continued on Page 83

Supervisor of Special Mechanical Effects Glen Robinson is a two-time Academy Award winner for his work on "EARTHQUAKE" and "THE HINDENBURG".



THE PERSONA OF KONG

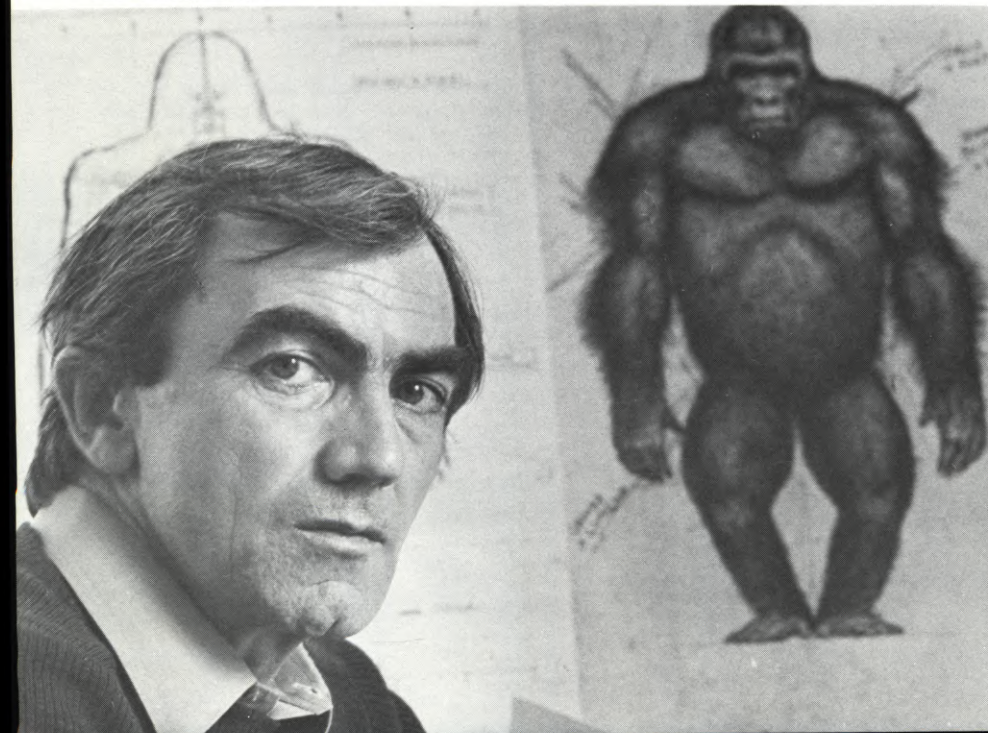
Continued from Page 43

KONG":

1. A Kong 42-feet tall, to be completely animated with movement commands that could be controlled from a distance, utilizing a hydraulic system.
2. Two gigantic "extra" arms, articulated in every movement on the same scale as that of the 42-foot Kong. In particular, the hands were to have every possibility of movement, with the fingers being able to grasp and to perform any other type of required action.
3. Two gigantic "extra" legs, to perform the detailed actions of walking and stomping.
4. Four Kong costumes, accurate in



(ABOVE) Technicians get Kong assembled and all his bodily fluids flowing in preparation for his big breakout on the MGM backlot. (BELOW) The face of a Medieval artisan and the talent of a modern-day genius are the characteristics of Carlo Rambaldi — the man who gave life to King Kong.



anatomical and muscular detail, that could be worn by a man — each costume to have extended orthopedic arms and articulated mechanical hands.

5. Seven mechanized Kong heads, with animation commands that could be activated from a distance. This group of heads was to be capable of expressing a wide variety of moods and emotions, with a total range of at least 30 expressions — more than those expressed by humans, because they would include animal expressions.

6. A series of miniaturized "actresses", scaled to the dimensions of the hands on the Kong suit, and capable of being operated (commanded) from a distance.

Rambaldi was intent on creating what he called a "hyper-realistic" Kong. It was not enough that he must look the part authentically; he must also move in a manner that was absolutely lifelike.

What resulted from his designs was an extremely life-like full-size (42-foot) Kong, whose realistic movements were made possible by combining two widely different technologies.

The basic skeleton was mechanized duraluminum metal controlled by hydraulic power. Overlaying the skeleton were muscular masses molded in very light plastic and separated, layer from layer, by a slippery material. The muscle layers, positioned one on top of the other (just as they are in the human body) were capable of a realistic flow of movement. The "tendons" were fabricated from steel springs.

The most complex parts of the huge Kong structure are the orthopedic hands, as perfect in range of movement as human hands.

The job of actually building the 42-foot Kong (after a false start with an aircraft manufacturer) was entrusted to special mechanical effects wizard Glen Robinson and his crew. Working in the MGM Construction Department, 60 people toiled to get the giant operational in the record time of four-and-a-half months. This included construction of the extra appendages which Rambaldi had ordered. The big Kong was built in exact proportional ratio to the miniature Kong.

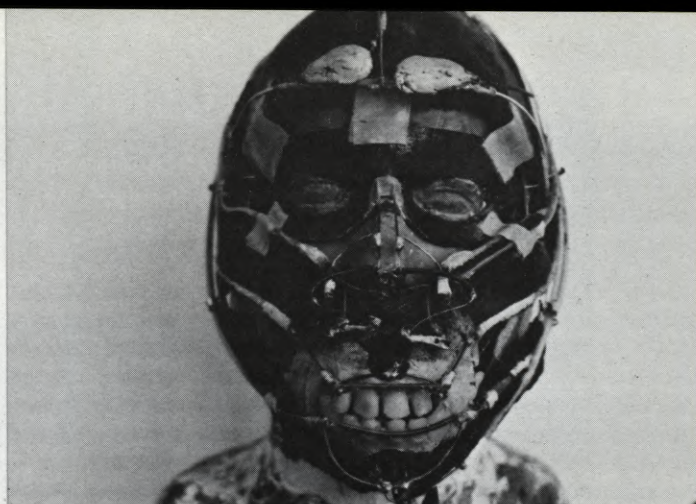
In planning the miniature KONG, it had long-since been determined that simply putting a man inside an ape suit would not provide sufficient flexibility for the realistic movement of musculature. Accordingly, an "undersuit" of gorilla musculature was designed to be worn beneath the outer fur suit. The major muscles, such as the pectoral group, were made up of latex sacs filled with liquid silicon — enough to make any centerfold cutie envious.

The decision to build seven separate head-masks for the miniature Kong was arrived at on the basis of the realization that no one (or two or three) head could possibly simulate the wide range of emotions (both "human" and "animal") that Kong would be called upon to express during the course of the film. Everything else aside, it would be impossible to incorporate into any one head the number of controls necessary to effect such a variety of expression.

It was decided that each mask could be rigged to register an average of seven expressions — or a total of approximately 50, more than any known animal, including man, is capable of registering. To formulate the necessary mechanics, seven eye-nostril-snout combinations were put together.

Hydraulic controls for the head-masks were ruled out because the controls needed to push fluids through tubes would have been too complicated to fit inside the head pieces. In the case of the giant Kong, however, this objection was not valid, so the big fellow was outfitted with a full set of hydraulic controls that pushed oil through pipes to activate the creature. Except for an occasional leak, the system worked very well.

The exquisitely articulated head masks were built up according to the logic of nature itself. Over the basic cranium were placed "tendons" to move the facial muscles and the artificial epidermis that covered them. The various expressions were created by means of levers, operated from a distance by a team of two to six men, depending upon the complexity of the



Mechanics of the head-mask are built up piece by piece on a form representing the cranial structure of Kong. Separate cables control each of the facial muscle groups. The cables, which are attached to levers moved off-screen by an operator, were selected over hydraulic controls because there would not have been room for such a complicated mechanism inside the mask.

emotions to be expressed.

Rambaldi decided that the best way to activate the facial expressions would be mechanically, by means of a series of cables running up through the foot of the suit. These cables would be about 30 feet long — the seemingly overlong length being necessary to give Kong freedom of movement, without tying him too closely to the operator.

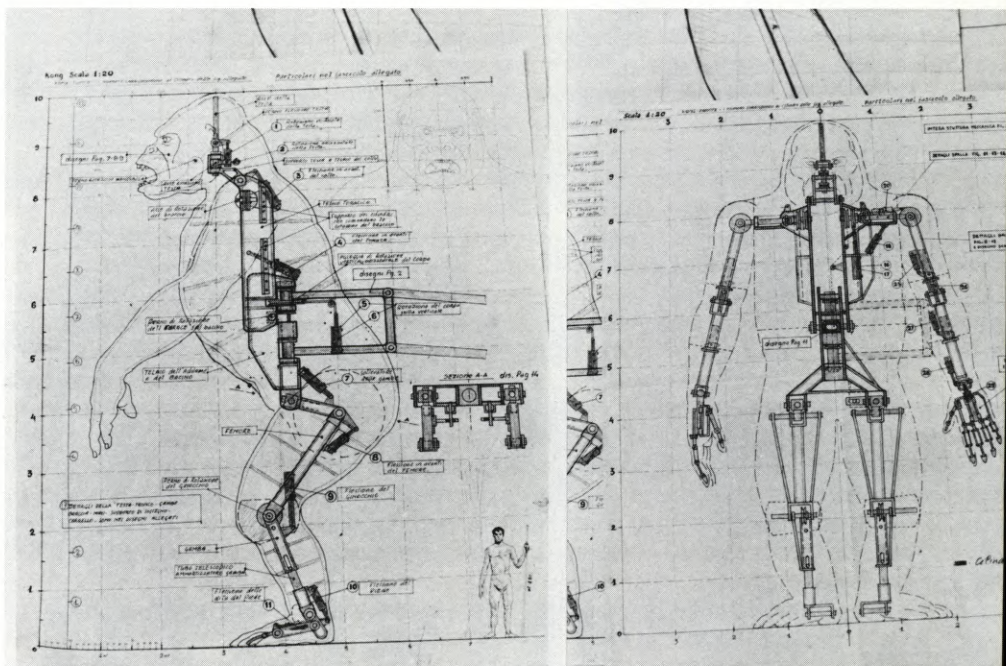
Operators manning the controls were trained to work with the actor inside the suit in order to coordinate expression changes as closely as possible with the actor's larger movement. Obviously, such control could have been totally automated, with various expressions simply being "punched up" electronically, but since human feelings were being simulated, it was felt that a human touch on the controls was needed.

Commenting on his experiences while working on "KING KONG", Rambaldi says: "It is important to remember that 'KONG' is the first movie to utilize absolutely all of the different kinds of special effects that have been developed up until now. It is like an encyclopedia of special effects."

He has warm praise for his co-workers on the crew of the picture, and especially for Director John Guillermin. "John was a wonderful collaborator," says he, "because, right from the beginning he explained everything very clearly to the whole crew. By doing that he made sure that everyone knew exactly what to do. On a picture like 'KING KONG' it is not enough for a man to be merely a great director; he must also be a great technician. In this case, I have been very happy working with John, because he is a great technician, as well as a great director."

One gets the impression that he regards Guillermin as some sort of genius.

It takes one to know one. ■



(ABOVE) Side and front views in sketch form showing the duraluminum skeleton of Kong, which was covered with plastic and 2,000 horses' tails for fur. (BELOW) Silicon-filled latex form-fitting suit worn under the fur costume provided a flexible play of muscles. Rick Baker demonstrates the rig — fore and aft.





Servicemen Love Our Guts

Because they know our CP-16 reflex and non-reflex cameras *inside out*.

They know that our cameras — no matter how rugged and reliable — will eventually end up on their workbench. For normal service. And sometimes, for major repair due to abnormal field damage.

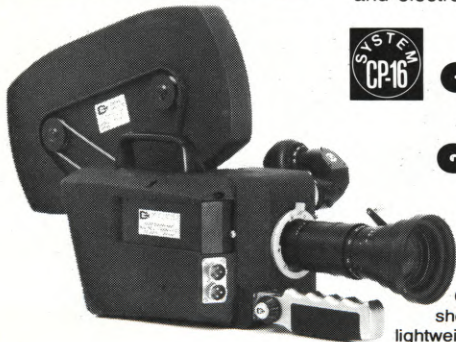
And so, more than anyone else, they are in a position to appreciate the painstaking care Cinema Products design engineers have given to making our cameras easy to maintain, service and repair.

They most appreciate the fact that the entire CP-16 or CP-16R camera mechanism can be removed from the camera body in a matter of minutes, giving the serviceman easy access to all mechanical and electronic components. They also appreciate

the fact that the entire CP-16 or CP-16R drive motor system can be easily replaced in less than five minutes! And the thoughtful "little" touches — like the Bristol knob wrenches tucked away inside our Crystasound amplifiers and auxiliary mixers to aid in field servicing. Masters of their craft, they appreciate the workmanship, the meticulous care and attention to detail in assembly, the quality materials and components that go into the manufacturing of the CP-16 and CP-16R cameras.

More than anyone else, servicemen can appreciate why *cameramen* also love our guts!

Because our cameras perform so reliably. Because minor adjustments and repairs can be made rapidly in the field. Because we've made certain that our dealers and authorized service centers — located throughout the USA and all over the world — are well stocked with critical replacement parts. So that when major repair is required, it is so much easier and quicker to get a CP-16 or CP-16R back into good working order. And back into the hands of the TV-newsfilm cameraman. Fast. So the cameraman can get back to filming the action.



CP-16R/A Reflex Camera shown with new PLC-4 lightweight 400 ft. magazine.



**Cameramen
Love Our
Guts Too!**

cinema E products
CORPORATION

Technology in the Service of Creativity

2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 ■ Telex: 69-1339 ■ Cable: Cinedevco

WHAT'S NEW

Continued from Page 12

SHOULDER-CAMERA POD

Designed to fit any hand-held shoulder-mounted film or electronic camera, the new IDI MiniPod is of uni-welded stainless-steel construction with an angled rubber shoulder cushion. Unit is adjustable for individual fit. Dovetailed acceptance plate takes Cine 60 or CP snap-lock baseplate. Professional net, \$49.95.

Contact Bill Reiter at Image Devices Incorporated, 1825 NE 149 Street, P.O. Box 61-0606, Miami, FL 33181; Phone: 305/945-1111.

MAGNAFLEX 16 DOUBLE-BAND PROJECTOR

The versatile new Magnaflex 16 Mark III double band projector is now being exclusively imported into the United States by Victor Duncan, Inc.


The Magnaflex, based on the Bell & Howell model 1694 16mm projector, is a versatile and highly portable double system, interlock projector. For post-production applications, the Magnaflex is offered in three basic models to allow the professional filmmaker the opportunity to purchase only those features required for his specific needs.

Model MF 810100 is a preview/playback unit only and is priced far below any competitive unit available. The MF 810101 incorporates a recording pre-amplifier into the basic model and allows the filmmaker to do non-synchronous transfers from outside sources as well as from side to side.

The MF 810102 is a synchronous recording and playback projector similar to the MF 810101, but with a 110v, 60Hz synchronous motor allowing transfers from 1/4" sync tracks.

All Magnaflex 16 Mark III projectors feature direct mechanical coupling for positive synchronization. Double band side may be de-clutched for independent inching of fullcoat film. Additionally, all models feature three tooth claw for safe projection, two-bladed shutter for maximum light output and swing-open gate and manual threading for easy access to film path for marking, synchronizing, etc.

The new Magnaflex 16 Mark III may be seen at any of the Victor Duncan Sales offices, located in Chicago, Dallas and Detroit. For additional information, current prices or Dealer Inquiries, please write Norm Bleicher, Marketing Director, Victor Duncan, Inc., Dept. (A), 2659 Fondren Dr., Dallas, Texas 75206. (214) 369-1165.



SYSTEM CP-16

AUTHORIZED CP-16 DEALERS AND SERVICE CENTERS

NORTH AMERICAN LISTING/EFFECTIVE: NOVEMBER 15, 1976

(D/S) Dealer & Service (D) Dealer (S) Service

ALABAMA (D/S) Bush & Millimaki Photo Equipment Service 902 Bob Wallace Ave. Huntsville, Ala. 35801	HAWAII (D/S) Pacific Instrumentation 5388 Papai Street Honolulu, Hawaii 96821	NORTH CAROLINA (D/S) Standard Theatre Supply Co. 125 Higgins St. Greensboro, N.C. 27420
CALIFORNIA (D/S) Alan Gordon Enterprises, Inc. 1430 N. Cahuenga Blvd. Hollywood, Ca. 90028	IDAHO (D/S) Stockdale Corporation 1448 W. Bannock Boise, Idaho 83701	OREGON (S) Things Unlimited 1448 W. Bannock Portland, Oregon 97212
(D/S) Birns & Sawyer, Inc. 1026 No. Highland Ave. Hollywood, Ca. 90038	ILLINOIS (D/S) Victor Duncan, Inc. 200 E. Ontario St. Chicago, Ill. 60611	PENNSYLVANIA (D/S) Calvin Cinequip, Inc. 217 Vine St. Philadelphia, Penn. 19106
(D/S) F&B/Ceco Of California, Inc. 7051 Santa Monica Blvd. Hollywood, Ca. 90038	LOUISIANA (D/S) La Del, Inc. 808 N. Rampart St. New Orleans, La. 70116	(D/S) Oscar H. Hirt, Inc. 41 N. Eleventh St. Philadelphia, Penn. 19107
(D/S) Lloyd's Camera Exchange, Inc. 1612 N. Cahuenga Blvd. Hollywood, Ca. 90028	MASSACHUSETTS (D/S) Crinson Camera Technical Sales, Inc. 60 Landsdowne Cambridge, Mass. 02139	TEXAS (D/S) Victor Duncan, Inc. 2659 Fondren Dr. Dallas, Texas 75206
(D/S) Jack Pihl & Associates 6370 Santa Monica Blvd. Hollywood, Ca. 90038	(S) Sanford Camera & Projector Repairs 1054 Massachusetts Ave. Arlington, Mass. 02174	(D/S) Gordon Yoder, Inc. 2911 Ladybird Lane Dallas, Texas 75220
(D/S) Sawyer Camera Co. 6820 Santa Monica Blvd. Hollywood, Ca. 90038	MICHIGAN (D/S) Victor Duncan, Inc. 11043 Gratiot Ave. Detroit, Mich. 48213	UTAH (D/S) Stockdale Corporation 2211 West 2300 South Salt Lake City, Utah 84119
(S) Camera World 1071 Sixth Ave. San Diego, Ca. 92101	MINNESOTA (D/S) Maritz Laboratories, Inc. 3000 France Ave. Minneapolis, Minn. 55416	WASHINGTON (D) Glazer's Camera Supply 1923 Third Ave. Seattle, Washington 98101
(D/S) Adolph Gasser, Inc. 181 Second St. San Francisco, Ca. 94105	MISSOURI (D/S) Calvin Cinequip, Inc. 215 W. Pershing Road Kansas City, Mo. 64108	(S) Phototronics 223 West Lake North Seattle, Washington 98109
(D/S) Film Equipment Rental Co. 363 Brannan St. San Francisco, Ca. 94107	NEW JERSEY (D/S) Cinecraft International, Inc. 11 Caesar Place Moonachie, N.J. 07074	CANADA (S) Cine Audio Ltd. 10251 - 106 St. Edmonton, Alberta T5J 1H5
COLORADO (S) Film Equipment Service Company 1113 S. Pearl St. Denver, Co. 80210	NEW YORK (D/S) Camera Mart, Inc. 456 W. 55th St. New York, N.Y. 10019	(D/S) Alex L. Clark Limited 30 Dorchester Ave. Toronto, Ontario M8Z 4W6
CONNECTICUT (D/S) Cinelease, Inc. 209B Old Durham Road Killingsworth, Conn. 06417	(D/S) F&B/Ceco, Inc. 315 West 43rd St. New York, N.Y. 10036	(D/S) Branches: 7104 Hunterwood Rd., N.W. Calgary, Alberta T2K 4J6
DISTRICT OF COLUMBIA (D/S) Brenner Cine-Sound 5215 Wisconsin Ave., N.W. Washington, D.C. 20015	(D/S) Film Equipment Rental Co. 419 West 54th St. New York, N.Y. 10019	(D/S) 1070 Rue Bleury Montreal, Quebec H2Z 1N3
FLORIDA (D/S) Photomart 6327 S. Orange Ave. Orlando, Fla. 32809	(D/S) Mobius Cine Ltd. 7 East 47th St. New York, N.Y. 10017	(S) Steve's Camera Service 189 East 28th Ave. Vancouver, B.C. V5V 2M3
		(S) Western Camera Service Ltd. 1855 West Fourth Ave. Vancouver, B.C. V6J 1M4
		MEXICO (D/S) Deksa S.A. Av. Nuevo Leon No. 159 Mexico 11, D.F.

cinema E products CORPORATION

Technology In The Service Of Creativity

2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 ■ Telex: 69-1339 ■ Cable: Cinedevco

COMPOSITE SCENES FOR "KING KONG" USING THE BLUE-SCREEN TECHNIQUE

By FRANK VAN DER VEER

Film magicians break all the rules and conceive some totally new approaches to a classic special effects technique in order to put Kong on the screen in the most spectacular manner possible

I can't think of another picture in which composite photography played as important a role as it did in this most recent version of "KING KONG". There are countless scenes in it that required the "marrying" of two or more pieces of film and there would have been no other way to achieve these effects, except through composite photography.

However, the big question in the beginning was: "What kind of composite photography would be best to use?" The preference seemed to run heavily in favor of front-projection and a great deal of time and money was spent in making front-projection tests. I really hoped that this would work out because front-projection is basically an excellent technique for certain types of

effects. However, because of the specific technical characteristics of the "KING KONG" project, it didn't work well, and so the decision was made to use the blue-screen process exclusively.

While I favored that decision, blue-screen being a specialty of mine, I was aware that it could present some very serious problems — most importantly, that of "fringing". The reason for my concern was that, in this picture especially, we would be dealing constantly with certain elements that have long been regarded as taboo in blue-screen work. One of the most difficult of these to deal with (and still avoid fringing) is hair.

Now, hair on top of somebody's head presents problem enough, but here we would be dealing with a creature, Kong, who had hair all over his body. On top of that, we had a leading lady with fine blonde hair that would often be shown blowing in the wind — one of the most difficult things to cope with in the blue-screen process.

Still, it had to be done — and done perfectly. In order to achieve that result we had to work out a whole new basic blue-screen technique, one that would retain the hair detail, even when it was blowing in the wind. We employed a variety of methods. We switched separations; we used masking techniques; we used different kinds of matte film — anything we could think of that would help us. The result, I'm happy to say, is that there is no fringing in the picture.

The assignment was made particularly difficult because of several other factors. The basic photographic style that had been decided upon was soft, low-key and mildly diffused — very effective for this particular subject, but a style of photography which, in the past, had not lent itself to the use of traveling mattes. Nevertheless, since this was to be the style of the principal photography, we had to adapt our blue-screen techniques to be compatible with it.

Another challenge was presented by the fact that we would be working with double and triple blue-screen shots — one blue-screen on top of another blue-screen on top of a plate — and all of them moving pieces. For example, in one scene Kong is shown walking down a New York street with Jessica in his hand. To composite this shot we had the miniature Kong (the man in the

Camera crew sets up in front of the blue screen on Stage 27 at MGM Studios to shoot a scene of Dwan in the palm of Kong's hand. This odd couple represents several elements usually considered taboo for blue-screen work — a big hairy monster and a blonde with her hair blowing in the wind, but new refinements eliminated all danger of fringing.



monkey suit) on one plate; the large mechanical hand holding the girl was shot on another plate; the moving background of the streets of New York was on a third plate. Putting all three pieces together so that the result would look like a single original shot was a difficult and time-consuming task, complicated by the fact that we just didn't have enough time.

Meanwhile, Dick Kline was coping with a constant problem. He had a creature with black hair all over its body and it was holding a fair-skinned girl with blonde hair. The gorilla would absorb light and she would reflect it. If he lit the gorilla to the level where it looked right, the girl would just burn up. This amounted to a tremendous lighting problem for Dick, but he did a marvelous job of solving it.

A major problem of blue-screen has always been that of the time delay in seeing a composite result — the marrying of the foreground and background images for a precise line-up. Sometimes you can put a negative or positive clip into the camera and line up on that — or you can use a roscope clip where you've traced out the detail that you want to match to. These techniques work satisfactorily when you're working with a couple of basically static elements, but in the case of "KONG" we would be constantly marrying one moving image to another moving image, so a single frame wouldn't do us any good.

In this case, precise line-up of the elements was absolutely essential, because John Guillermin was absolutely adamant about the personal relationship that was to be established between Kong and Dwan. All too often we have seen one person married to another person in a blue-screen scene and they are both looking at different things; there is no eye contact. In this case eye contact was very important. If Kong were looking over her head and she was looking at his chest the effect of the scene would be destroyed. Obviously, we had to find some way of assuring the utmost precision in making these link-ups.

The most feasible solution was a video system that would allow us to composite our scenes right on the stage. We also wanted it to be in color so that we could get the effect of instant dailies. Barry Nolan, with his extensive knowledge of electronics, developed a video system that did the job admirably. When we shot the first piece for a scene, we either shot it on film and video tape at the same time, or we would shoot it with the film camera and transfer the shot to video tape.

Continued on Page 74



Levitation? Well, no — just an exuberant Kong in front of the blue screen happily practicing the fatal leap he will make from the North Tower of the World Trade Center in the final sequence of the picture. Superbly realized blue-screen composites add tremendous scope to the picture.

Kong strides around the set and admires his image on the monitor, as technicians fine-tune the video system used to "marry" foreground and background images in preview form. These "instant dailies" on set eliminated "flying blind" aspect of blue-screen work and permitted precise line-up of elements.



3,000 miles across the Pacific in a sail canoe. Drenched every day, even sleeping wet. Humidity. Salt. One-man film crew, room for one sync-sound camera: Arriflex.



A 1½ hour TV Special, produced by
the National Geographic Society and WQED
Pittsburgh; Dale Bell, Producer.
First broadcast Tuesday, January 18 on PBS

Cinematographer Norris Brock wore a vest and harness that let him operate the camera, recorder, mike, battery, wireless receiver and mixer, and *still* have both hands free to reload or to prevent himself from falling overboard. The camera wore a wet suit.

Without charts or navigation instruments, could the early Polynesians have sailed deliberately between Tahiti and Hawaii?

Ancestors

That was the question this voyage set out to answer. If successful, it would help to prove that 15,000,000 square miles of the South Pacific were methodically settled by the islanders, centuries before Columbus crossed the Atlantic.

No staging

Hokule'a was a reproduction of an early Polynesian voyage canoe. For 34 days, Norris Brock's job was to shoot on board. Filming was *not* the pur-

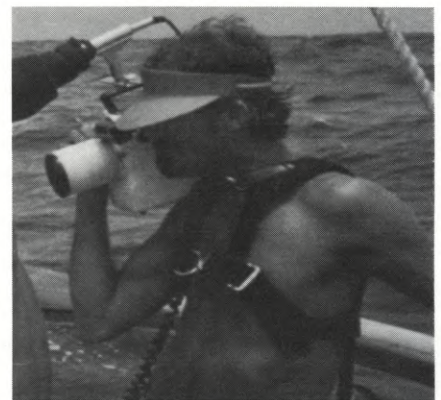
pose of the voyage, so he had to keep out of the way. Nothing could be staged.

Cramped

Space was in short supply. Mr. Brock had to sleep and store his equipment in a space 5ft x 3ft x 4½ft. The upper (sleeping) level was soaking wet. The lower (storage) level leaked badly. Both were hot and humid.

Wet

Except for some sunny periods in the doldrums, everyone on board was permanently soaked by spray, waves, and rain. From the first day out, Mr. Brock reloaded the Arriflex's magazines with wet hands, inside a wet changing bag.



Shooting one-handed and keeping out of crew's way. Note custom-made harness.

Negative

"Having used 7247 negative for the pre-voyage sequences, we wanted to use it at sea, too," says Mr. Brock. "Negative meant double-system; and we originally planned on a three-man film crew."



Crowded and laden canoe meant sync-sound filming had to be done by one man.

One man

"But after a trial sail, during which we nearly sank, we were told we must lighten the load. *One* man would have to shoot and record the sound, with only one sync camera on board."

Stars only

"There would be a radio-equipped escort boat following us at some distance, to plot with instruments the course our navigator set by the stars. But we had no guarantee of access to it."

No radio

"As it turned out," says Mr. Brock, "*Hokule'a's* walkie-talkies were done in by the physical battering and the salt water, so we sometimes lost contact for several days. I had a 50ft load gun camera in an underwater housing. And I had four Nagra SNs. And *one* Arriflex 16SR."



Norris Brock, wet. Note mike mounted above lens.

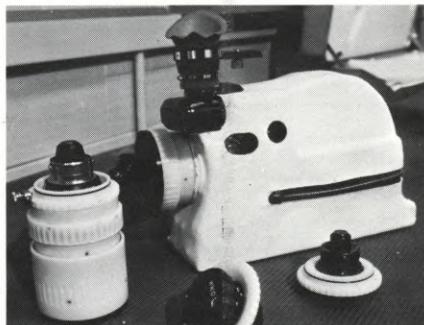
Gamble

"For this job, WQED had looked at every camera on the market. The 16SR was a new and, for us, untried camera. But we figured that the cameras we

did know would not hold up. We decided to bet on Arriflex's reputation for reliability."

Wet suit

"The National Geographic Society made an amazing PVC wet suit for the camera, with a watertight zipper so I could change magazines. The finder and handgrip with its on-off switch we left uncovered."



Arriflex 16SR in custom made PVC wet-suit, lenses in solid nylon housings.

Nylon blocks

"I chose two lenses," says Mr. Brock, "The Zeiss 10-100mm zoom and the Angenieux 5.9mm. National Geographic machined housings for them from solid blocks of nylon, with waterproof O ring seals."



Symmetrical finder let Mr. Brock shoot at any angle on either side of camera.

Harness

"National Geographic also made me a vest with pouches for recorder, camera battery, wireless receiver, audio control unit — and a lifetime supply of lens tissue! And I had a harness made for the camera at a hang-glider shop in California."

Knocks

"Once at sea, I didn't dare put the camera down on deck, so I had to wear it (with the harness) for hours and days on



Wiping off salt spray every few minutes. Throw-away battery in pouch.

end. I fell down countless times. Having both hands free let me save myself and the camera from the worst knocks."

Quick

"The Arri's built-in meter really saved the day, too," says Mr. Brock. "The action was unpredictable. I couldn't walk around taking readings. I'd just start shooting and set the f/stop simultaneously."

Corrosion

"After two weeks at sea, the rotating finder froze up from salt-water corrosion. I oiled it and coated it with silicon... worked perfectly. Other than that, *no camera problems.*"

Delivered

"I shot about 12,000 feet on the voyage," says Mr. Brock. "We had all our eggs in one basket with that camera — and it delivered."



ARRI
ARRIFLEX COMPANY OF AMERICA

Arriflex Company of America: P.O. Box 1102C, Woodside, New York 11377; phone: (212) 932-3403. Or 1011 Chestnut St., Burbank, Calif. 91506; phone: (213) 845-7687.

THE MAKING OF THE ORIGINAL "KING KONG"

A fascinating analysis of the amazing techniques and special effects used in filming this "Beauty and the Beast" epic, which has remained a cinematic classic and cult favorite for the last forty-four years

The following article is excerpted generously from the book, *THE MAKING OF KING KONG* by Orville Goldner and George E. Turner. The publishers, A.S. Barnes (hardback), 1975, and Ballantine Books (paperback), 1976, have graciously granted permission for the use of this material in this special KING KONG issue of *American Cinematographer*.

Opening *THE MAKING OF KING KONG* we read: "It is dedicated to three authentic motion picture pioneers, Merian C. Cooper, Ernest B. Schoedsack and Willis H. O'Brien. These men had uniquely different personalities and talents. Together and separately they made truly original and important contributions to the motion picture arts and sciences. Their influence on films, and thus audiences around the world,

is still to be measured."

Certainly if there were no other evidences than the release of a new KING KONG and the devotion of an entire issue of a magazine to its appearance forty plus years after the first KONG, the truth of the dedication would have been amply established.

PROLOGUE

In the beginning was *Creation*. The scene is RKO Studios, Hollywood, 1931. In the early throes of a major depression, RKO was faced with serious problems of reorganization and budget cutting. Part of the action was the arrival of David O. Selznick to take over studio management from William LeBaron. As new boss, Selznick was instructed to make whatever changes were necessary to put the company

back in the black, no matter how drastic the surgery. A quick consequence was that all productions were halted for study and some were immediately aborted.

Selznick soon realized that he needed a tough and perceptive assistant to help appraise the extensive list of unfinished films and scripts. The assistant turned out to be a thoroughly organized businessman with experience and interests beyond, but including, film production, Merian C. Cooper.

Cooper was fascinated by the scope of his task, which he attacked with great gusto. But one project in particular claimed his major attention. It was *Creation*.

Already in production and testing for a year, this unfinished adventure film

One of a series of superb renderings by Mario Larrinaga, establishing the visual mood and character of the sequence in which Kong struggles with a giant serpent inside the great cave.





The most beautiful key drawing of all — also rendered by Mario Larrinaga — to precisely articulate details of the log-canyon set. Both this drawing and the one on the opposite page are from the original art in the collection of Orville Goldner.

was eating up funds at a rate unrelated to any real progress toward completion. What had been done, however, crystallized in Cooper's mind a long-cherished idea about a giant gorilla in an epic thriller. He seemed to see at once that all the technical problems he had envisioned over the years could be solved by the men (Willis O'Brien, *et al*) and methods already at work on *Creation*. So, in what might appear as one easy gesture, *Creation* was out and a Cooper-conceived test reel of a new idea was in — approved, of course, by Mr. Selznick.

At the outset it must be said that *Creation* was one of the most intricately planned film projects ever launched. Every aspect of lighting and action necessary to produce the ultimate dramatic value of each shot was decided before consideration was given to the mechanical means of producing the desired effect. O'Brien made numerous sketches depicting highlights of the scenario. These were developed into large, comprehensive illustrations. Continuity sketches were then made in shot-by-shot sequence, linking the larger drawings so that each scene in the script was pictured. Lighting, camera angles, sets and props,

planned action and the relative scale of all elements were illustrated. Precise diagrams showed camera positions, lenses, and perspectives.

The illustrations were the work of three gifted artists, Mario Larrinaga, Byron L. Crabbe and Ernest Smythe.

All of these precise planning methods could now be adapted to the

Cooper idea which at this point was scheduled as production 601, *THE EIGHTH WONDER*.

AN APE IS BORN

Immediately Cooper was faced with the problem of a minuscule budget to produce a test reel of film spectacular enough to impress a group of execu-

An unfinished composite scene. The log-canyon components on the left side of the frame were filmed at the Gower Street Studio. The jungle component on the right side of the frame was shot on Stage 11 at the Pathé Studios.





One of the first closeups of the giant gorilla to appear in the original production of "KING KONG". In it he looks aghast (and slightly cross-eyed). Considering the small size of the ape puppet (only 18 inches high), an astounding variety of expressions was achieved.

tives who were unable to agree on anything other than the need for careful budgeting. The Cooper genius for organization and human relations was equal to the task.

After consulting with O'Brien, Cooper asked Delgado whether it would be possible to build a gorilla which, on the screen, could be made to appear as large as a dinosaur. Delgado replied that he could do it. When Cooper had left, O'Brien told Delgado to "make that ape almost human." Accordingly, Delgado designed a monstrosity in which were combined the features of man and ape.

"That's the funniest-looking thing I've ever seen!" Cooper declared when he saw the completed job. "It looks like a cross between a monkey and a man with long hair. Damn it, I want to put a pure gorilla on that screen!" After a great deal more work, Delgado produced a second Kong that was more lifelike but yet retained certain manlike characteristics. Cooper was again dissatisfied.

Delgado finally made the gorilla to Cooper's specifications, cheating only to the extent of paunch and rump.

"Kong was eighteen inches high," Delgado says. "The skeleton was made

of high-tempered dural and I gave him muscles that react, which is why Kong looks alive instead of stiff. I was given pruned rabbit fur to cover him with and I never was satisfied with that because I knew it would show the fingerprints of the animators."

Two weeks later, Cooper and O'Brien began shooting scenes for the test reel on Stage 3 at the Radio lot. Visitors were barred as technicians and cameramen set to work in units separated by high, black drapes designed to keep light from spilling into neighboring sets. The only actors employed at this point were the eighteen-inch ape and several of the dural-and-rubber dinosaurs originally built for *Creation*.

THE USE OF GLASS

The settings were intricate combinations of miniature construction and paintings on flats and glass.

Glass painting had been used since the early days of film-making to add the upper portions of sets only partially built (i.e., the towers of a castle or the ceiling of a cathedral), to create desired backgrounds which otherwise were unavailable. By the mid-Thirties the method was largely displaced by improved matte and optical processes.

Glass paintings were rendered on sheets of plate glass that was flawless and iridescence-free, in tones of opaque grey (and, later, in colour). A high degree of precision was necessary in the matching of proportions, perspective, lighting and textures. Detail was critical inasmuch as the rendering would be greatly enlarged on the screen. Painted areas were backed with opaque black paint while the remaining portions were left clear. The glass was placed between the camera and the set in such a position that, as seen through the camera lens, the lines of the set and the artwork were matched perfectly.

O'Brien's adaptation of glass art was unique. As many as three planes of painted art were prepared for many of the jungle scenes, with constructed miniature set elements positioned between glasses. The art flats and the solid forms were carefully aligned and blended to produce scenes possessing a realistic atmosphere and a convincing illusion of depth. The settings were lighted by the cameramen to match the light patterns of the original designs. Sometimes the sought-for effect could not be achieved through actual lighting, whereupon paint technicians spray-painted the offending areas to conform to the original conception.

Although miniature projection replaced the old stationary matte proc-

In this unfinished matte shot test, cameraman Eddie Linden acts as his own stand-in (sit-in?), as Kong beats his chest in fury.



ess in many instances, a variation of split-screen matting was useful in putting certain "live" elements into some animated scenes. These mattes were produced similarly to glass shots. The artist would matte out portions of a scene by applying black paint to a sheet of glass mounted in front of the camera. When the first shot was made through the glass, the black area (neither transmitting nor reflecting light) permitted the negative to remain unexposed in that portion of the shot. The "live" portions were then filmed through a glass on which a counter matte had been painted; that is, over the exposed area of the shot.

In scenes with architectural features to be matched, the mattes had hard edges. In jungle and other nature settings the mattes could be soft-edged and consequently easier to control. Overlapping of the two components resulted in white masses or lines at the points of matching, while spaces left open between the two (or more) components resulted in black areas. Avoiding these obvious shortcomings (called pluses and minuses) was most important for quality production.

PLANTS AND ANIMALS

Dramatic jungle trees were modelled in plasticine clay over wood-and-wire forms. These were covered with toilet tissue, then shellacked and painted. The tree foliage in some instances consisted of sprays from small shrubs, such as genista, which were wired onto the constructed branches. Palm fronds, ferns and certain other leaf forms were cut from copper sheeting thinner than writing paper. Mingled with man-made plants were small succulents, desert shrubs and other living plants. A "green man" obtained grape roots from vineyards where old orchards were being replaced or destroyed and these were used in making gnarled miniature trees and vines.

Animation is comparatively simple when applied to objects that operate from a fixed axis, but walking or running animals are much more difficult because their body weight shifts with each step. For this reason the sets were built on tabletops made of two-inch pine through which numerous holes were drilled. The holes were designed to accommodate specially designed clamps that could be inserted from underneath into the metal feet of the beasts as they "walked." By this means the animals' feet were held securely in position each time they touched down. The perforated tabletop was hidden from camera view by

Continued on Page 72



The hapless heroine of the original "KONG" — the durable Fay Wray — squirms in the huge hand of her captor. This is a composite test, in which the giant hand was juxtaposed against a background scene of the miniature Kong.



ABOVE) Fay Wray acts out her terror in prop treetop in front of the Saunders screen on which the rear-projected Tyrannosaurus approaches. (BELOW) Kong engages the giant dinosaur in a fight to the death.



CREATING FILM MAGIC FOR THE ORIGINAL "KING KONG"

How the innovative techniques developed for this classic fantasy film resulted in a cinematic tour de force and established a whole new roster of special effects methods — many of which are still in active use today

By LINWOOD G. DUNN, ASC

If ever a picture demanded of its creators a measure of devotion above and beyond the call of duty, it was the original "KING KONG". During the 55 weeks the picture was before the RKO Radio Pictures cameras, and for a similar span of time spent in experimentation for a doomed production that served as the proving ground for the making of "KONG", a small army of adventurers, artists, cinematographers and multi-skilled craftsmen labored to breathe life into a dreamlike fable.

The seed of "KONG" was "CREATION", which, during 1930 and '31, was being directed by Willis H. O'Brien, who had been a leading expert in unusual visual effects since about 1914, and Harry O. Hoyt, a writer and director. This team had made the highly successful "THE LOST WORLD", which First National released in 1925. "CREATION" is about an American yachting party and the crew of a Chilean submarine who are deposited by a gigantic storm into the bowels of an extinct volcano. They find themselves in a prehistoric jungle infested with dinosaurs and other ancient monsters, and after many adventures the survivors are rescued by airplanes.

At RKO we actually worked on "CREATION" for about a year. I assisted Karl Brown — the brilliant cinematographer of "THE COVERED WAGON" and director of "STARK LOVE" — doing some of the effects-photography testing. He was highly creative. For example, we filmed a se-

quence of a great waterspout, a sea-going tornado. He created it in a large glass tank, spinning a quantity of dark-tinted carbon tetrachloride into the clear water to form a swirling turbulence. On film it looked exactly like a twister in the air! Some other scenes were shot in that tank, including a rocky headland rising from the sea and some business involving a submarine. Clear gelatin was put in the water to give it a more ponderous look.

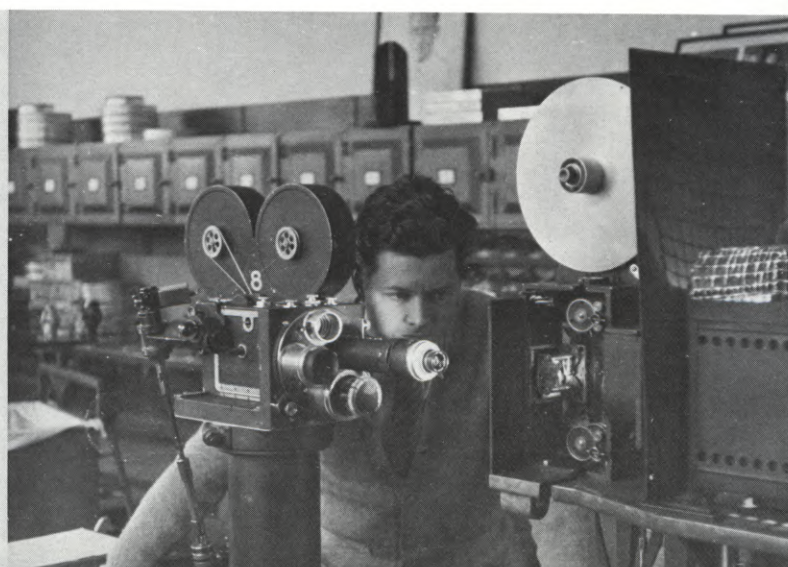
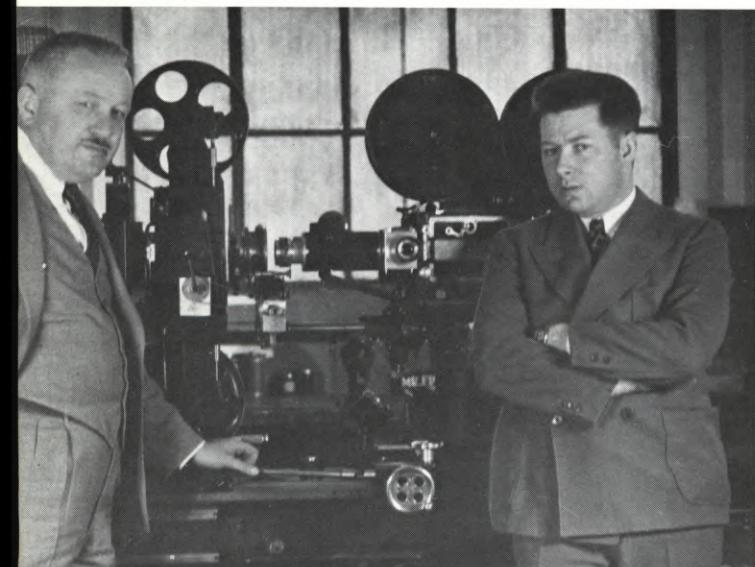
O'Brien and his crew meantime were working on the prehistoric scenes, for which the crew built some beautiful jungle sets in miniature, combining as many as three layers of glass painting with specially constructed trees and foliage, as well as live plants. The animals averaged about two feet in length and were beautifully detailed. The flesh, muscles and skin were made of rubber built over intricately tooled dural armatures with joints pliable enough to move into any lifelike position, and yet sufficiently firm to hold each position indefinitely. A young Mexican sculptor, Marcel Delgado, built these monsters to O'Brien's specification. He didn't cast them as most craftsmen do today, but built them from the armature up. O'Brien and his assistants brought them to cinematic life through stop-frame animation more exacting than any that had been attempted before.

Recently, at the Third Annual Telluride Film Festival, in Colorado, I saw the world premiere of "CREATION" — or at least of the few scraps of it that have been rediscovered — 45 years

after it was abandoned. There exists a marvelous sequence involving three animated triceratopses which are combined through the Dunning composite process with an actor and several live animals — a jaguar, a chimpanzee, a lemur and a crane. Tiny animated birds flit through the jungle foliage and a running stream is masked into some of the scenes. These composites were made right in the camera without any post-production optical work, and they were very good, with no evident bleeds or ghosting. For our younger readers it should be explained that the Dunning system was a self-matting process by which previously photographed scenes could be combined on a single strip of raw negative stock with newly photographed elements. It was an ancestor of the sophisticated blue-backing and sodium vapor composites we find invaluable today.

The Dunning system already had been used to good effect in several films, a fine example being the sensational scene in "TRADER HORN" in which a native spears a charging lion. The process is based on the principle that an object of a certain color is invisible when viewed through a filter of that same color, but is distinct when seen through a filter of a complementary color. A positive transparency of the background action was prepared in which the silver particles that make up the image were bleached out and replaced with a yellow-orange dye, creating a toned positive. This toned print was loaded into a bipack camera magazine together with a reel of raw

(LEFT) The late Vernon L. Walker, ASC, (Head of the Photo Effects Department at RKO-Radio Pictures) and Linwood G. Dunn, ASC, in 1932 with the then-new optical printer used in filming much of the special effects work for the original "KING KONG". (RIGHT) Dunn operates his optical printer — in its early form — at RKO. Primitive in comparison to the printers Dunn now employs at his Film Effects of Hollywood studio, it was, at the time, the most efficient in existence. Dunn and his assistant, Cecil Love, later designed the Acme-Dunn Optical Printer, which won an Academy technical/scientific award in 1944.





On display at the recent Telluride (Colorado) Film Festival's "Tribute to KING KONG", was the duraluminum armature for the original Kong mode

negative stock, both passing through the camera aperture back of, and in contact with, the dyed print. A brightly lighted special blue backing, when photographed through the dyed print, acted as a printing light, producing a black and white duplicate negative of the scene from the orange positive, which in actuality had been contact printed rather than photographed onto the raw stock, by exposure from the complementary-colored backdrop. When actors and props were placed between the blue backing and lighted with lamps screened with filters identical in color to the orange dye on the print, these foreground objects combined with the previously photographed action onto the raw stock. The backgrounds didn't print through the foregrounds because the orange-lighted actors and props blocked the blue light.

"CREATION" was cancelled late in 1931 by an edict from the office of the vice president in charge of production, David O. Selznick, who acted on the advice of his new administrative assistant, Merian C. Cooper. Both men were hard-nosed perfectionists, not always easy to work for but capable of getting all hands to produce the best possible results. Cooper had wanted to make a jungle picture in Africa and the East Indies utilizing a live gorilla and some giant dragon lizards from Komodo Island, but when he saw the lifelike dinosaurs in "CREATION" he talked Selznick into letting him film his gorilla story right on the lot, using the talents of O'Brien and his crew. That was the end of "CREATION" and the start of "KING KONG", and most of the crew

weren't sure when they stopped working on one picture and started on the other! Some of the setting and animals that were built for "CREATION" also became parts of Cooper's production.

By this time I was busy developing a more sophisticated printing department, refining the first optical printer on the lot for the new camera effects department, which was headed first by Lloyd Knechtel, ASC, and later by Vernon Walker, ASC. In this work I had the invaluable assistance of Cecil Love, and engineer Bill Leeds. We still have the remains of this pioneer device at Film Effects of Hollywood, although it is now somewhat of a museum piece. Even so, it was a tremendously versatile machine capable of yielding a great variety of effects. Gradually, the producers on the lot learned what magic could be created on an optical printer and we became very busy, doing all types of work with this exciting effects device.

Meanwhile, O'Brien — a genius at creating visual effects, but so much a loner that he worked in techniques of his own design and wasn't too aware of our work — was doing composites in the camera. This often entailed re-takes of complex shots that took a long while to set up and another long time to animate, with much time out for making tests to check balance. In these composites there was a constant problem of mismatched quality between the foreground and the background elements. At some point partway through production I was able to convince O'Brien that I could save him a lot of trouble by working out on the optical printer such compositing problems, where there was much greater control and at lower cost.

Eddie Linden, ASC, was Director of Photography, and he kept from two to ten camera set-ups available on the set



At Telluride, the still-vibrant Fay Wray poses with a replica of her co-star, the 18-inch stop-motion animated Kong puppet which loved her.

at all times. Assisting in his camera crew were Bert Willis, Harold Wellman, Bill Clothier, Cliff Stine, Bill Reinhold, Eddie Henderson, Felix Schoedsack and Lee Davis. J.O. Taylor, ASC, was also a Director of Photography on some sequences, and Vern Walker, ASC, was always on hand to bring his special effects expertise to bear on a variety of tricky problems. The large photographic corps was necessary in order to make any appreciable progress on the picture, because in animation, only fifteen or twenty feet of film might be produced in a day's work. This is why there were six identical 18-inch models of Kong, which permitted at least two to be in the repair shop at all times. Experts from the art and miniature departments were engaged in matching textures between minia-

Continued on Page 96

Cast and crew alumni of the original "KING KONG" pose for a "class reunion" photograph on Telluride Opera House stage. (Left to right): Linwood G. Dunn, ASC, (Special Effects Cameraman); Mario Larrinaga (Artist); Dorothy Jordan Cooper (Mrs. Merian C. Cooper); Fay Wray (Leading Lady); Zoe Porter (Production Assistant to Mr. Cooper); Archie Marshak (Associate Producer); and Orville Goldner (Technician and co-author of "The Making of King Kong").



"KING KONG" - THEN AND NOW

A top special effects cinematographer who worked not only on the original "KING KONG" almost forty-four years ago, but on the new one, as well, looks back in nostalgia and makes some interesting technical comparisons

By HAROLD WELLMAN, ASC

It is not often that one has the unique experience of working on a classic motion picture, and then — almost forty-four years later — being called upon to work on the remake of that same motion picture. But, as Fate would have it, that is exactly what happened to me.

I worked as an Assistant Camera-man for RKO-Radio Pictures from 1930 to 1939, and it was during that period (1932) that I was assigned to work with the great cinematographers and special effects technicians who created the classic original "KING KONG".

About a year ago I was asked to work on the new and contemporary film version of the same story, the multi-million-dollar Dino De Laurentiis production of "KING KONG".

In what follows, I would like to share my recollections of both projects and draw some comparisons between the two:

"KING KONG" THEN — 1933

From time to time throughout the

history of the film industry it seems that the necessary ingredients have come together to create a memorable motion picture, and such was the case with the original "KING KONG" — although it didn't start out that way.

In 1932 Merian C. Cooper and Ernest Schoedsack were both at RKO Studios developing properties. Up until that time, Cooper had been a producer and Schoedsack a documentary cameraman and they had worked together on outdoor adventure films, including "GRASS" and "CHANG". Somehow "KONG" evolved from an earlier project titled "CREATION", which had been cancelled before completion. With a modest budget of \$400,000 and a 26-day shooting schedule (later increased considerably), "KING KONG" went into production. Willis O'Brien, who had been technical advisor on a picture called "THE LOST WORLD", was hired as technical advisor and animator on the film. Cooper was the producer and Schoedsack the director. The stars included Fay Wray, Robert

Armstrong, Bruce Cabot and, of course, Kong himself. The cameraman was Edward Linden, with Lloyd Knechtel as special effects cameraman.

All over the RKO lot jungles began to grow in one-quarter-inch scale, one-half-inch scale, one-inch scale and full scale. Heads, arms, legs and feet of all sizes were made for Kong.

Now began the correlation of all the action called for in the script. Equipment had to be built — including some that had never before been used in the making of motion pictures. Included were armatures similar to those used in modeling — links of metal hinged together so that they could be turned in any direction. These were made up into sections so that they more or less resembled a human skeleton, and were then covered with rubber-type plastic, shaped to the conformation of the animal desired. The final covering was either simulated reptile or lizard skin. In the case of Kong it was fur — but more about that later.

Animation equipment to be built included stop-motion motors and relays that could be adjusted to various speeds. Sometimes there would be three or four cameras on the same shot. Also to be designed were new projectors for front and rear miniature projection. We had a 16 x 18-foot screen made of ground glass, the largest ever built up to that time. Unfortunately, an electrician dropped a barn-door through the screen just a week after it was installed. About this time, however, the plastic type of screen that we use today was developed.

New optical equipment, also, had to be developed, under the supervision of Lloyd Knechtel, head of the RKO Optical Department. The optical equipment in use at that time was composed of a pedestal with a lamphouse and a camera. When the camera wasn't being used as part of the optical printer it was taken off and used to shoot inserts.

The making of "KING KONG" involved every department in the studio. Often there would be five to seven units shooting at the same time. Willis O'Brien had to start a school to train more animators. Many times, after shooting five or six days, we could process only ten feet of film.

As filming proceeded it became apparent that this was truly a special effects production, in that practically

Director John Guillermin explains to Second Unit Cinematographer Harold Wellman, ASC, (right) what he wants done with the miniature Dwan held in diminutive Kong hand. Wellman, a noted specialist in special effects and miniature cinematography, worked as an assistant cameraman on the original "KING KONG" when it was filmed at RKO-Radio Studios in 1932.



every shot involved miniatures, front or rear projection, matte paintings, stereo projection, or a combination of all of these. In the meantime, more new equipment was being developed — equipment for front and rear stop-motion animation projection and for combining matte painting and stereo projection. In those days cameramen did not have light meters to use. Lighting was done by eye. I doubt if any cameraman in the business today can do this.

One of the problems encountered had to do with the hair on the miniature Kong. Step-by-step and frame-by-frame the hair would move in different directions, due to the handling of the model, air currents, etc. After each move the hair had to be carefully combed back into position.

Miniature projection, both front and rear, also presented problems. A system had to be devised that involved special "Inky" lights with controlled density, using stop-motion pull-down relays in sync with the camera. Tiny projection screens — some as small as 2 x 3 inches — had to be vibrated to control the grain in the screen itself.

Actually, from the time of inception to completion, the production of the original "KING KONG" took about a year — but in that year there was developed a whole new series of techniques, most of which are still in use today.

"KING KONG" NOW — 1976

It was a tremendous undertaking, a massive project, Dino De Laurentiis' production of "KING KONG". Top special effects men and propmakers were recruited from all over the world. Mr. De Laurentiis demanded absolute perfection in every element of the production of this picture. The color of the hair, the eyes, the expression, the scale size of Kong in relation to the background were major considerations. Weeks of testing ensued and many new techniques were explored. Lenses, costumes, makeup, front and back process, blue-screen traveling mattes, split-screen and a whole new complex system of camera and video technology were developed to marry the background and foreground images for composite scenes. There were more of these utilized in the production of "KING KONG" than have ever before been incorporated into a single motion picture. The building and operation of the component parts of the giant mechanical Kong added up to an overwhelming technical achievement. The size and flexibility of the structure are breathtaking.

A storyboard was prepared by the



A test scene from the original "KING KONG", which shows a fierce dinosaur menacing the long-suffering Fay Wray (in treetop). The scene involved miniatures, glass painting and rear-projection on a tiny screen. Special effects developed for this fantasy classic were extremely sophisticated for the time, and several, in modified form, are still in use.

Art Department so that every scene was familiar to those working on the production. Cameramen were sent to various parts of the world to photograph production and background plates.

One of the many spectacular sequences in the picture is the one in which Kong comes crashing through the massive gates of the native compound. This involved a full-scale set of walls and gates, built to mammoth proportions on the backlot. Built on the stage was an exact scale model in miniature of the same compound, both inside and outside the gates. The entire sequence involved split-screen traveling mattes and miniatures. The actual crash through the gates was photographed in miniature, using multiple cameras running at various speeds, as the crash itself was photographed in one continuous action. Each portion of the action required a different speed. For example, the huge draw-bar begins to split; the gates begin to shake; the gates splinter; Kong actually breaks through the gates and falls into the pit which had been prepared for him. Although this is a very short sequence on the screen, the preparation and photography of it took many weeks.

Another sequence involves a fight between King Kong and a huge snake inside a volcanic crater. In this we also

used both full-size and miniature crater sets. Miniature rear process photography was employed, with a 15-inch screen incorporated into the set. In this sequence traveling matte and split-screen were also used.

Probably the most spectacular sequence in the picture is the fire fight and Kong's giant leap across the tops of the twin towers at the World Trade Center. This shooting involved not only the actual location at the World Trade Center in New York, but the building of an exact miniature replica of the tops of the twin towers, their lower front facades and the Plaza below.

Another short but interesting sequence was that in which Dwan, played by Jessica Lange, falls into a muddy pool while fleeing from Kong. Filming the scene of Kong's hand smashing down at the edge of the pool involved full-scale and miniature sets, plus split-screen.

I have worked in the motion picture industry for many years and one of my several specialties has been the photographing of miniatures. I can truthfully say that the sets and miniatures in this latest production of "KING KONG", considered in terms of exact scale and perfection of detail, were the greatest that I have ever photographed. Also, we had a crew of very knowledgeable people — the best available in the world today. ■

THE CHALLENGE OF PHOTOGRAPHING "KING KONG"

Continued from Page 38

that flickered on the wall and supplemented the illusion initiated by the bonfires burning in the center of the set. In order to make the fire read realistically, I worked at a very low key — 20 to 50 footcandles of ambient light at all times.

During that night sequence there occurs a unique situation in which, in order to scare the natives away, the invading party fires flare guns into the air. Obviously, you couldn't put red filters on every single light while maintaining the basic night effect, so I achieved the illusion by placing a low contrast glass filter in front of the lens and projecting red light directly onto it. Utilizing a small shutter on the lamp and with just one 5K red light beamed into the lens, we were able to add sufficient red to simulate the effect of flares going off in the air. The whole scene changed from firelight to overall red for a period of 15 or 20 seconds until the effect of the flare diminished. At that point the shutter was closed and the scene returned to its normal firelight character. The whole striking effect was achieved in the simplest manner, without adding gels to any of the lights.

The majority of the picture was shot with light low-contrast filters — just enough to take the edge off the sharpness and bridge the gap between the original photography and the slightly degraded quality of the composite blue-screen shots. If we had used crisp,

raw photography on the original scenes and then gone to a blue-screen shot there would have been a tremendous jump in visual character, so I chose to use low-contrast filters to blend the trick shots in with the original.

In the case of the effect of flares going off, the slight texture of the low-contrast filter "grabbed onto" the red light. The filter was placed in front of the lens, but without a matte box, so that nothing impaired the full light of the lamp hitting the filter. In this case, one was almost welcoming a flare. The red light came from outside the frame — at about a 45° angle and just below lens level.

Because of the height of the wall, and in order to get maximum scope into the sequence, we made extensive use of a hydraulic construction crane that took us as high as 110 feet into the air. We constantly had a Chapman Titan crane with us, but a majority of the time we used the hydraulic crane. It carried a basket about six feet long and four feet wide and at times we had as many as three cameras placed on it. The crane was maneuvered by a couple of very gifted construction operators who had never utilized their equipment for motion picture work before, but they adapted brilliantly and enabled us to get some amazingly interesting shots without building scaffolding or laying extensive dolly tracks. We were able to swing this crane in an arcing motion and work as if we were dolly along the wall, with the giant arm of the crane telescoping in and out. It worked extremely well, because the sequence

was loaded with camera movement. There were very few static shots. We were always moving in order to add to the excitement of the festivities we were photographing.

Our next location was aboard a 1,000-foot oil tanker, on which we shot off Catalina Island for four days. As I mentioned before, the aim was to lend a "big" look to the picture. Everything in it is big. King Kong himself is big. The wall is big. The scope of the scenes on Kauai is big. And so, the tanker looked enormous. It was enormous, the size of three continuous football fields. In the film story, the tanker is the means of bringing Kong from Skull Island to New York City and only a ship of this size, in theory, could have accommodated a beast as big as Kong. We filmed both day and night on this tanker. We shot very low key at night on topside, utilizing the mercury vapor lamps that existed and supplementing them by means of incandescent lamps with plus-green gels in front of them to achieve a perfect match.

The day sequences were shot basically in backlight to help keep the tremendous ship etched at all times, so that its shape stood out. Otherwise, in flat light, the "big" look would have been diminished. On the stage we built the hold of the tanker in miniature and shot inside it with the man in the Kong suit. It, too, looked tremendous in size. It had mystery to it. The illusion of size was maintained by dropping miniature bananas and other fruit through the grate to feed Kong. This miniaturized fruit — about one-inch in size and created by the prop department — was dropped through the grate and filmed at 98 frames per second. Shot at that high speed, it just keeps falling down and down and down until it appears to have dropped 150 feet to the bottom of the hold.

We also built a segment of the hold life-size for a sequence in which Dwan falls through the grating into the hand of Kong. There is a brief horrendous moment when you think that he's going to crush her, but he becomes docile and she is able to climb up the ladder. This sequence was filmed on several stages, with some scenes in the miniature set, some in the life-size set and some against the blue backing. I must say that in the cut sequence you can't tell which is which.

The "star" of "KING KONG" is, naturally enough, Kong himself and, needless to say, he received star treatment in every respect. He had his own dressing room, his own costumer, his own makeup man — and he had his "good" side and "bad" side. The tech-

Continued overleaf

Kong lies dead after falling to the Plaza of the World Trade Center in New York. Lighting was complicated because there was almost nowhere to hide the lamps, plus the fact that, because the lights were a quarter of a mile below the lens of the camera, accurate exposure was most difficult to calculate. Forcing the film in development, however, produced a very good result.



ADOLPH GASSER INC. WINTER SALE

CAMERAS

Canon Scoopic 16	\$ 650.00
Eclair NPR package	7500.00
Arri BL package	8500.00
Mitchell R-16 package	4600.00
General SSIII package	2800.00
Wilcam S8 package	1800.00

LENSES

Pan Cinor 12x120 Rx (New Demo)	399.00
Vario Switar 16x100 Bay. (New Demo) ..	895.00
Canon TV Zoom 15x150	300.00
Angenieux 12-120 Bolex Pro Mt.	1800.00
Pan Cinor 17-85 Arri Mt.	395.00

SOUND

Palmer Interlock Transport only	1800.00
Mgnc/Moviola Tape Transport (Playback) Rack	1900.00
Vega Wireless 55-56 Combo	625.00

PROJECTORS

Bell & Howell Model 535	399.00
Bell & Howell Model 540	399.00
Bell & Howell Model 545	399.00
Bell & Howell Model 1552	425.00
Bell & Howell Model 202 (Opt/Mag) ...	479.00
Bell & Howell Model 399	349.00

MISCELLANEOUS

Bolex Matt Boxes (New Demo)	\$126.00
Bolex Uni motors (New Demo)	98.00
Bolex Pro 400' Mags.	375.00
Beaulieu 200' Mags.	235.00
J & K Cel Punch (New)	185.00
J & K Animation Motor K 203 (New) ...	189.00
J & K Motor K 203-D Sep. controls (New) Fr. Counter	286.00
Richardson Animation Disc	100.00
J & K Precision Field Guides	7.50
Akeley Gyro Tripod	325.00
Arri Cradle Friction Head	150.00
Power Rewind, HFC	165.00

DEALER
FOR

J-K ANIMATION EQUIPMENT

Light Tables — Discs
Animation Motors, etc.

G.E. MOVISCOPE VIEWER
LAMPS \$2.50

CP Battery Holder
Belt Pouches \$14.95

Merchandise Availability
Subject to prior sale

DEALER FOR

ACMADE

ADVANCED PICTURE
SYNCHRONISERS
and
EDITING EQUIPMENT

(415) 495-3852 181 SECOND ST. SAN FRANCISCO 94105

Photographic Equipment Service, Inc.

Andy Delio learned the truth about Wetgates!

Not all wetgates are created equal.

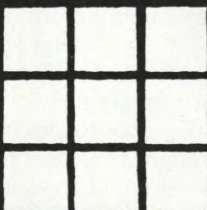
Andy Delio at Film Optical checked them out carefully before he bought his first LIQUITECH from P/E/S. It met his exacting standards to perfection. He found its flush fit to the projector allowed him freer use of his optical effects devices. Also it was easier to thread. He got perfect film registration with no air bubbles. And he could pass a splice without losing registration. He could run at high speed without removing the film from the gate. He could also freeze-frame and change film direction with ease.

And when he needed service, he got it—quickly, efficiently. Andy Delio was one happy man. So happy he bought *three* more LIQUITECHS from P/E/S.

Do you want to learn the truth about wetgates?

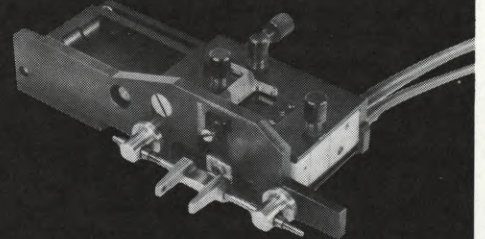
Call Ed Willette, Hans Jaggi or Pat Mathison at
P/E/S—Photographic Equipment Service, Inc.
(914) 235-2720.

Or write.



695 Main Street
New Rochelle, New York 10801
(914) 235-2720

Full sales and service available in Europe.



THE CHALLENGE OF PHOTOGRAPHING "KING KONG" Continued from Page 68

nique for lighting Kong was the same as for lighting the most difficult actress in Hollywood. First of all, his very furry facade absorbed a tremendous amount of light, so he had to be rim-lighted in order for his contours to really show up. Flat light on Kong would have been totally incorrect, and at no time was he ever lit that way. The placement of the light was dictated by the mood of the scene. For a romantic Kong it was placed in one way, for a ferocious Kong in another. For a lecherous Kong, as in one sequence, the light was placed in yet another way. His right side, I think, was better than his left side. He looked more sinister from the left side and more docile and gentle from the right side. Those who see the picture will realize that Kong had many facets. He was directed just as any other star is directed. John Guillermin treated him as if he were directing Steve McQueen or Paul Newman in "THE TOWERING INFERNO". He would thoroughly rehearse Kong for his expressions and the type of roar required, but filming Kong was more difficult than photographing any actor or actress I've ever worked with, purely because of the very critical positions he had to maintain in order to achieve the proper interpretation of the scene.

In the majority of scenes we would shoot up at Kong in order to give him the appearance of massiveness. (After all, he was 42 feet tall!) Then, for reverses, just the opposite would take place; we would have to shoot down — either over his shoulder or from his point of view — which necessitated having the camera at least 45 feet in the air. This is where the hydraulic crane which I mentioned earlier was put to good use. We could film from the basket and get extremely high angles shooting down, either onto the actor who was performing opposite Kong or over Kong's shoulder.

Another challenge was getting the proper light and exposure balance between Kong, who was a brown furry animal, and our human stars, Jessica Lange and Jeff Bridges, both of whom had blond hair. Reading a meter was impossible. It was just a question of visual judgment, sighting it through the camera and using rim lighting to make Kong stand out. It was a matter of "etching" him against his background.

For closeups we utilized the miniature version of Kong, which was played by Rick Baker, a very daring and, I must say, unclaustrophobic individual who actually got into this enormous bear

skin and was subjected to tremendous degrees of heat while remaining under our lights for several hours at a time. The maximum he could stand was, perhaps, about three hours at a stretch — and he had to have a fan blowing on him between set-ups. In addition to the oppressive heat, he had to wear over-size brown contact lenses that enlarged his pupils to give him a more ape-like appearance. But like the star that he was, he had a team of five or six attendants, including his own hairdresser and makeup man, plus the team of mechanical experts to articulate his facial expressions. He had a vast repertoire of roars, snarls, smiles, etc.

I must say that Rick proved to be a most cooperative and talented performer. He devised a very effective way of walking which was not totally ape-like, but the way one would expect Kong to stride. We created our own Kong. Even though he appeared to be a gigantic ape, he was not the kind of ape you would find in the local zoo. His facial expressions were articulated by levers controlling 25-foot cables leading up through the leg of the Kong suit to the inside of his head. He had a whole series of mechanized masks, each of which was capable of six or seven expressions, and it took three men to operate the levers. He had one extremely clever mask for the sequence in which Kong picks up the leading lady and holds her under a waterfall after she has accidentally slipped in the mud while trying to run away from him. He picks her up out of the water and blows gently on her to dry her off. With the intricate mask he was wearing, he was able to press his lips together and puff out his cheeks. This was an extremely difficult mechanical maneuver, but Carlo Rambaldi, genius that he is, was able to achieve it.

Kong found himself in many unique situations, including the one where he was required to stand on a 40-foot parallel at Los Alamitos Air Base at night, while helicopters came flying at him firing blanks from Gatling guns that expend 4,000 rounds per minute. In this case, Rick Baker had to wear a plastic shield (as we also did on the crew) to protect himself from the wads that could possibly fly out of a helicopter diving within 25 feet of his standing position.

In this sequence, in order to preserve the illusion that Kong was 42 feet tall, we used a 30mm lens with the camera very close to Rick and shooting from behind his back. In this way we were able to enlarge Kong's stature and throw the oncoming Huey helicopters

(which were quite large in size) into a smaller perspective as they approached. In order to maintain a depth of field and hold focus between Kong and the helicopters, I was able to work with split diopters. The diopter was hand-held right up against the lens, so that it could be slipped right or left or up and down, whatever was called for, in order to make the required adjustments for the diving helicopters. Otherwise, without the diopter and with the focus thrown toward the aircraft, Kong would have been nothing but a ball of fuzz.

Another challenge in this sequence was lighting the helicopters night-for-night. (After all, they did start off about a mile away before approaching close to us.) I was able to line up 10 arcs strung out in a row away from the parallel and use them as spotlights. It was like staging a number with the June Taylor Dancers — a matter of choreographing the spotlights to track the helicopters as they advanced toward the camera, without there being a shift of density in the light. The electricians handled the lights extremely carefully, so that one arc would track a helicopter just so far and then it would be picked up by the next arc. The result did not look like spotlighting at all, but rather like the helicopters were illuminated by ambient light from the City of New York. Exposure was precisely calculated so that the red, green and white running lights on the helicopters would overpower the arcs to look natural.

In another sequence Rick Baker as Kong had to walk in water up to his neck — truly a problem because of the absorption of water by the fur, which made the suit extremely heavy. In this case, he had to have a couple of scuba divers under him to help him across, not merely for his safety, but so that he could maneuver at all under these demanding conditions.

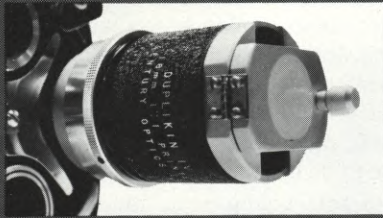
As if that weren't enough, there was the sequence in which Rick had to be fired upon by flamethrowers. These were precisely synchronized with an explosive charge rigged on his back to go off just as the flame throwers struck. The effect was that of Kong actually being hit by the flamethrowers, whereas, in reality, they were at least 10 to 15 feet away from him.

As I mentioned before, an essential element to making Kong appear enormous was to shoot up at him at all times, but this created its own set of problems — concealing the scaffolding at the top of the stage, for example. You certainly couldn't build a set that high or string it along the top of the
Continued on Page 92

IT'S CENTURY FOR PROFESSIONALS

OVER 30 YEARS OF QUALITY PRODUCTS AND SERVICE TO THE MOTION PICTURE INDUSTRY

DUPLIKINS



MAKE YOUR OWN OPTICAL EFFECTS. SAVE LAB TIME AND MONEY.

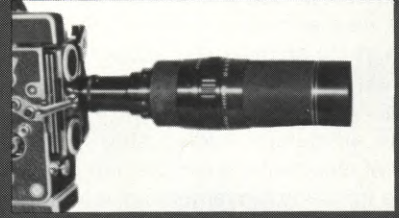
DUPLIKIN II: 16 to 35 SLR
DUPLIKIN III: 35 Slide to 16 M.P.
DUPLIKIN IV: 16 to 16 Freeze Frame
Hundreds in use by TV stations, schools, government agencies, and filmmakers all over the world.

SUPER WIDE-ANGLES



WORLD'S MOST COMPACT WIDE-ANGLE LENSES FOR 16MM PROFESSIONAL CAMERAS
5.7MM f/1.8 Super Wide. Only 7 ounces
3.5MM f/1.8 Extreme Wide, 165° Angle of view. Brilliant color results.
Both available to fit most 16MM Cameras, "C", Arri, Eclair, CP-16R, Bolex Reflex and others.

TELE-ATHENARS



WORLD'S SHARPEST, LIGHT WEIGHT SUPER-TELE-LENSES. Complete line from 150MM f/2.8 to 1200MM f/6.8. Precision mounted and tested - Complete accessories available - adapters, gel filter slots, brackets. New anti-reflection hard coating guarantees finest color correction.

WRITE OR CALL FOR LITERATURE ON THESE AND OTHER CENTURY PRODUCTS
ALL CENTURY PRODUCTS CARRY AN UNCONDITIONAL 30 DAY MONEY BACK GUARANTEE

Member Professional
Motion Picture
Equipment Association
pmpco

 **Century** precision cine/optics
A DIVISION OF CENTURY PRECISION INDUSTRIES, INC.

10661 BURBANK BLVD. NORTH HOLLYWOOD, CALIFORNIA 91601 TELEX: 66-2419/(213) 766-3715

CONSISTANT COLORFUL ECONOMICAL HELPFUL DEPENDABLE

Consistency is a key factor when quality lighting is necessary. Lee Filters has developed a complete range of color effects and color correction filters that have extremely high transmittance value, yet are virtually indestructible. They don't tear, burn, distort, or fade—even under the intense heat of quartz lighting. And you can count on the color consistency too, after continued use or when matching a color that you may have purchased a year ago. Our quality control standards

are the highest, even though our prices aren't. We overlook nothing to make sure that our filters arrive on your set prepared to do the job we say they can. Whether you need filters, diffusion materials, or just an answer to a question relative to light control media, remember LEE. We can help you solve your lighting problems quickly, efficiently, consistently, and above all... dependable.



BELDEN COMMUNICATIONS, INC., 25 WEST 45TH STREET, NEW YORK, N.Y. 10036 (212) 730-0172
BELDEN'S WEST COAST DISTRIBUTOR: PREFERRED DISTRIBUTING CO., 1266 N. WESTERN AVE., L.A., CA. 90029

SUSTAINING
SMPTA
MEMBER



THE ORIGINAL "KING KONG"

Continued from Page 63

glass art, foliage, and a low camera angle. O'Brien's first assistant spent a great deal of time crawling about under the tables to set and tighten clamps. Rods were sometimes concealed in the sides of the animals and anchored into the sets to hold the figures firmly in position.

The animators studied slow-motion films of elephants to aid them in developing the body movements of the dinosaurs. Eadweard Muybridge's

sequential photos of animals and humans were consulted as well. The human figures used in some scenes with the animals were six inches tall. The detailed characters were carved in wood and were firmly jointed so they would remain in any given position.

Tiny archaeopteryxes and other birds were made to flit among the trees on "invisible" wires. The birds were about one-and-a-half inches in length, with bodies carved in wood and wings made of pliable copper. They were advanced on the hair-thin piano wires in steps of one-fourth of an inch per ex-

posure and the wings were made to "flap" with minute cycles of animation. It was quickly learned that white birds are harder to animate than dark ones because they cannot be "lost" among the foliage and branches of trees.

Stand-ins for the dinosaurs were necessary because the latex skins of the working models suffered under the heat of the studio lights. The wood-carved versions were identical in size and colour to the movable animals seen on the screen.

Each scene was tested until its various elements were properly aligned and lighted. For this purpose a portable darkroom, measuring six by nine feet, was kept on the stage. After a short length of movie film was exposed, the camera magazine was taken into the darkroom without disturbing the position of the camera and the exposed strip of negative was developed. Frame enlargements printed from these negatives guided the technicians in adjusting artwork, properties and lights until the desired effects and necessary alignments of all components were achieved. Such precautions, although time-consuming, made it possible to avoid the errors in matching that compromise so many trick scenes. It is fortunate that some of the crew members kept a few of these tests as souvenirs, because these faded prints (they weren't *fixed* for permanency) are all that remain of many scenes of the film.

The methods devised by O'Brien and his crew to film this remarkable phantasmagoria, while deriving from O'Brien's earlier work, were more sophisticated by far. Cooper's imagination was even more vivid than O'Brien's and the greatest ingenuity was required to put his ideas on film. Several of Cooper's colleagues assured him that many of the scenes he envisioned could not possibly be produced.

Compromises were made and there were successes and failures, but with it all there was enthusiasm and the willingness to try anything. The test reel in acceptable time became a reality. Its reception was predominantly enthusiastic, although several highly placed executives were not sympathetic to the project and did their utmost to block it. Selznick offered it his highest endorsement and Cooper, with admonishments to keep the budget within realistic bounds, was given the green light to produce his feature in association with Schoedsack.

THE KONG CONCEPT

King Kong was essentially a fantastic version of the realistic *Chang*, an



(ABOVE) A raw unfinished miniature, with a wooden Kong and six-inch man standing in for the first lighting and texture test. (BELOW) Miniature, glass, painted backing and rear-projection elements combined to achieve the ultimate composite scene.





Dramatic action of Kong's furious battle with the Tyrannosaurus, as visualized in this beautiful key drawing by Byron Crabbe. (From the original art collection of Orville Goldner.)

expansion of genuine adventures encountered by the producers and writers into the realm of the impossible. The slow, deliberate build-up was necessary so that the viewer's suspension of disbelief could be maintained to the end. It would have been ruinous to permit the viewer to stop and think during the extravagant scenes following the introduction of Kong and the other monsters; he must be swept along with the action. The success of this formula has been demonstrated often by default by the majority of fantasy films which attempted to duplicate the success of *King Kong*.

One of Ruth Rose's greatest improvements in the story line was the avoidance of an involved sequence showing how Kong was brought to New York. The writer moved the action directly from Skull Island to Broadway with a few lines spoken by Denham as he surveys the unconscious Kong:

"Send to the ship for anchor chains

Continued on Page 80

Models of Fay Wray and the Tyrannosaurus in a miniature set, with unfinished glass painting in the foreground.



BLUE-SCREEN TECHNIQUES

Continued from Page 57

Now, when it came to marrying the blue-screen portion to the first part, we had either the video tape that we had recorded ourselves or the film-to-tape transfer, and we could use either one for line-up purposes.

When we shot the first piece for any kind of scene we would take very careful measurements of everything — camera angle, lens focal length, everything — and we would convert all those measurements to the ratio we were working in. Sometimes we scaled up and sometimes we scaled down. There were times when something worked out to be correct mathematically but, for one reason or another, it just didn't look right. In such a case, we simply had to take the liberty of changing it. But the video unit provided us with an ideal situation. We could see right then and there what the final result was going to look like when the separate film units were put together. All movements could be worked out; everything could be timed precisely; everything could be coordinated.

There was one sequence — the "glade" sequence, we called it — in which this video facility proved especially valuable. It's the morning after Kong has carried the girl off, and he's playing with her — a kind of cat-and-mouse game. She keeps trying to run away and he keeps constantly thrusting his hand out to block her escape. She starts to move away and he has to

lean forward to follow her action. The hand movement was being done by the man in the ape suit and he had to coordinate his actions precisely with hers. This could have been a technical nightmare, but the video facility made it very simple. All we did was put a monitor out in front of him, just off-screen, and he could look at it and see everything that she did and time his actions perfectly to hers. We were shooting from behind his back, so it wasn't obvious where he was looking, even though the monitor was directly in his line of view.

The instant replay characteristic of the video system proved to be most valuable. We could check synchronization and performance instantly. If an actor hadn't moved quite correctly it could be pointed out to him so that he could modify his action for the next take. He had a precise visual image of what he had been doing right or wrong. In the beginning there was some reluctance toward the use of this video system, but we found, as time went by, that it became more and more valuable and easier to work with. I really feel that without this electronic tool we wouldn't have been able to do the picture with the degree of finesse and quality that we achieved.

A sequence that was enormously difficult to do was the one in which the men cross the ravine on a big log. We had a blue screen at the bottom of the ravine, with the moving people crossing the log over it, and then, behind that, we had to marry a matte painting in the blue-screen area. The marrying

of matte paintings with blue-screen is rather difficult. You have to be sure your matte painting matches the practical set and you have to be sure your people don't have any fringing around them.

Each scene that we were called upon to composite presented a different problem and a different challenge. No two were alike and each had to be analyzed individually. We used many different systems and techniques to solve the problems on a shot-by-shot basis, and the analysis of which approach to use had to be done fast because of the impossible time element that we were constantly fighting. After a while, under conditions of stress like this, you become a little bit like a computer. As required, you just draw upon the store of knowledge you've piled up over a period of time, but this only happens when you've been in the industry for many years.

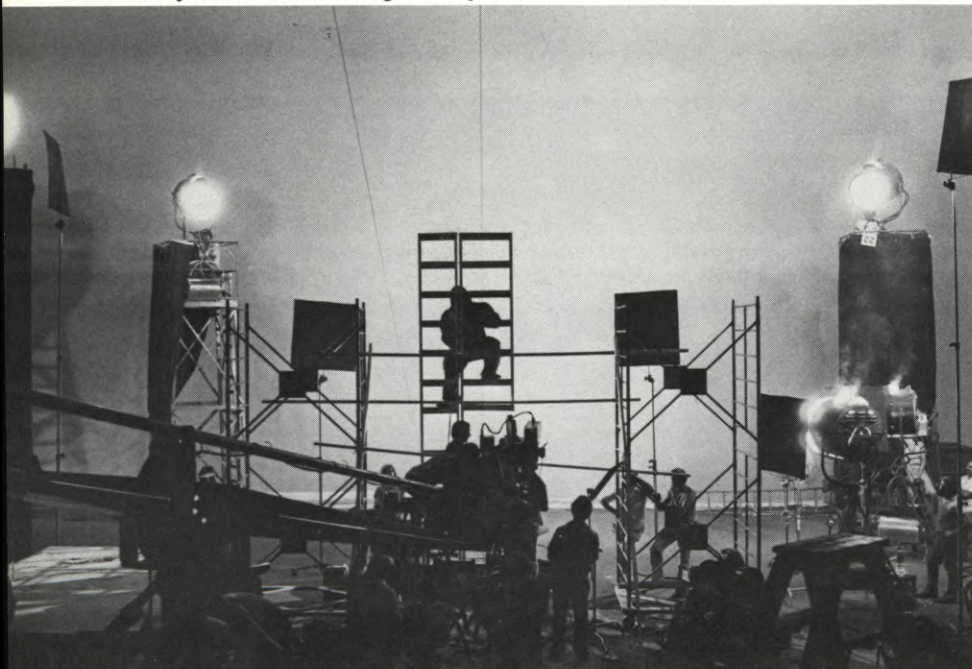
I believe that the attitude one assumes in using the blue-screen process is very important. Just because you are working with two or more pieces of film, you can't regard them as separate elements. You can't think of one as the foreground and the other as the background. They are really supposed to be on the same piece of film, and you have to think of them that way. When you are playing the huge mechanical arm of Kong against the miniature body, it really has to look like the arm is coming out of that body. Otherwise the effect won't ring true. In "KING KONG" I believe we have achieved a high degree of credibility. Audiences, I feel, will believe that they are actually seeing a 42-foot ape on the screen (or else a six-inch girl).

I've mentioned before the time pressures created by the accelerated release date and these added up to an almost impossible situation — because photographic effects, by their very nature, take time. How our director, John Guillermin, stood up under these constant time pressures I'll never know. He did the most fantastic job on this picture, because he had to work with whatever happened to be ready that day or that hour. If a set happened to be ready on Stage 27 he'd shoot there; if a miniature became available on Stage 25 he'd move over there. How he kept track of everything is a miracle. He's a very strong man on the set, but it really takes a strong person to make a picture like this because you can't have a lot of people exercising different opinions. One guy has to be boss.

Dino De Laurentiis was great, also. We received marvelous support from

Continued on Page 91

In front of the huge (100 x 80 feet) blue-screen, Kong climbs a form for composite element which will eventually end up as part of the sequence in which he climbs one of the twin towers at New York's World Trade Center. Blue-screen on this film replaced several other more costly and time-consuming techniques.





(LEFT) Against the giant blue backing (100 x 80 feet) in the studio, the band of explorers edges across a log supposedly bridging a yawning chasm. (CENTER) In segment of composite shot, they are shown from above while on the log. The "yawning chasm" below them is a matte painting. (RIGHT) The miniature Kong rampages on the edge of the cliff, after having hurled most of the explorers to their deaths. The "blue hole" obvious here is a blue-screen area into which was later matted a shot of Jeff Bridges crunched up against the wall of the cave below the ridge. (BELOW LEFT) Kong's giant mechanical hand holds Dwan against the blue backing. (CENTER) Background closeup shot of the miniature Kong. (RIGHT) The two images "married", so that it appears Kong is holding Dwan up to his face.



(RIGHT) Supervisor of Photographic Effects Frank Van Der Veer and opticals expert Barry Nolan, shown with the electronic compositing set-up designed to align precisely the foreground and background elements involved in blue-screen scenes. (Composite scenes of Kong can be seen on the monitors.) This preliminary "marrying" of the elements, in a manner similar to the "Chroma-Key" used in video production, enabled the technicians to check alignment of elements instantly, instead of "flying blind" and having to wait several days to see a composite. The unique "soft matte" technique developed by Van Der Veer made possible the photographing of Dwan's blonde hair and Kong's fur (both considered blue-screen taboos) without fringing.



BEHIND THE SCENES
Continued from Page 34

studio's backlot to photograph on one of the biggest sets constructed in Hollywood since the Golden Days of the 1930's and 1940's. It is a 47-foot-high, 170-yard-long wall, made of wood, behind which an altar was built where Dwan is sacrificed to Kong. For a month, 300 extras playing natives on Skull Island, performed at the wall, chanting and dancing before racing up the ramps to the top of it to see Kong make off with the girl.

The other principal location was the most controversial city in the world. No one connected with the film ever doubted that New York City would again have to be the place for Kong's rendezvous with his destiny among so-called civilized humans.

An estimated horde of 30,000 New Yorkers filled every square inch of the plaza of the World Trade Center for Kong's last farewell to his beloved Dwan.

Other locations used in New York were the elevated subway in Queens, an East River park, the 59th Street Bridge, and Hanover Square. While Guillermin worked with the first unit, a second unit shot on Fifth Avenue the response of a frightened public as Kong makes his way down to lower Manhattan and his fateful rendezvous with Dwan on top of the twin towers of the World Trade Center.

Not to be outdone, thousands of Los Angeles residents turned out on a Hollywood backlot for the presentation scene of Kong to the public after he had been returned in captivity from Skull Island. There was a collective gasp from the invited public when an enormous gas pump was lifted and there was the 40-foot Kong, flexing his fingers and toes, rolling his eyes and

straining at the chains holding him in bondage.

Even more spectacular was Kong breaking out of his cage and lifting pieces of metal. If there are Oscars for automated actors, Kong will surely win one in 1977.

Traveling half-way around the world throughout the production, "KING KONG" needed enormous technical and logistical support, receiving it from dedicated production managers and two camera units shooting simultaneously on land and sea, eight cameramen working concurrently in the various locations and full staffs in Hawaii and New York.

DINO ON "KING KONG"

For a producer who has had his name on some of the most successful films in recent times, Dino De Laurentiis believes his contemporary version of "KING KONG" is the most complicated picture of my life."

Costing nearly 24 million dollars, which covers the cost of a two-million-dollar mechanical monster, taking eight months to film on locations from remote valleys in Hawaii to the streets of New York, and employing a crew and cast of hundreds, "KING KONG" is the first film since he moved his operations to the United States in which Dino is the line producer, involved in the daily financial and artistic decisions.

Though it has a somewhat different story line from that of the 1933 version, Dino said "KING KONG" is still about beauty and the beast. "It is a straight, romantic adventure picture with some humor," he said. "It is a picture for everyone, the whole family."

It will have a PG rating, he added with a smile. "It can't be a straight G. There is a relationship between beauty and the beast."

Dino admits that there have been enormous technical problems in getting Kong filmed and into 2,200 theaters in the United States and overseas by Christmas, 1976. He attributed most of them to being in a race with another studio to film Kong, which caused him to start production too soon on his version.

Dino decided to do his version of Kong in May, 1975, after Paramount Pictures came to him with an idea on doing a monster movie. Remembering a poster from the old version of Kong that his teenage daughter, Francesca, had hanging in her bedroom in the family's New York apartment, Dino told the studio he already had his idea on the monster he wanted to film.

A script by Lorenzo Semple, Jr., was approved in August. Dino, seeing the scope of the picture and the incredibly technical processes needed to get Kong on film, estimated he would need seven to eight months of preparation. He planned to begin filming on April 15, 1976.

In November, Universal announced it was going to begin shooting its version on January 5, 1976. "I didn't believe it," Dino said, "but this industry is so crazy they just might be ready to start then. I knew I was in a big race, so I announced our picture would start on January 15th."

Mobilizing a production of the size of Kong was an around-the-clock operation, and in his office from early morning to late night, supervising the race, was Dino. Without all the sets built, or work on the 40-foot mechanical monster started, Dino took a gamble on the efficiency of talent he had assembled for the picture. "From the beginning I faced the possibility of having to shut down production if the sets didn't catch up with our rushed shooting schedule," he said.

During the filming of the new "KING KONG", various departments at MGM Studios resembled "Santa's Workshop", as hundreds of skilled craftsmen constructed sets, costumes, miniatures and electronic and hydraulic marvels for the film. (LEFT) Skilled artisans apply tiny leaves to miniature trees that must look and move like full-size trees. (RIGHT) Stuntmen fall off a log into a ravine built on the sound stage. In the final composite, an "almost bottomless pit" matte painting was printed in below by means of the blue-screen process.



A settlement was reached with Universal, which agreed to withhold the distribution of its Kong until eighteen months after Dino's picture was released. By then, Dino's "KONG" was already several weeks into production, heading towards location shooting in Hawaii.

"It cost us between three and four million because of the race with Universal," Dino said. But money had to be spent to make Kong the monster for today's audiences. "Our picture must have quality for it to be a success, to be a better picture than the first Kong."

ITALIAN-AMERICAN COOPERATION

Close cooperation between American and Italian craftsmen made possible the stunning visual and technical effects in "KING KONG." Bridging the language barrier were Carlo Rambaldi and Glen Robinson who designed and built the 40-foot mechanical Kong, and Dale Hennesy and Mario Chiari who executed the sets.

Kong, the single most impressive mechanical apparatus ever built for the screen, came from the blueprints of Rambaldi, one of the most brilliant effects designers in the Italian film industry, and brought to America for his first picture in this country by producer De Laurentiis with whom he had worked on "THE BIBLE" and "WAR AND PEACE".

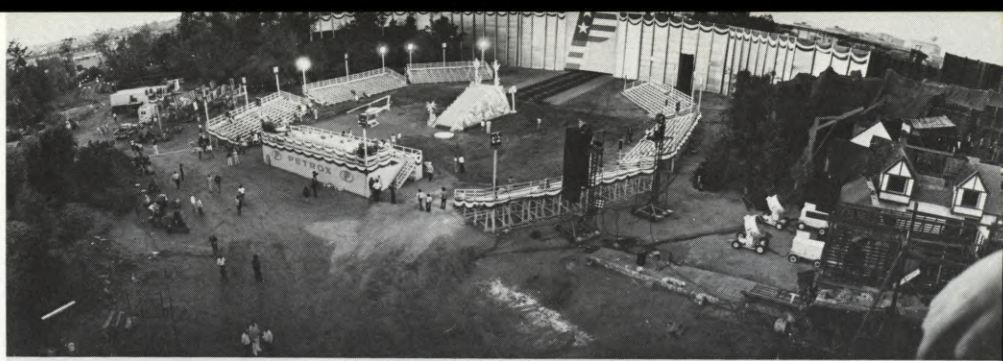
Robinson, an Academy Award winner for "THE HINDENBURG" and "EARTHQUAKE", assisted by 100 of Hollywood's top craftsmen, assembled the 40-foot Kong in an amazingly short time of five months, considering that an aircraft company, which had been approached to do the job, said it would take three years.

In the preliminary production stage of "KING KONG" Mario Chiari, a long-time friend of the producer's and an acknowledged master of design in Italian films, helped with the overall sets and assisted Rambaldi in getting the correct face on Kong.

Hennesy, one of the most respected designers in Hollywood, and an Oscar winner for "FANTASTIC VOYAGE", came aboard to work on the 107 sets, a movie record, that is Kong's world from Skull Island to New York City.

"In designing Kong," Rambaldi said, "we tried to make him a character who at any moment could become ferocious, but who is not basically bad, and who is very human."

The Italian-American concept was to make Kong moveable by a complicated hydraulic system, and this international cooperation continued behind the camera when men from



Acres of MGM Studios' Lot 2 in Culver City were cleared to build the giant exterior sets for "KONG". (ABOVE) The set representing a portion of New York's Shea Stadium under construction. (BELOW) The same set lighted and populated with thousands of extras for the sequence in which the 42-foot Kong breaks loose from his bonds.

Rambaldi's and Robinson's staffs controlled the nearly 70 hydraulic levers on a panel to move the ape.

A 24-year veteran of the Italian film industry, Rambaldi was trained in painting and sculpturing, and is a member of the Fine Arts Academy in Rome. "I work in cinema because I like to travel," he said.

When he is not on the road, he still does sculptures and paints, and is particularly proud of a piece of sculpture that he designed to move by electricity and to make sounds. He is also pleased with an electrical animated Pinocchio.

Work on "KING KONG", however, was as frantic as on any other movie. There were stretches when he was in his construction shop, laboring over his blueprints for 30 hours without going home.

"Rambaldi's plans were excellent for the mechanical Kong," Robinson said with sincere respect for his friend's ability. "The main secret in our Kong is the proportional balance in the hydraulic valves."

The skeleton of Kong, assembled first in Robinson's construction shop, was composed of 6½ tons of aluminum, and inside it was placed 3,100 feet of hydraulic hose and 4,500 feet of electrical wiring.

"Our Kong is fully functional," Robinson said. "He wiggles his arm, rolls his neck, twitches his ears, rolls his eyes, bends both legs, pulls his mouth back to show his gums, rotates on his hips, thrusts out his legs, and

when he has to, smiles."

CONSTRUCTING A COLOSSAL SUPERSTAR

King Kong, as brought to the screen in the contemporary version of the classic Beauty and the Beast story, may not be the handsomest movie star in Hollywood history, but he's certainly the biggest and hairiest, standing more than 40 feet high and covered with acres of fur.

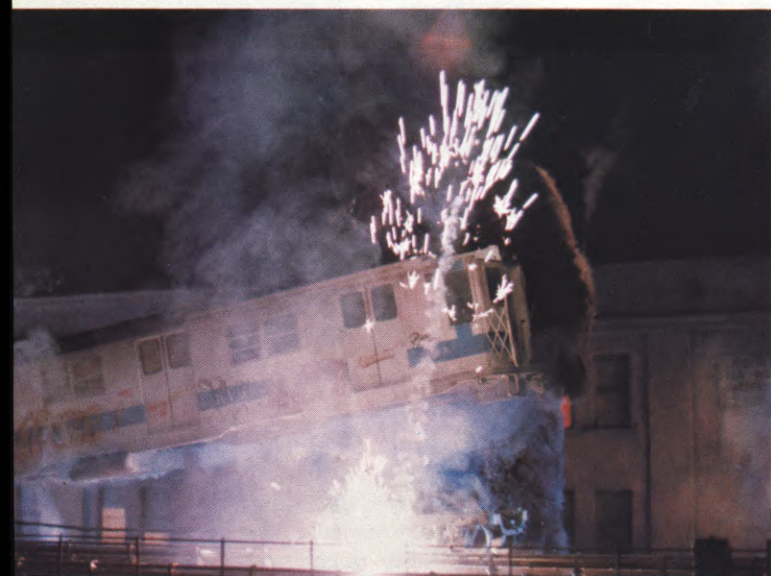
He hadn't even been born a year ago. At that time he existed only in the minds of Carlo Rambaldi and Glen Robinson, the two technical wizards charged with bringing him to the screen in all his life-size glory.

Discussions among Rambaldi, Robinson and the producer led to an agreement that Kong had to be monster-size and mechanical, having moving arms and legs. The original intention was to have an aircraft company build Kong from the designs of Rambaldi and Robinson, but when it became necessary to rush the film into production, the decision was to have Kong born in a Hollywood backlot. He was actually fabricated in the Construction Department of the MGM Studios.

Work on Kong began in January, 1976, months earlier than had been anticipated, and at his birth on that day he was a pile of aluminum and wires waiting to be shaped by the skilled hands of a hundred craftsmen assembled in the workshop by Robinson.



Maddened by the disappearance of Dwan, and in a frenzy to find her again, the desperate Kong rampages through the streets of New York, tearing up everything in his way, including elevated railroad trains. Neither electrical shocks nor clouds of flame (BELOW) stop him. The aftermath of this carnage was actually shot at the Astoria elevated station in New York, while the pyrotechnics shown here were staged in miniature at MGM Studios.



The dimensions of Kong, a tribute to the genius of the men who make movie magic, are staggering. He weighs 6½ tons. His skeleton is metal, mostly aluminum. His insides contain 3,100-feet of hydraulic hose and 4,500-feet of electrical wiring. His chest is 20 feet wide and his arm length is 20 feet.

He is fully functional, the first such creature conceived by Hollywood. His arms can move in sixteen different positions. He can walk and turn at the waist. His eyes and mouth move. He is a very human monster, terrifying when aroused but with the soul of a romantic lover.

The secret to his moving is in the proportional balance in the hydraulic valves, according to Robinson who believes Kong should retain some of his mystery, and not everything about him should be made public. But the master builder said these valves are operated by wires running through a crane to a control panel operated by six men.

While marveling at the mechanical wizardry of her ardent pursuer, Jessica

Lange, who spends much of the film literally in his hand, had legitimate fears about Kong getting carried away and crushing her in his hand. She was reassured by Robinson that safety devices had been installed in Kong's fingers so that they would be prevented from closing completely on her. Still, it took several lift-off trials before Jessica became convinced she was in a friendly hand.

After the wires and metal took shape and became Kong's skeleton, the next job was to see if he was functional. Everyone held their collective breath as the levers were pulled. Miraculously, he was up doing what his builders hoped he would do. His hips swung. His legs twisted in and out, and bent at the knees. His ears twitched and his lips pulled back revealing his gums and teeth. Kong was alive!

But he could not go naked into the world, and Michael Dino, a famous custom wig-maker for stars of stage and screen, was hired to cover Kong.

First, he came up with thirty-four samples of various kinds of hair. While

doing this, he visited zoos to get an idea not only how gorillas looked, but how they acted. "Gorillas are gentle, fierce animals. But Kong had to be special, and after studying them closely, I saw that gorillas had a sympathetic side," he said.

Horse tails were decided on, and 4,000 pounds were imported from Argentina. To keep the hair color uniform, some of the tails were bleached and tinted. Next, a hundred people began the painstaking process of weaving the strands of hair into four kinds of netting, a job that took months. When the hair was secured into hundreds of panels, each was then glued on huge pieces of latex which in turn were glued on a plastic mold that covered the metal frame.

Finished, Kong went immediately to work, but being basically bionic and too huge for the average-sized sound stage, he went to pieces, a hand for one scene, a leg on another sound stage for a different scene, his massive head in a third place, so that all of Kong was in use all the time, though only some-

times was he in one piece.

And he has an active role in the picture. He snatches Dwan from a sacrificial altar, fights a gigantic snake to save her, crashes through a huge wall to get to her, falls into a pit, ends up in the hold of a supertanker, gets transported in bondage to New York City, and then does his own version of a Cook's tour of the Big Apple trying to get back his lady-love, ending up on top of the World Trade Center.

The mechanized Kong, however, did not get to make the trip to New York. His alter ego, a 40-foot Styrofoam model, was taken there instead to play the death scene on the plaza at the Trade Center.

"SKULL ISLAND" IN HAWAII

Neither sudden squall, high tides, nor valleys and beaches never used before by a film company prevented Dino De Laurentiis' "KING KONG" from getting spectacular footage during its three-week location shooting on the north coast of Kauai in the Hawaiian Island chain.

Every morning, when the first light of dawn brought into visibility the sweep and grandeur of the green mountains and valleys of the Na Pali coast, helicopter pilots turned over their engines, ready to begin transporting two tons of equipment and a cast and crew of eighty to the valleys and beaches inaccessible except by boat or plane, or those intrepid campers who want to walk for two-and-a-half days over terrain made practically impassable by sheer cliffs.

The operation of getting everyone to the location took over an hour-and-a-half, and had to be repeated by four in the afternoon, before dense, threatening clouds descended from the mountain tops, enveloping the valleys. Unless the crew and cast were taken out by then, they would have had to spend the night there because helicopters, piloted by visual markings,

could not get to these locations in the dark or through fog.

Only on one occasion did this almost happen, and the veteran pilots, sticking their heads out of the window for better visibility, managed to get men, women and machines out of the Kululau Valley before it was blanketed by the clouds.

Throughout the shooting day, a supply line from base headquarters at the Hanalei Beach & Racquet Club was maintained by these pilots, most of them having learned their flying during the Vietnam war. To the crew and cast on the ground, they would bring in box lunches and even a portable toilet.

In the film this is Kong's Island, mysteriously surrounded by a fog belt, and once ashore, the attention of the principal characters is directed away from the reason they came there, to explore for oil, to the discovery of a huge footprint made by an obvious monster.

The 40-foot mechanical Kong was not brought over to Kauai for this part of the shooting. He was back in the studio keeping his arm limbered for when he would have to start picking up the beautiful Miss Lange.

But brought over for the Hawaii shooting by air freight were two 22-foot Chris-Craft launches, and a 19-foot Zodiac to be used in the sequence when the stars come ashore. A daily contention was the trade winds which come up about noon and whip up waves of 10 to 12 feet. For the comfort of crew and cast, these scenes had to be done in the morning.

There were many risks involved, not only in ferrying people to these locations by helicopter, but taking them to sea in open launches. Everything, because of advance planning, went off without a hitch, except once when the Zodiac stalled in the surf and a wave tipped it over. Fortunately, only the pilot was in the boat at that time, and he made it to shore easily.

The first part of the Kauai shooting



Italian film producer Dino De Laurentiis, now based in America and a dynamic force in the Hollywood motion picture industry, bludgeoned the "KING KONG" project through with sheer courage, in the face of an impossible time schedule and skyrocketing costs.

was done in the magnificent Kululau Valley, which most tourists see only from the top where there is an observation post reached by a road from the other side of the island. (No road goes through the Na Pali coast.)

One of the most novel experiences for the company happened on the day the shooting moved from the Kululau Valley to Honopu Beach, truly one of the loveliest beaches in the world, framed by mountains on each side, and in the middle, a natural arch through one mountain created by the relentless erosion of time.

The beach is only reached by plane or boat, and the night before the company arrived, Dennis and Debbie Lofstedt of Gresham, Oregon, who had just been married, were taken there by Dennis' brother, a local helicopter pilot, to enjoy a very private honeymoon.

Their privacy was violated at dawn, when they were startled awake by a helicopter hovering over them. It quickly landed and out stepped men
Continued on Page 84

In his last moments, the pathetic Kong attempts to fight off the helicopters firing at him with Gatling guns, only to be defeated by them in the end. Like many sequences in the film, some of these scenes were filmed "full-size", with actual Huey helicopters seeming to strafe Rick Baker in the Kong suit. Other scenes were staged in the studio with miniature remotely-controlled helicopters doing the strafing. In the final cut it is impossible to tell which is which.



THE ORIGINAL "KING KONG"

Continued from Page 73

and tools. Build a raft and float him to the ship. We'll give him more than chains. He's always been king of his world, but we'll teach him fear. Why, the whole world will pay to see this! We're millionaires, boys — I'll share it with all of you! In a few months it'll be up in lights: 'Kong, the Eighth Wonder of the World!'"

REAR PROJECTION

Reams of misinformation about King Kong have been printed — the result, presumably, of the traditional jour-

nalistic reluctance to let the facts stand in the way of a good story. The fact is that *no gigantic motorized robots or men in ape-suits were used at any time in the making of the film.*

Kong was, as Ernest Schoedsack has said, "the product of many contributions." One contribution of inestimable value was that of Sidney Saunders, supervisor of the studio paint department, who unveiled an important new technical development just as the *Kong* test reel was getting under way. This was a refinement of the rear projection process, the cellulose-acetate screen, which was destined to become a basic necessity in studio

production technique. [Rear projection permits actors to perform in front of a translucent screen, on the back of which is projected a previously filmed scene.] The camera records both the new action and the projected background in a single take.

Conventional projection mechanisms proved too unsteady for process work because the slightest "jiggle" or movement became obvious when a projected scene was juxtaposed with solid foreground objects. Other problems included *hot-spot*, the noticeably brighter light at the centre of a projected image, and *fall-off*, the resultant diminishing of illumination at the edges and corners of the frame.

Previous rear projection screens were made of sand-blasted glass. Aside from the fact that they were necessarily small, these screens produced a middle-grey image with no sparkling highlights or rich blacks. The images were dulled further by the necessity of using filters to control *hot-spot* and *fall-off*. They were fragile, non-insurable and hard to replace.

The Saunders screen, however, was flexible, non-breakable and impervious to any heat other than an open flame. It measured sixteen by twenty feet, being more than two feet greater in each direction than any other process screen then in use. Stretched tightly on a frame, the Saunders screen resembled a large sheet of waterproof canvas. Initial tests proved that brilliancy of image was increased by more than twenty percent while *hot spot* was reduced by more than fifty percent. True white highlights and intense blacks were achieved in rear projection for the first time and the overall tonal range was broadened greatly. Projectors were rebuilt with the usual *Maltese Cross* projection mechanism being replaced with the pilot-pin movement of a production camera, thus insuring a rock-steady picture.

The first scenes to utilise Saunders' screen are those in *Kong* which show Fay Wray in a tree-top (live foreground) being menaced by the tyrannosaurus (projected background) as she watches the battle between the reptile and Kong.

Considerable difficulty was usually encountered in matching the intensity and direction of lighting in the separate elements so they would appear to have been photographed at the same time in a single location. One thorny problem was the necessity of keeping reflected light and spill-light from the foreground from leaking onto the screen, causing flare or washouts.

Mastering the intricacies of the new process required days of shooting,



(ABOVE) Kong being tested with the unfinished model of a hotel, at the start of his rampage through the streets of New York. (BELOW) The human stars of the film, Fay Wray and Bruce Cabot, watch action in the cave.





Kong perches atop miniature of the Empire State Building Tower, as the air attack on him begins. In the rear-projected background, actual Naval aircraft (Curtiss 02C-2 basic training craft) are being flown.

including one non-stop session of twenty-two hours that left everybody exhausted. Fay Wray recalls being sore all over from crouching in the tree-top for long periods of time. The finished shots — which remain in the final cut of *King Kong* — suffer not in the least when compared to process work done years later with vastly improved equipment and know-how.

The success of the Saunders shots led Cooper to suggest that the principle could be adapted to achieve a corollary effect, i.e., the placing of actors into the miniature settings with the prehistoric monsters. The idea was a sound one, although a great deal more complex than it sounds, and O'Brien set himself to the task of developing it as a practical method. Miniature rear projection when perfected proved to be indispensable to the making of the film, being in many instances a more flexible and satisfying technique than the unwieldy stationary mattes by which actors had been placed into the miniature tableaux of *The Lost World*.

The initial problem was to find a suitable material from which to make the miniature transparency screens. The spray-painted cellulose of the big screen was too grainy to be photographed at close range as part of the miniature set-ups. Ground glass, tracing cloth, tracing paper and other materials were tested with similarly unsatisfactory results. The little screens

were eventually made of surgical rubber sheeting — the material then used in the manufacture of surgeons' gloves and baby pants — and stretched tightly on wooden frames. Not only was the material free of grain but *hot-spot* and *fall-off* could be controlled by varying the tension of the screens. The one insoluble problem was that the rubber tended to deteriorate rapidly

The air assault on the beleaguered Kong reaches its deadly climax. In this scene, everything is miniature (including the aircraft) or glass. The city background was painted in three planes to achieve a realistic illusion of depth.



under the heat of studio lights and had to be replaced frequently.

The major problem encountered in miniature projection was the critical matching of scale, textures, lighting and perspective, all of which would be exaggerated mercilessly when projected on theater screens. These considerations required the most intricate calculations in preparing both the full-scale action and the elements of the miniature.

Among the first scenes using miniature projection are those in which Cabot hides from Kong in a shallow cave. The actor's image filmed previously in a matching set of the cave, was rear-projected on a screen set several inches back from the cave opening. The image had to be positioned in this way because light used to illuminate the miniature would wash out the rear-projected image if it struck the screen. Each frame of Cabot was projected and re-photographed as a "still" with each change of Kong's position. Glass painting was used to add surrounding rocks and foliage to the full-scale close views of the cave.

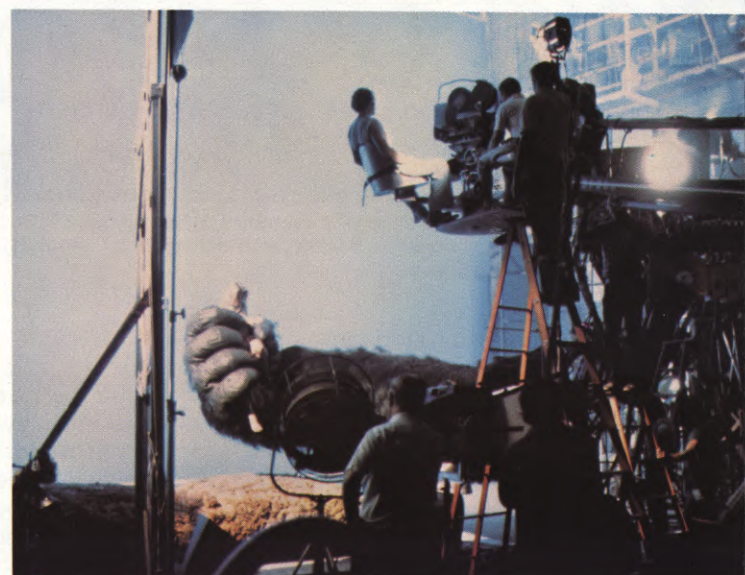
KONG IN FULL SCALE

A gigantic hand of Kong was constructed for close shots in which Kong reaches into the cave and Cabot slashes the huge fingers with his knife. This hand was not articulated, being merely a hastily-made ramrod affair that could be thrust into the scene and withdrawn.

Continued on Page 100



(LEFT) In the MGM Construction Department, where it was built under the supervision of Special Mechanical Effects expert Glen Robinson (from designs by Carlo Rambaldi), one of Kong's huge forearms is given its final touches. (RIGHT) The crew of young technicians who controlled the movements of the giant Kong. They are shown with the banks of levers used to activate the hydraulic system. (BELOW LEFT) Kong's hands are positioned in front of the blue screen for the sequence in which he innocently explores Dwan's anatomy. (RIGHT) Reverse angle of the same action.



Three vessels equipped with specially-designed wind and smoke machines lay a fog bank miles long to simulate that which, in the film story, perpetually shrouds "Skull Island". This maneuver was first carried out off the California coast and later repeated off the island of Kauai in Hawaii, where fast-moving trade winds made it difficult to effect a good match.

Technician Eddie Surkin (who previously worked on the mechanical shark for "JAWS") tunes one of the several miniature helicopters used in the final assault on Kong in the film. Scenes employing these remotely-controlled models tie in perfectly with shots of full-size Huey helicopters also used in the sequence.



42-FOOT SUPERSTAR Continued from Page 51

all, we had one miniature after another to deal with, but they all worked out quite well.

I want to emphasize that ours is never a one-man operation. We've had wonderful aid from many different departments. It's a team effort, and that's what makes it good. I might come up with a brainstorm, but a lot of other people will add their suggestions and help to make it happen.

For the storm sequence in the picture we built two huge hydraulic rockers for the ships, both interior and exterior. These rockers would carry 20 to 30 tons and we built nine rotary dump tanks that would send waves up over them. The storm sequence was shot on Stages 14 and 15 and we had rockers on both stages. The interior set was on stage 15 and we didn't use dump tanks there, although we did have a few splashes of water.

On Stage 14 we built a regular miniature tanker. Stage 14 was originally built for miniatures and the whole thing is covered with a two-to-three-foot tank, so it lent itself well to this operation.

In order to lay a fog bank three or four miles long and 400 feet high, we built five wind machines with little Volkswagen engines that were self-propelled. We built them as fog machines, but also included the capability of handling wind and rain. They were designed so that if we got into trouble with the fog at sea we could wind them up and blow the fog where we needed it. They worked very well, especially when we were over in Hawaii. We used a tremendous amount of oil for the fog, but it gave us what we wanted. Because they were working in rough weather some of the boys on the boats got pretty sick, and once in a while one of the machines would get drowned out. Otherwise, there were no problems.

In the little crater on Stage 15 we staged a fight between Kong and a big snake that came in and attacked him. The snake was approximately 32 feet long and it was modeled by Don Chandler's group. We put a hose inside of it and it traveled on a little track that brought it around into position. We built four different snakes — one to enter the set and three others to perform various actions. At the point where Kong killed the snake, he used another snake with a jaw that he was able to break to show that he had killed it. We broke several of those. Animating a snake is an awfully hard thing to do. It's hard to get it to act like a real snake. When you



One of the extra giant arms built for Kong was used very often in the film, usually to lift the monster's lady love, Dwan, and spirit her away. Hydraulically operated, like the full-size gorilla, it usually required a crew of six to man the controls. The exquisitely articulated hand, human in its capabilities, had a fail-safe stop to safeguard the girl from being crushed.

get into something like that, you need a lot of help from the cameraman — which we got.

For the sequence in which Kong shakes the log and throws everybody into the ravine, we actually made a truss out of aluminum tubing and we put roller bearings on each end, and then hydraulic rams. With this rig we could toss people who were walking across the log off of it, or roll the log up into any position that we wanted. For the full-scale scene we had a log that was probably 60 feet long and spanned the ravine, but we also duplicated it in miniature.

The picture involved a certain amount of fireworks and explosions in

the New York sequence. When Kong comes up out of the East River and blows up the power station, there are a lot of high-voltage lines shorting out. Finally he knocks over the transformers and they blow up. Then he throws a butane tank at the National Guard soldiers who are on top of the building and blows it up. We also used flamethrowers, but we can't take credit for them, because we rented them from 20th Century-Fox.

These were just a few of the special mechanical effects that we had to come up with for "KING KONG", part of a long list. There were so many facets to this show that it was like four shows in one — really unbelievable! ■

On Lot 2 of MGM Studios a complicated maze of levers is moved into place to run the controls that will operate the full-size Kong, as he tears loose from his bonds and rampages through the streets of New York in pursuit of Dwan. It took 20 men to operate these levers.



BEHIND THE SCENES

Continued from Page 79

and women to begin a day's shooting on "KING KONG". The couple tried to ignore the Hollywood intrusion in their paradise, but finally they surrendered to the inevitability of movie making, and by mid-afternoon departed on the brother's helicopter for another part of the island.

In the last week of shooting, the residents of Hanalei, used to movie-making in their backyard — "SOUTH PACIFIC" was shot here in the 1950's — were startled by a man-made fog bank drifting over their backyards one Saturday afternoon. The company had finished with its isolated, remote locations down the Na Pali coast and returned to finish the shooting, using six fog-making machines, which put down a very realistic dense fog in minutes.

THE GREAT WALL OF KONG

There has been nothing quite like The Wall on a Hollywood backlot since the night Atlanta was burnt down for "GONE WITH THE WIND", and it took the biggest monster of them all, King Kong, to get it built.

The Wall is truly a formidable structure, easily the single most impressive man-made set in Dino De Laurentiis' multi-million-dollar contemporary version of "KING KONG". It is 47 feet high, 500 feet wide, contains two long, winding ramps to its top where there is a parapet wide enough to hold 300 extras carrying torches and chanting, "Kong! Kong!"

No less a movie magician than Ingmar Bergman paid a compliment to the majestic set, saying it reminded him what Hollywood must have been like in its glorious days of movie-making. On his visit to The Wall, Bergman stayed longer than he had anticipated, becoming intrigued by the extras dancing themselves into a frenzy before racing barefooted up the ramps to the parapet for the offering of Dwan (Jessica Lange) to Kong.

Work began on The Wall February 1, 1976, when two hundred men arrived on the backlot with cranes, shovels and tractors to clear the site near Esther Williams' dry swimming pool and the plantation house from "RAINTREE COUNTY". Several hardware stores were cleared out to supply the needs of The Wall.

Going into it were 5,500 pounds of nails, 8,157 eucalyptus poles, 126,000 yards of grapevine to hold the poles together, tons of concrete and cement, 150 sheets of preheated plastic, 1,350 gallons of vinyl paint, and 50,000 staples.



As Kong lies dead, having toppled from one of the twin towers in New York's World Trade Center, the scavenging press photographers clamber over his corpse to take their pictures. A flexible duplicate of the 42-foot mechanized Plaza Kong was trucked to New York in several pieces and assembled in the Trade Center Plaza for filming of the sequence, with 30,000 volunteer extras looking on.

Working in two shifts, the labor force completed The Wall in eight weeks at a cost in manpower and materials of \$800,000.

At first it was planned to construct a stone wall. But director John Guillermin, leafing through a photographic book of primitive New Guinea architecture, "*The Gardens of War*", was fascinated by towers built by the natives from which to observe the approach of the enemy. In these photographs there was always a haze permeating the air which was reproduced during the shooting at The Wall by smoke pots.

Though Kong's island is never specifically labeled, in its village life, native costumes and architecture it most resembles Borneo.

The basic design of The Wall was rendered by Dale Hennesy, production designer who won an Academy Award for his work on "FANTASTIC VOYAGE". From the start, he realized that if the whole structure was to be

made of wood, the cost would triple and it would take twice as long to build it. He came up with the idea of erecting a wall of wood and sheets of preheated plastic which when painted looked like the eucalyptus trees.

Scenes at The Wall were shot throughout late April into May, 1976, many of them at night when it was still chilly. The extras, recruited from social clubs, acting troupes, church groups and civic organizations throughout Los Angeles, had to wear the briefest of costumes, most often straw sewed together into a makeshift loin cloth, which offered little protection to the night air. After each shot, the extras would huddle under blankets around the open fires to stay warm.

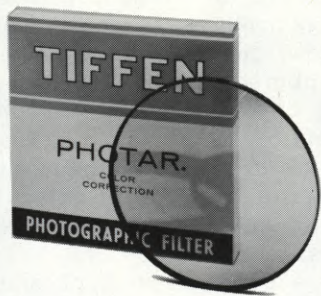
THE KING IN NEW YORK

The 30,000 persons who took up every inch of cement in the plaza of the World Trade Center on a hot night in June proved that New Yorkers are still

Continued on Page 114

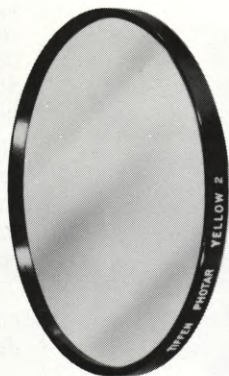
TIFFEN

THE WORLD'S FINEST PHOTOGRAPHIC FILTERS.



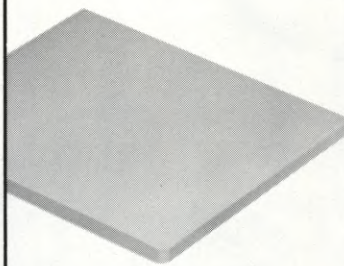
4 1/2" DIAMETER ACCESSORIES

Tiffen 4 1/2" filters are engineered to meet the exacting standards of large diameter professional lenses. The 4 1/2" filter will fit numerous lenses, using Tiffen adapter rings, eliminating the need for various costly special-size filters. Available in all standard colors, combination colors, neutral densities, rotating polarizer; and diopters 1/2, 1, 2, and 3.



138mm FILTERS

for Angenieux 20-120 (6x20) F2.6 lens. Available in all standard colors, combination colors and neutral densities. Close-up lenses in +1/2, 1, 2, 3.



SQUARE FILTERS

Tiffen Photar® Filters in all colors are available for Tiffen and other square filter holders in sizes from 2x2-inches up to 15x15-inches.



RECTANGULAR FILTERS

for Arri 16 matte box. Available in all colors and neutral densities 0.1-1.0.

TIFFEN

71 Jane Street, Roslyn Heights, N.Y. 11577
(516) 621-2700 Telex 96-7748

SUSTAINING
SMPTE
MEMBER

Member Professional
Motion Picture
Equipment Association
pmpca

**HOWARD A.
ANDERSON CO.**

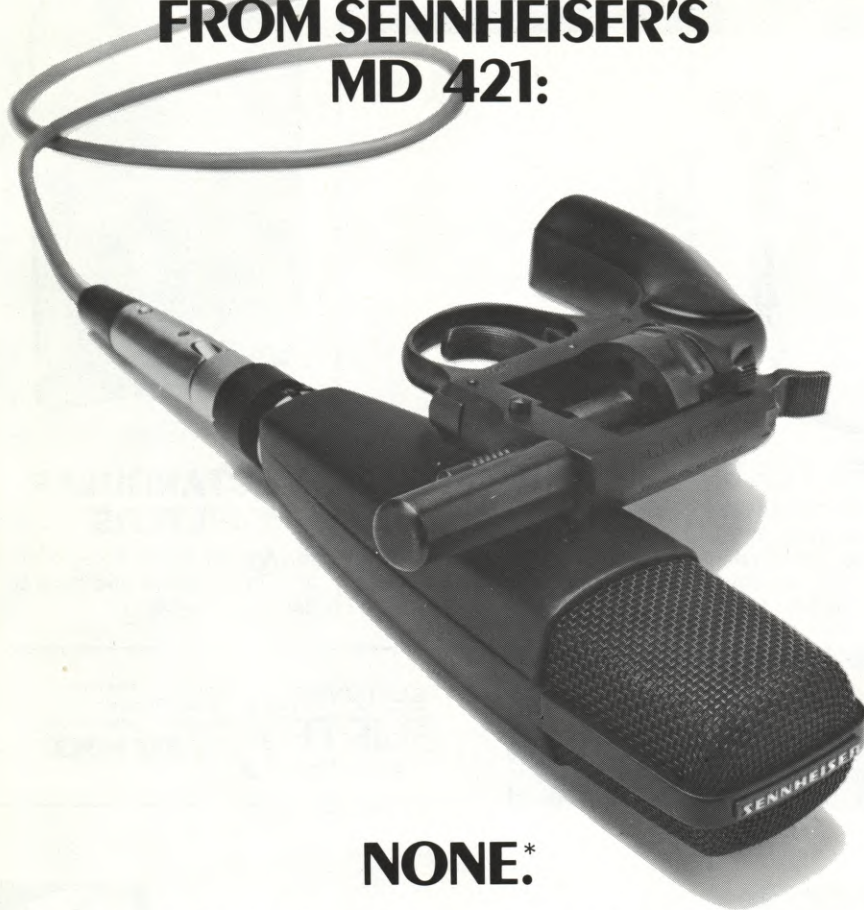


CREATORS OF DISTINCTIVE IDEAS
AND DESIGNS FOR
SPECIAL PHOTOGRAPHIC EFFECTS FOR
MOTION PICTURES AND TELEVISION

TITLES · GRAPHICS · MINIATURES
BLUE BACKING · INSERTS
MATTE PAINTINGS · OPTICALS
SPECIAL UNIT PHOTOGRAPHY

Main Office: PARAMOUNT PICTURES
5451 Marathon Street, Hollywood, Calif. 90038
(213) 463-0100

AND NOW, A WORD ABOUT OVERLOAD, FROM SENNHEISER'S MD 421:



NONE.*

A lot of engineers are worried about overload these days. And no wonder: Rock groups. Country groups. Jetports. And other high program and ambient sources make it more necessary than ever for microphones to be overload-free as well as accurate.

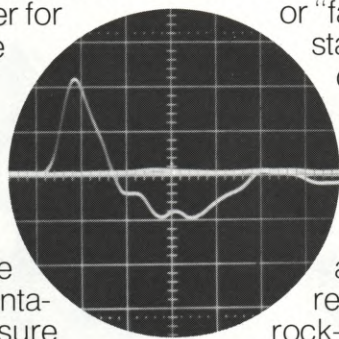
Like our tough MD 421 cardioid dynamic.

In this test with a starter's pistol, we measured an instantaneous sound-pressure level of some 175 dB—well beyond what any musical instrument or voice can pro-

duce—while the oscillogram measured no clipping or ringing.

Whether you need a microphone to capture transient sound like this pistol shot, or "face the music" on stage at 130+ dB in a disco or recording session, consider our MD 421. You'll discover its precise cardioid directionality, rugged design and wide, smooth response are ideal for rock-concert, recording and broadcast applications.

The price won't overload you either.



* Outdoor test with Tektronix scope, set for 10V/division vertical, 01. μ sec/div. horizontal: .22 cal. starter's pistol mounted 15 cm from MD 421 measured pressure of 111,000 dynes/cm² (175 dB SPL). Smooth, rounded scope trace indicates total lack of distortion.

SENNHEISER
ELECTRONIC CORPORATION
10 West 37th Street, New York 10018 (212) 239-0190
Manufacturing Plant: Bissendorf/Hannover, West Germany

CINEMA WORKSHOP Continued from Page 16

The cassette recorder uses a very narrow track width (about 1/32") and an extremely slow tape-speed of only 1-7/8 ips (as opposed to professional speeds of 7½, 15, and 30 ips). These two factors contribute to an extremely poor signal/noise ratio, usually about 10 dB poorer than a reel-to-reel machine of equal quality. The inclusion of Dolby B circuitry in essence restores this 10 dB of dynamic range to the cassette machine, making it competitive with the best reel-to-reel recorders.

Now we consider an application close to home — the newly available dbx units for the Nagras. Unlike the recording studio, the Nagra soundtrack is not going to be one of 16 or 32 tracks involved in a massive mixdown. Nor does the Nagra suffer from an inherently poor signal-to-noise ratio like the cassette deck. (On the contrary, the Nagra exhibits one of the finest signal-to-noise ratios ever.)

The reason for using dbx with a Nagra is somewhat different from both those cases. The basic name of the game here is increased dynamic range; however, this simple fact allows an entirely new approach and philosophy to location sound recording with a Nagra. This discussion of noise reduction will be continued next month. ■

American Cinematographer

P.O. Box 2230
Hollywood, CA 90028



Please enter my subscription
for 1 year—

\$9.00 U.S.

\$10.00 Foreign

and send me a
free copy of the
Four-In-One Reprint.
I am enclosing
my remittance.

(offer available only
with remittance)

Name _____

Address _____

City _____ State _____

Zip _____

Why

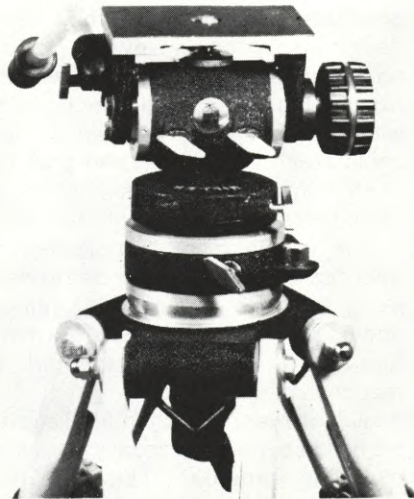
THE Miller "Fluid Action" **PROFESSIONAL HEAD** is the World's Finest!

*MILLER Equipment is precision-built of highest quality materials and every replacement part is available.

*MILLER Equipment is used throughout the world by leading photographers film and television studio giants.

*MILLER Equipment lasts indefinitely if properly maintained.

*MILLER Heads are being used with complete satisfaction from the freezing Antarctic to the excessive heat and humidity of the desert and tropics.



FEATURES INCLUDE:

- *Full 360° Horizontal Pan.
- *Slip control for filming of fast moving objects or events.
- *90° Tilt control up or down.
- *Positive Tilt Lock and variable tension controls for camera support up to 40 lbs.
- *There is a MILLER Tripod suitable for every Head.
- *Other MILLER Fluid Heads are available for cameras from 5 lbs. up to 200 lbs.

The MILLER world famous velvet like movement operates on a semi-hydraulic principle which is patented throughout the world, and should not be confused with any friction-type movement.



Leos **CAMERA SUPPLY LTD.**

CANADIAN DISTRIBUTOR



(PATENTED)

1055 GRANVILLE STREET VANCOUVER 2, B.C. TELEPHONE: (604) 685-5331

Affordable class.

This new flat bed editing table for 16 and 35mm films is a masterpiece of design, efficiency and precision. One European filmmaker commented: "A Cinemonta is a Cinemonta and there is nothing else like it in the world."

Cinemonta is available in 2, 4, 6 and 8 plate models; also 2 picture, 2 sound and 3 picture, 1 sound.

Cinemonta.

Features:

- Specially Designed distortion free optical system.
- Patented grainless helio screen 9"x12" with a high contrast transfer, permitting viewing at wide angles. Very important when several people want to view the film at the same time.
- New film protecting transport system.
- 16MM Film transport with 40-Tooth Sprocket and 7 frame wrap-round.
- Can accommodate 2000 feet plates.
- Feet and frames/minute/second counter.
- Variable speed control lever switch from "0" to 100 frames/sec. with pre-determined positions for stop and synchronous speed.

Write or call for more information
11810 Charen Lane
Potomac, Maryland 20854
(301) 299-7259
West Coast (213) 931-6151 Telex 248373

- Adjustment for sound track synchronization.
 - Table can easily be moved on rollers. Compact construction.
 - Table can be rotated to a vertical position for easy servicing and mobility.
 - Synchronous Points on left and right side of table.
 - Electronically controlled motor system.
- Motorspeed is

synchronous with line frequency for 24 (25) frames/second to guarantee optimum speed stability, enabling one to make a sound mix.

- Solid State High Quality 10 watts amplifier on plug-in printed circuit boards.

Optional Equipment:

- Selsyn connection system.
- Foot pedal for 24 (25)

- frames/seconds and fast transport in both directions.
- Hand operated sound head.
- High speed film winding system.
- Electronic counting unit.
- Work Lamp.

Purchase, rent service.

ALSO AVAILABLE: Acmade
Pic-Sync · Darkroom goggles
· 16mm recording equipment



Manufactured by Old Delft Optical Industries, The Netherlands, and is sold exclusively in the USA by:

KLM
Associates, Inc.

PRODUCTION DESIGN

Continued from Page 49

complete architectural scale drawings of the World Trade Center and, as a result, we were able to duplicate in precise miniature detail all the elements that were required in the picture — the Plaza around which the towers are located, middle sections of the tower which Kong climbs, and both the South Tower and the North Tower, from which Kong falls.

We had a sudden change in schedule on the New York location, so, on very short notice, the wonderful crew that works in the staff shop, the plaster shop and the mechanical special effects shop had to put together a mockup of the 42-foot Kong. He was an exact copy of our full-size mechanical Kong, but much more flexible, because we had to be able to twist his legs and arms and put him in the position of an ape who had just fallen 1,300 feet into a plaza. We then brought in 300 square yards of plaster imitation terrazzo, which represented the surface of the Plaza, all broken up from the impact of Kong hitting it. We stretched Kong out and twisted him into the position the director required. Then we began to put the bullet holes into him and the blood and ended up with what looked like a very believable 42-foot dead ape lying at the bottom of the World Trade Center. It was lots of fun to work on — crazy time!

In New York there were several other sequences that had their own special requirements. For example, after Kong

has broken loose, the boy and girl are running from him and they decide to drop in at a bar because she wants a drink. We found a real bar in New York that would have been ideal, but the director's requirements were such that Kong had to be able to look in an upper floor window and reach in and grab the girl. This meant that we had to redesign the bar on an elevated platform on the sound stage in such a way that Kong's big head could look in the window and the big mechanical hand could reach into the set and grab her. We had that kind of problem all the way through the picture.

One of the more complicated sequences to design was the one in which Kong destroys the elevated railroad and rips the roof off of one of the miniature trains looking for the girl. He reaches in and grabs a girl that he thinks is Dwan, but when he discovers his mistake, he just casually tosses her over his shoulder. This sequence required us to build a full-size portion of an elevated train in New York and have the giant hand (on a crane) come in and pick up the girl. Then we cut to the miniature set for the part where he tosses her over his shoulder. This sort of thing was a constant requirement all through the filming — having to relate the movement of the full-size Kong to that of the miniature Kong, with the sets exactly duplicated to scale. I've never before been on a picture where I was so totally involved in the relationships of full-size and miniature sets. It's really been a marvelous experience.

For our opening sequence we found

a marvelous ship that's used by the Scripps Institution of Oceanography, the *Melville*, and we had to convert it to look like our oil survey ship, the *Petrox Explorer* — but without actually changing the structure of the original ship. We did it in a very clever way — not changing a thing on the ship, but building false staterooms and cabins and messrooms. There were no miniatures involved here. It comes through on the screen as a real ship going to a real island.

As far as the island was concerned, we did most of that shooting on Kauai, with real people coming through real fog and landing on a real beach. But back at the studio, based on what the island of Kauai looked like, we duplicated the conical peaks of the real terrain and made a little crater for Kong to live in. I'd had a marvelous survey with John Guillermin, during which we flew around the island and landed in a real crater. I photographed it and duplicated it as realistically as possible in the studio. The point is that we didn't try to create fantasy locales. Instead we found real places and then came back and duplicated them. We tried to do them straight — for real.

This points up a basic difference between a film like "KING KONG" and one like "LOGAN'S RUN", which was my previous assignment. In "LOGAN'S RUN" we were strictly fantasizing, pushing out into the future, using materials which hopefully will be used some day — plastics and other elements with a sleek, smart look. But in "KING KONG" the emphasis was on present-day realism. That was necessary in order to make the audience believe what was happening.

Considering the vast scope of "KING KONG", there were not many matte painting shots — about 20 in the whole picture, I would say, but in the conception of these we had to work very closely with our special effects expert Frank Van Der Veer. There were about seven mattes used in the sequence where Kong tosses everybody off of the log and into the ravine. These were used mainly to establish the depth of the chasm. About nine matte paintings were used for the sequence aboard the supertanker and a few more in other sequences.

Much of the real magic in "KING KONG" was created by Carlo Rambaldi and I must say that I'm in awe of him because of the marvelous mechanisms he incorporated into his masks to give Kong a fantastic range of expressions. Those masks developed by Carlo and Mario Chiari were just incredible. I think they did a hell of a job — really beautiful work! ■

A suitable lair for the mysterious Kong is this crater, complete with small backyard-size volcano, built on the sound stage at MGM Studios. Although the set has been hyped with smoke and mist, the basic terrain is a close duplication of the jagged landscapes found on the remote north area of the island of Kauai, where the film located.



BUT ON THE aFERman[®] SELLS

aFERman[®] sells professional motion picture equipment, all of the brand names that working filmfolk know and rely on.

That includes the big items like cameras, recorders, lights and tripods as well as such nitty stuff as splicing tape, gels, and filters.

On the one hand, aFERman[®] SELLS!



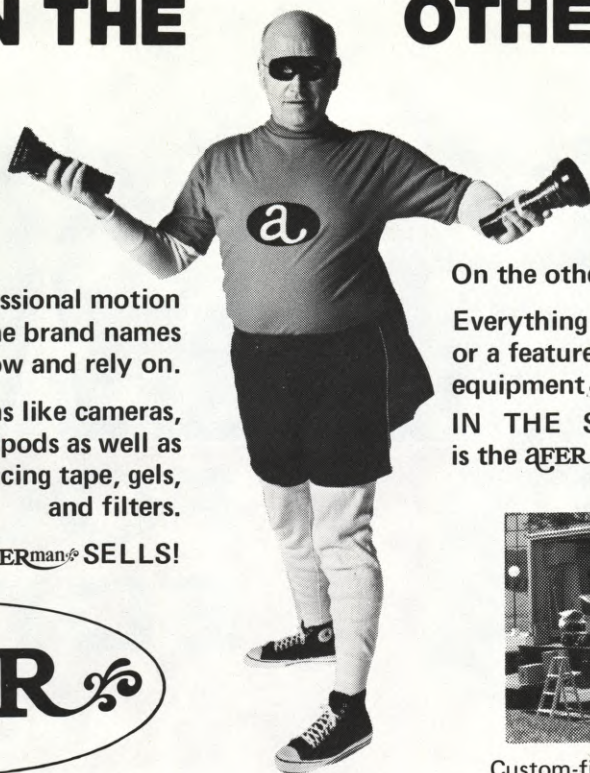
Atlanta Film Equipment Rentals[®]
1848 Briarwood Rd., NE, Atlanta, Ga. 30329
404/325-3676 or 633-4101

OTHER HAND, aFERman[®] RENTS

On the other hand, aFERman[®] RENTS.

Everything for TV spots, documentaries, or a feature. Low package rates on top equipment.

IN THE SOUTH the best mobile unit is the aFER[®] **CineMoHertz**



Custom-fitted Hertz vehicle filled with full production gear, spot/documentary version or grip only. Your production budget goes for the contents, not the truck.

Specializing in meeting impossible demands.



LIGHTING, GRIP EQUIPMENT,
LOCATION VANS, PROPS, GENERATORS,
RENTALS/SALES/SERVICE

Charles Ross INC.

333 WEST 52nd ST., N.Y., N.Y. 10019 (212) CI 6-5470

For more than fifty years Charles Ross has made the impossible possible for the thousands of motion picture producers who demand the finest and most modern lighting equipment. We are the East's only specialist. We have been around the longest. We have the largest lighting inventory. We even supply lighting suppliers.

For a replacement bulb or lighting for a complete motion picture or television set, call Ross first!

SOLE DISTRIBUTOR OF MOLE-RICHARDSON COMPANY PRODUCTS IN GREATER NEW YORK

Send for a rental rate schedule!



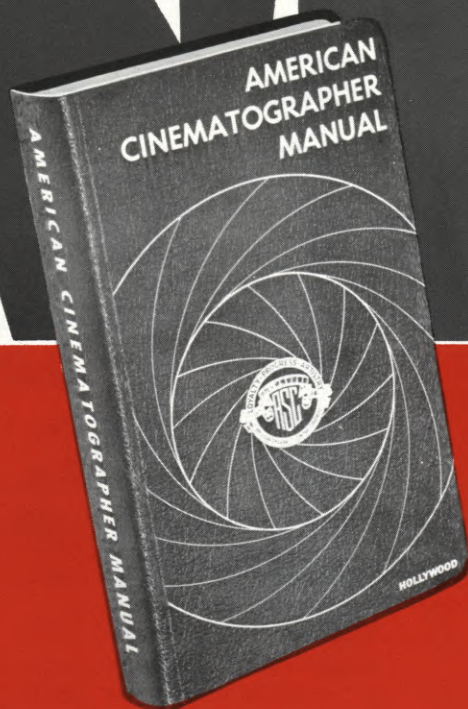
Charles Ross INC.
333 West 52nd Street
New York, N.Y. 10019



Gentlemen: Please send me a free copy of your rental rates.

NAME _____
FIRM _____
STREET _____
CITY _____ STATE _____ ZIP _____

NEW!



FOURTH EDITION

AMERICAN CINEMATOGRAPHER MANUAL

COMPILED AND EDITED BY
TWO VETERAN CINEMATOGRAPHERS

CHARLES G. CLARKE, A.S.C.
and
WALTER STRENGE, A.S.C.

MOST COMPREHENSIVE COMPILATION OF CINEMATOGRAPHIC DATA EVER PUBLISHED !

Completely updated Filter, Lighting and Lens sections. Data on most recent camera developments. Complete shooting data for Theatrical, Non-theatrical and Television cinematographers filming 16mm, 35mm or 65mm anamorphic or spherical motion pictures in any aspect ratio, in color or black and white, silent or sync-sound, in the studio or on location.

An Official Publication of the
**AMERICAN SOCIETY OF
CINEMATOGRAPHERS**

Dealers are invited to write for
quantity discounts.

This easy-to-carry, pocket-size, concise, book contains practical, informative text, tables, charts, diagrams, drawings and listings of all the latest production equipment and filming techniques in use today!

Key word printed on the edge of every right-hand page provides INSTANT INDEX for quickly locating desired data!

THE AMERICAN CINEMATOGRAPHER MANUAL
P.O. BOX 2230
HOLLYWOOD, CALIFORNIA 90028
4TH EDITION

Please send _____ copies of the AMERICAN CINEMATOGRAPHER MANUAL @ 18.50 each, postpaid. No C.O.D.'s

NAME.....

STREET.....

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

California residents please remit 6% Sales Tax (\$1.13 per Manual). Foreign Buyers please pay by International Money Order or U. S. Funds.

BLUE-SCREEN TECHNIQUES

Continued from Page 74

him. He would say: "If we can get a better picture, I don't mind spending the money." That attitude on his part did a lot to keep us going when things reached the impossible stage. What happened was that the difficult, after a while, became quite ordinary — and the impossible became possible. What transpired with the cast and crew was really phenomenal. Here you had a group of people who had worked together on a most demanding project for a year. By the time we reached the end of the picture, instead of them being at each other's throats, as you might expect, all of them had a tremendous respect for each other.

In order to meet the deadline we often worked day and night, seven days a week. We had a wonderful crew and they offered tremendous cooperation under the most difficult circumstances. The editing people were just marvelous, so helpful. If you found yourself in a bind, you would say: "This is my problem; how can we solve it?" And they would say: "This part of the shot is very good, but we have a little rough spot here. Let me see if I can re-cut it. Let's see if we can make it work." They were always so cooperative.

John Guillermin was cooperative, too, but that didn't keep him from being the most exacting kind of perfectionist. He was very adamant about what he wanted, and if something wasn't right you'd have to do it again, and if it still wasn't right, you'd have to do it a second time. If that try wasn't right, he'd keep at you until he got what he wanted.

As time went by on the project, John Guillermin, Dick Kline and I became welded into a very close team. We depended upon each other to help solve all the problems that came up. We worked very closely on every effect that was shot. Everything was planned out ahead of time. John had the whole picture storyboarded, so that everyone would have the same idea of exactly what was needed.

"KING KONG" was certainly the most difficult and demanding picture that I've ever been involved with, but it was a marvelous experience because of the really great group of people that worked on it. ■

MOVING?

When changing your address, please notify us at least four weeks in advance. BE SURE to give your FORMER address as well as your NEW ADDRESS and ZIP CODE.

AMERICAN CINEMATOGRAPHER

If you're not editing with Showchron, you're just scratching the surface.



Victor Duncan agrees.

Reliable, rugged, and gentle to film.

The American made Showchron editing console gives you everything in a compact, easily moved unit.

When it comes to reliability, Showchron editors prove their mettle. Simple relays and electromechanical functions replace the hidden "mumbo-jumbo" of circuit cards. In the rare instance of an operational glitch, the problem can be readily solved by non-expert personnel.

Film handling characteristics are the next thing to "kid gloves." Showchron editors do not "eat" film nor do they have a tendency to "leave their mark." Sprockets and plates are designed so that only the film sprocket holes and edges come into contact with machinery. Torque motors provide tight winding, but never "cinching."

Let the people at Victor Duncan, Inc. show you all the features of the Showchron editing system. Such features as single integrated master control; selective advance/retard; manual inching knob for frame to frame viewing; continuous digital readout of both feet/frames and hours/minutes/seconds and electromechanical coupling/decoupling of tracks are all standard on the Showchron.

With a Showchron Film Editing console, the possibilities are endless, but scratching your film isn't one of them. And Victor Duncan knows it.

the check and double check people



VICTOR DUNCAN, INC.

Rentals, Sales, Service

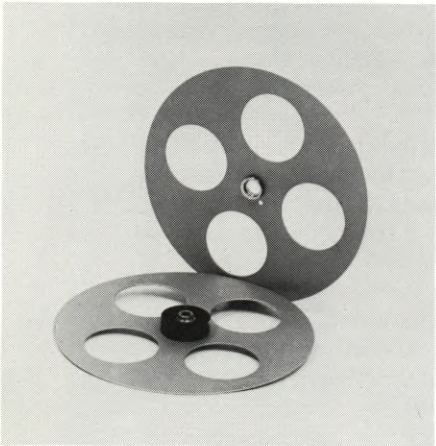
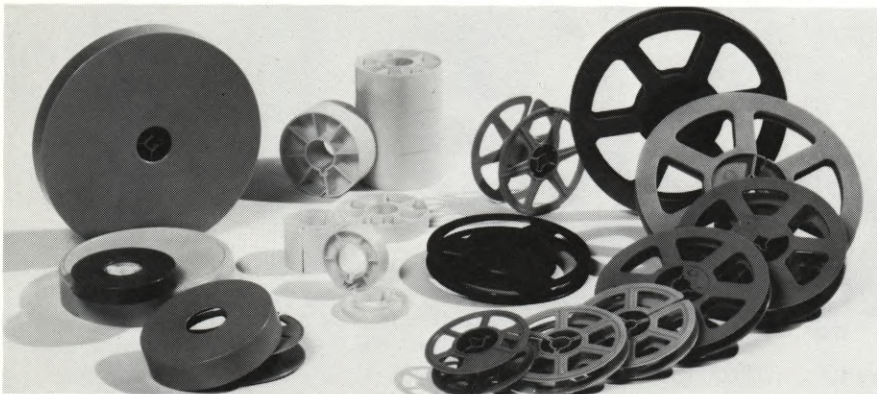
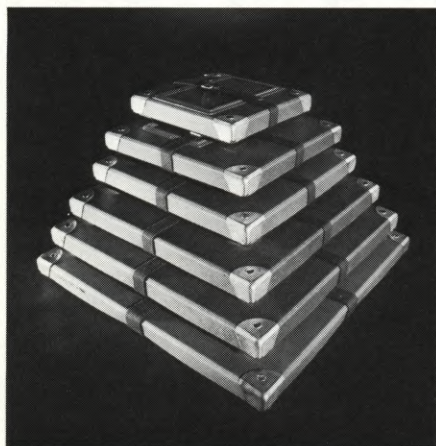
200 East Ontario, Chicago, Illinois 60611 — (312) 321-9406

2659 Fondren, Dallas, Texas 75206 — (214) 369-1165

11043 Gratiot, Detroit, Michigan 48213 — (313) 371-4920

REEL PERFECTION

is a GOLDBERG tradition!



Specify GOLDBERG for all your reel needs!

- 8mm, Super 8mm, 16mm Reels
- Shipping cases in fibre & plastic in steel, plastic & aluminum, 50' to 2000'
- Split Reels in steel & aluminum
- 8mm & 16mm cans in steel & plastic
- 35mm, 70mm Reels in steel & aluminum

If it's special, we can make it!



GOLDBERG BROTHERS

P.O. Box 5345, T.A. - Denver, Colorado 80217

PHOTOGRAPHING "KING KONG"

Continued from Page 70

stage. The problem was solved by incorporating a set of teasers the color of the sky (if it called for a sky) or whatever the set demanded, and strategically placing them in each shot close to the actor, so that they would conceal what the camera wasn't supposed to see.

It wouldn't be incorrect to say that practically every technique known to the industry (as well as every piece of equipment) was utilized during the 10 months of shooting on "KING KONG". No amount of money or effort was spared to create an essential effect that might appear on the screen for only a short time. For example, to stage a storm sequence that makes a story point but lasts only 15 seconds in the final cut, an enormous tank set was built on Stage 14 at MGM. Included was a hydraulic rocker system supporting the exterior of a ship, plus six huge dump tanks built from scratch to explode thousands of gallons of water onto the ship on cue. Lightning machines were used, as well as a Chapman crane built on the bridge to extend out toward the ship. It took four months to build and assemble the elements to film this very short but exciting storm sequence.

Another unusual set was constructed at MGM, filling Stage 29 from wall to wall. It consisted of a ravine faced with enormous rocks and a drop of, presumably, thousands of feet (realistically achieved through blue-screen matting). This vast set presented the most difficult lighting challenge of the entire film. I was able to light it by stringing a series of white silk parachutes along the ceiling of the stage and bouncing light into the parachutes to simulate the effect of a gray overcast day, as called for in the script. In reality, illuminating the set in this way was easier than erecting scaffolding all around the stage and lighting it with hard light from these scaffolds in the classic fashion.

A different, but no less difficult lighting challenge was presented by what we called the "glade" sequence. A complete tropical jungle was actually built on Stage 26 — again, from wall to wall — and an exact miniaturized duplication, at 1/7th the size, was built on another stage. This is where "little King Kong" (Rick Baker in the suit) worked, while on Stage 26 we utilized the huge mechanical hands that had been built for Kong. A basic problem was the matching of lighting between the two sets. First of all, the sequence was characterized as early dawn, with a

very golden look to it. On the life-size set I had established coming through the trees a shaft of light perhaps 20 feet wide. In matching this same shaft of light on the miniaturized set I had to scale it down to 1/7th the size — or approximately three feet in diameter. This is an example of the meticulous efforts made to match the lighting of the miniaturized set with that of the life-size set, so that when scenes filmed on each one were cut together the audience would believe it was one and the same setting.

Utilizing these two matching sets, and "marrying" the respective images (by blue-screen methods) into a composite scene, we were able to get the effect of Kong scooping Dwan up in his huge paw and holding her in front of his face. By using the video system previously described to "preview" the composite, the two images could be lined up precisely in size and position relationship to each other.

We broke many rules in effecting the trick photography for "KING KONG". For example, because of the danger of "fringing", blond hair (Jessica Lange, Jeff Bridges) and furry animals (King Kong) have always been considered taboo for blue-screen work and are usually avoided at all times, but for us they were the norm. In fact, just about every composite scene involved one or the other or both. However, our effects cameraman, Harold Wellman, ASC, and opticals expert, Frank Van Der Veer, were able to use special gels to eliminate the problem. First of all, on the blue backing, Lee blue filters were utilized in conjunction with the arcs to produce a much richer, purer cobalt blue, and this helped Frank Van Der Veer with his separations. Secondly, for the foreground action, filmed in front of the blue backing, we utilized double 54 gels, which to the eye looked very yellow, but Van Der Veer was able to adjust this by shifting his color pack (thereby restoring the normal values) when he "married" the foreground to the background.

The additional yellow in the foreground helped prevent fringing and also helped separate such elements as smoke, mist and water, which are also considered taboo for blue-screen work. For example, the sequence where Kong holds Dwan under the waterfall was done partially in front of the blue backing, but the effect was achieved brilliantly by Frank Van Der Veer because of the strong separations he was able to get through the use of this technique.

Considerable patience was needed all through the filming of "KING KONG" because I can honestly say that there

SHERWOOD OAKS EXPERIMENTAL COLLEGE

offers an informal environment for those who wish to study film making as taught by the most knowledgeable professional writers, directors and producers in the industry.

Workshops in:

8mm & 16mm
Cinematography

16mm & 35mm
Editing

Videotape

Directing

Screenwriting



SHERWOOD OAKS EXPERIMENTAL COLLEGE

6353 Hollywood Boulevard
Hollywood, California 90028
(213) 462-0669

A Non-Profit Educational Organization

**Your equipment.
It's only as good
as the lab
in back
of it.**



You invest the most you can afford in your equipment. After all, it's what you make your living with. For the same reason, you spend precious time selecting a lab that is of the same caliber as your equipment.

Photo Processors follows this same philosophy. We've invested in the finest color equipment available. Our team of color specialists is among the best in the country. They are here to assure you that you will receive the best end-product possible. Send your next job to us and let us prove it. We can back you up.



photo processors inc.

Box 2116A, Austin, Texas 78767
AC 512-472-6926

COLUMBIA
COLLEGE

COLUMBIA
COLLEGE

Approved for Veterans

A study of the Motion Picture and Television Arts and Sciences within a degree program, taught by a distinguished faculty.

Now Registering. Write for a descriptive brochure.

COLUMBIA COLLEGE

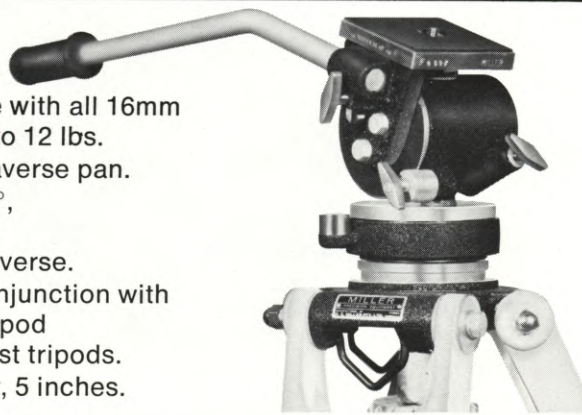
925 No. La Brea Ave.
Hollywood, Calif. 90038
851-0550

TWO FOR THE SHOW! from MILLER

THE ORIGINAL FLUID HEADS
PREFERRED BY PROFESSIONALS

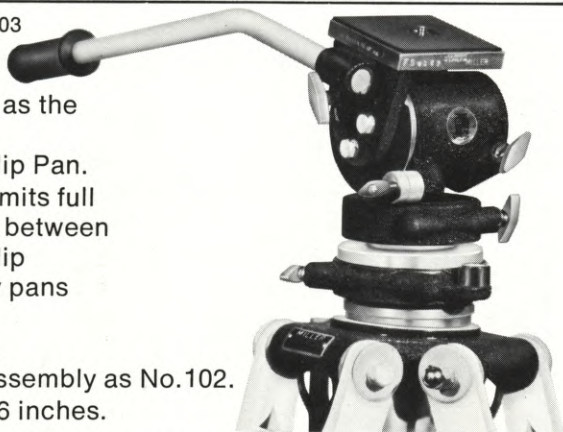
Miller "F", No. 102

- Medium weight for use with all 16mm cameras weighing up to 12 lbs.
- Full 360° horizontal traverse pan.
- Full fluid action tilt, 90°, in either direction with positive lock in any traverse.
- Made to be used in conjunction with Miller Ball Leveling Tripod but can be fitted to most tripods.
- Weight, 5 lbs. — Height, 5 inches.



Miller "F" with Slip Pan, No. 103

- The No. 103 is the same as the No. 102 except for the addition of the unique Slip Pan.
- The unique Slip Pan permits full 360° horizontal traverse between full fluid drag and free slip which allows breakaway pans for following fast action such as sporting events.
- Same positive tilt lock assembly as No. 102.
- Weight, 6 lbs. — Height, 6 inches.



U.S.A. PATENT NO's 3,712,571 and 3,592,429. Others Pending



MILLER PROFESSIONAL EQUIPMENT
6500 Santa Monica Blvd. / Hollywood, Ca 90038
Phone: (213) 466-5105

wasn't an easy shot in the whole picture. It just seemed that each scene involved some unique element that required the ultimate in patience. For example, the laying of mist or fog in the studio called for refrigerating the stage; the laying of miles of fog along the coast meant fighting the wind and elements. In doing the traveling matte work, we had as many as 20 arcs lighting the enormous blue backing (100 feet wide, 80 feet high), and anyone who has used arcs knows that as soon as you get one set, the next one has to be trimmed. Coordinating the effort to get all 20 arcs burning at once was not an easy task. Meanwhile, Rick Baker would be roasting in the Kong suit while we were trimming arcs or laying mist or whatever, and we had to accommodate him. Otherwise we would have had a two or three-hour delay while he recovered from heat prostration.

Everyone who has seen the original "KING KONG" knows that Kong meets his demise in New York atop the Empire State Building. We chose the twin towers of the World Trade Center because these made a more dramatic setting. We filmed in New York for two weeks—one week at the twin towers and another week at the Astoria station of the elevated railway. In the latter sequence, Kong grabs one of the trains and tosses it to the pavement 40 feet below. We filmed the aftermath of this accident in New York and shot the remainder of the sequence in miniature several weeks later on Stage 25 at MGM. Again, the miniature set was an exact duplicate of the Astoria station to 1/7th scale, with the miniature Kong doing his thing. It was a very interesting sequence, because we had to recreate the explosions, but in miniature, with the explosions, flame and smoke scaled down to size. In the miniaturized apartment buildings we had small figures (five inches high) who would appear at the windows, look out, see Kong and withdraw rapidly. These little figures added vitality and realism to the miniaturized set.

The filming at the twin towers was an unusual experience. Needless to say, the height of the buildings was quite forbidding. One of the highlights of the sequence was a shot made from the very top of the towers shooting straight down at the Plaza below. Accomplishing this shot meant attaching the camera to the end of a six-foot plank in order to project it out from the building. The plank was three feet wide. It wasn't a question of safety, because I wore a harness and had a very strong cable attached to me, but just crawling out there and lighting the sequence from a quarter-of-a-mile up was a thrill.

I doubt if a parallel will ever be built that high again. I shared that precarious position with John Guillermin, Al Bettcher (the camera operator), and Bob Edesa (the assistant cameraman). We each had our moments out there doing our particular portion of the filming, and it was a thrill for all of us.

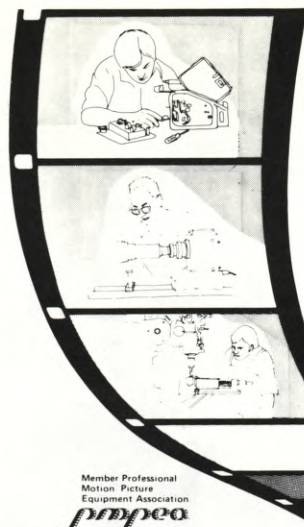
That particular shot presented a rather difficult lighting problem, not only because there was absolutely no place to hide lamps, but because of the distance from the lens to the subject a quarter-of-a-mile below. What would read in footcandles would not be truly what the exposure was, so judgment had to be used to compensate for the distance and estimate what the exposure *might be*. My gaffer, Ed Carlin, was down below and I communicated with him by radio. We spread the light at 50 footcandles — yet, from that distance, it looked more like 5 footcandles. However, through the means of forced development, we were able to shoot good plates for the sequence in which Kong scales the tower — the main action of which was actually shot in conjunction with miniatures back on the stage at MGM.

The filming attracted a crowd of more than 30,000 people massed in the Plaza and the problem of photographing them had to do with the placement of the lights. The lamps had to be placed very far back on the periphery of the crowd because of the enormous area that was encompassed by the lens. Another problem was the tremendous amount of glass in the lower floors of those towers. This called for goboing on a vast scale, but it was difficult to do any sort of goboing because of the cross-wind that was blowing constantly from the bay.

Back at the studio we built a miniature of the twin towers and Plaza and meticulously placed our miniature Kong in the same position as the large Kong filmed in New York. We shot our closeups in this way and, again, Carlo Rambaldi produced an incredible mask which Rick Baker wore to show the pain, sorrow and bewilderment on the face of the dying Kong. It simply tears your heart out — and I'm sure it will bring tears to the eyes of the audiences.

The filming of "KING KONG" presented just about as unique a challenge as any Director of Photography could ever have. It posed many difficult problems, but fortunately our director, John Guillermin, was a gifted man with the tremendous tenacity it took to make those difficult things possible.

At any rate, it was an experience I wouldn't have wanted to miss. ■



Member Professional
Motion Picture
Equipment Association
pmpea

We also feature:

- Super Speed Service for NEWS Operations.
- SALES OF ALL MAJOR LINES OF MOTION PICTURE EQUIPMENT.
- Competitive Prices.
- Complete Rental Department for 16mm Cameras; Nagras; Lights; Lenses and Necessary Accessories.

Gordon Yoder, Inc.
FORMERLY
PROFESSIONAL CINE PRODUCTS, INC.

We Want YOUR Service Work

SERVICE IN OUR SHOP

- ANGENIEUX LENSES. Zoom and fixed focal length.
- ANGENIEUX ELECTRONIC CAMERA LENSES.
- ARRIFLEX CAMERAS - BOLEX CAMERAS
- AURICON CAMERAS. All types of conversions.
- BELL & HOWELL FILMS. Slotting and repairs. (2-day service, reasonable prices)
- CANON SCOOPIC CAMERAS. Authorized factory repair (both in and out of warranty); sound and silent.
- CP-16 CAMERAS.
- YODER CRYSTAL 16 CAMERAS.

- AMPLIFIERS OF ALL KINDS.
- POWER PACKS OF ALL KINDS.
- REBUILD MAGNETIC HEADS OF ALL KINDS.

P.O. BOX 20296
2911 LADYBIRD LANE
DALLAS, TEXAS 75220
(Area Code 214) 357-3045 or 357-2725

THE SOUNDMAN'S DREAM MACHINE



STELLAVOX

Patented *no-flywheel* motor... absolutely constant speeds, flawless performance under all conditions... even upside down. Unsurpassed professional sound quality. Many exclusive time, work and money saving features.

CALL, WRITE or WIRE FOR FULL INFORMATION and NAME OF NEAREST DEALER

Service throughout the U.S. and abroad.

STELLAVOX CORPORATION OF AMERICA

California: 8463 CANOGA AVE., CANOGA PARK, 91304 • (213) 998-8118 • TELEX 69 8547
New York: 19 GAZZA BOULEVARD, FARMINGDALE, LONG ISLAND 11735 • (516) 752-0019 • TELEX 12 6372



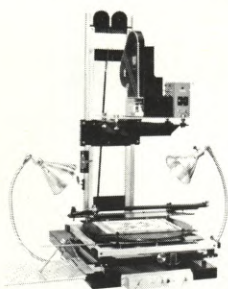
FOR YOUR PRECISION TEMPERATURE CONTROL REQUIREMENTS CHECK WITH:

FRIGIDHEAT

BOX 12037 OR
1-615-383-4255

NASHVILLE, TENNESSEE

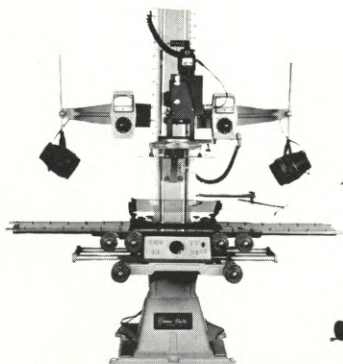
Meet the FAX FAMILY



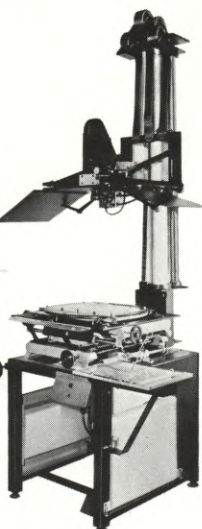
'JR.' THRIFTFAX
CAMERA STAND



ANIMATOR'S DISCS,
COMPOUNDS



FAX-RICHARDSON
CAMERA STAND



THRIFTFAX
CAMERA STAND

For all ANIMATION/TITLING/FILMSTRIP production and preparation equipment, for animation supplies of all sorts, get the facts, first, from FAX Company. A two-part descriptive price list covering "The Mechanics of Animation" and "The Art of Animation" is yours free, on request. Tell us of special needs.

FAX COMPANY

374 S. Fair Oaks Ave., Pasadena, Calif. 91105 - 213/681-3084

MAGIC FOR ORIGINAL "KONG"

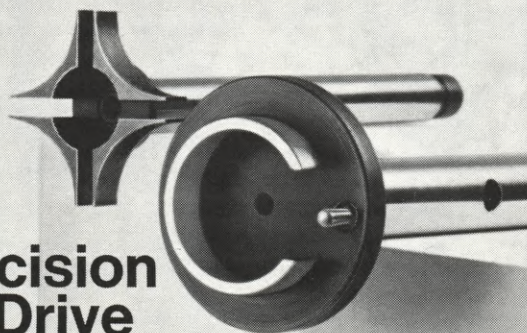
Continued from Page 65

ture and full-scale elements.

The first back projection ever attempted at RKO is in "KING KONG". It was done on a special cellulose screen invented by a paint technician, Sidney Saunders, who won an Academy Award for it. Some of the studios were using smaller screens of sand-blasted glass, which gave them flat images with reduced contrast. Breakage of glass screens already had caused serious injuries at some studios. The Saunders screen produced a more brilliant image with, for the first time in process projection, a full tonal range that included pure whites and blacks. It quickly became evident that conventional prints and projectors were too unsteady for background action to be shown behind fixed foreground objects, so we made precision pilot pin registration plates on the optical printer. Because this technique was very new, the cameramen and projectionist ran into problems with screen hot-spot fall-off with the foreground lighting. Some of the scenes in question were those in which Fay Wray in a treetop is menaced by a *tyrannosaurus rex*, and then watches the fight between the reptile and Kong. The previously photographed scenes of the animated beasts survived expansion onto the 16-by-20 foot screen, which was considerably larger than any other then in use, and even today look surprisingly good.

The success of the Saunders screen led to the development of another process that was used for the first time in "KONG": miniature back projection. By this technique it was possible to project footage of actors on small screens in miniature settings, so they could react to Kong and other animated monsters. This was more convenient than using conventional matting because both elements, the miniatures and the projected full scale shots, could be photographed at the same time. Again, special registration optical prints were made to be used in specially constructed stop-frame projectors. The projected images, of course, had to have been animated a frame at a time, to be combined with the animation of the animals. Conventional screen materials proved too grainy for such close work, so a great deal of experimenting was done before it was discovered that tightly stretched surgical rubber sheeting produced grainless process screens. It was through such miniature projection that Bruce Cabot was shown in the cave under the edge of the cliff when Kong

available now --



high precision Geneva Drive components & assemblies in several styles

for extremely critical indexing. Four-position Geneva Starwheels, one-piece construction of hardened tool steel. Drivers of hardened steel. Both available in several styles. Complete intermittent movement assemblies also available. Send for catalog AB-61.

Geneva specialists since 1908
LaVezzi machine works, inc.

900 N. Larch Ave. • Elmhurst, Ill. 60126 • (312) 832-8990



was trying to reach him, and Fay Wray was positioned on that precarious ledge atop the Empire State Building; and Bob Armstrong was able to stand behind the body of Kong at the ending to make his "It was Beauty killed the Beast" speech — to give only two examples of this technique.

The most dramatic use of miniature projection was in the scene wherein Kong holds the girl in his right hand and tears off strips of her clothing with his left hand. His right arm and hand, in full scale, and the real Fay Wray, were filmed against an appropriate background and projected, a frame at a time, behind animation of the miniature Kong. This composite is considered to be flawless.

Each scene involving special effects was worked out first as detailed drawings, and O'Brien insisted that the actual scenes must be translated faithfully into three-dimensional form from these drawings. The art conceptions were the work of Mario Larrinaga, now 82 and still a great artist, and of the late Byron Crabbe. Mario and Byron also did the unusually elaborate matte and glass art, which is much in evidence during about two-thirds of the picture and is ranked among the best work of its kind. Much of the atmosphere and general mood of the picture were derived from the talents of these fine artists, especially in the jungle scenes which are considered far more dramatic than any real jungle location could be.

Carroll Sheppherd, a member of the art department at the time, was launched on his notable career in special effects, when O'Brien gave him the exacting job of planning scales, perspectives, camera positions, selection of lenses and methods to be used for compositing. Shep made charts showing the sizes of objects at various distances when photographed through many different lenses with focal lengths ranging from 40mm to 125mm.

An improved matting system invented by Frank Williams, a pioneer effects technician, was used in many composite scenes. Although this was another traveling matte process, it was better at that time for large-scale work because it could be used with a white screen background. In such a scene as the one in which the huge gates of the village swing open and Kong appears in the 60-foot high opening, the Williams process was ideal. In this instance, director Schoedsack staged the full-scale portion of the sequence at night on a big outdoor set at Pathé, in Culver City. Some 350 lamps played over the hordes of extras and the towering wall — which, incidentally,

TITLE HOUSE INTRODUCES A NEW SERVICE!

SUB-TITLES

MADE LOCALLY!

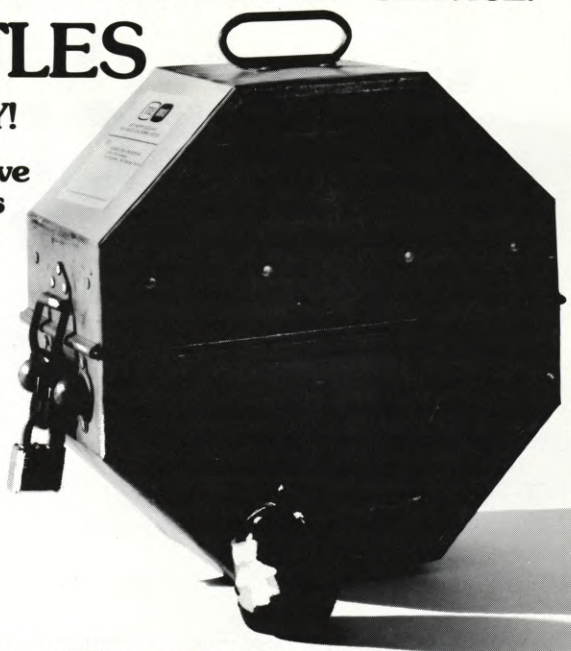
Now you don't have to send your films to the east coast.

We do it all here:

Continuity
Dialogue List
Spotting (Timing)
English List
Setting Titles
Camera
Lab
Everything!



800 Cole Avenue
Hollywood, CA 90038
(213) 469-8171



HOLLYWOOD BITES BACK!



IF BOWLING'S IN YOUR SCRIPT, WRITE US IN.

We're set up to be your one-stop clearing house for lanes, equipment, lighting, pro bowlers, and all the no-cost technical advice you need. Whatever it takes to communicate in the leisure-time language of 65,000,000 Americans. We're ready to roll when you are.

THE BOWLING MEDIA CENTER

National Bowling Council, 1666 K Street, N.W.
Washington, D.C. 20006 / (202) 659-9070

was built over the ruins of one of Cecil B. DeMille's old sets from "THE KING OF KINGS". Tractors pulled the gates open, revealing the giant backing on which Kong would later appear in the composite.

The expedition ship, the *Venture*, was really three ships: a 12-foot miniature with three-inch people on the deck, an actual steamship at San Pedro, and a mock-up on a sound stage. Although the miniature ship glided eerily through water and fog in the finished film, this water was matted in, because the ship was made of cardboard painted to resemble corroded metal. Another artistic miniature was the outside of the great wall, which was textured to resemble ancient stone and covered with crawling vines. Noble Johnson and his native subjects were matted in along the top of the wall, this action having been previously photographed on top of stage 10 at Pathé Studio.

The Empire State Building, the elevated train, and many other New York landmarks were constructed in miniature in exquisite detail. It has been claimed that a man in a hair suit impersonated Kong as he climbed miniature buildings, but this is entirely incorrect. O'Brien's assistant, E.B. "Buz" Gibson, animated the miniature Kong climbing up the building. Because the miniature building and Kong were built to different scales, it was necessary to photograph them separately and combine them on the optical printer. The crashing airplane also was made using this technique.

The publicity department at RKO sometimes tended to exaggerate. Kong was publicized as a 50-foot gorilla because, in theory, "the bigger the better." Actually, Kong was scaled to appear about 18 feet tall in the jungle scenes because the relationship of the monster to the actors was considered to be most effective at this scale. When Kong was taken to the city, however, it became necessary to increase his size somewhat because of his oversized surroundings. The decision to change Kong's proportion in mid-film was arrived at amidst a storm of controversy, and some of O'Brien's technicians even now feel it was a bad decision.

The four Navy pursuit planes that attacked Kong on the Empire State were real in several scenes. Director Schoedsack and Cameraman Linden went to New York to photograph the biplanes as they dived and circled the Empire State Building. When seen in close quarters with Kong, the planes were miniatures built to four different scales ranging from models with four-



Daily processing of VNF 7240 at 250 ASA

ECO - 7390 The ultimate film reproduction in sharpness, color & silversound

ECO - EF 7389 Excellent low contrast print rendering with silversound for TV or projection.

16mm EKTACHROME ECO 7252

16mm ULTRASONIC CLEANING

16mm ME-4 PROCESSING, VNF-7240

16mm CREATIVE EDITING (Kem Table)

16mm COLOR WORKPRINTING

16mm CONFORMING ASB ROLLS

16mm RELEASE PRINTING 3400K - 5400K

16mm CREATIVE SOUND PRODUCTION (Interlock)

16mm OPTICAL SOUND TRANSFER

16mm POSTFOGGING OF EF

16mm SILVERSOUNDTRACK APPLICATION

16mm TITLES & ART WORK

16mm OPTICAL PRINTING

CHANNEL 8 COLOR LABS

905 JACKSON STREET/P.O. BOX 1410

TAMPA, FLORIDA 33601/813/229-7781

FOR A FREE BROCHURE AND PRICE LIST, WRITE TO ABOVE ADDRESS

inch wing spans up to about sixteen inches. This was found necessary to get an effect of various distances within the forced perspective of the miniature set. It was necessary to regulate the relative speeds of the airplanes to match the simulated distances from the camera. The planes were attached to tautly weighted tracks of piano wire, the wires being moved forward in carefully calibrated steps.

Everyone was worried because the rabbit fur covering the Kong model rippled with undesired flurries caused by the touch of the animators. Actually, this seemed to add a bit of extra life to our leading man. Sometimes it created a bristling effect which was entirely appropriate to Kong's temperament at the time. When he stood on the tower of the Empire State Building it seemed to impart a suggestion of wind ruffling his hair, thus adding to the situation's tenseness.

The camera itself was animated in several shots, the most spectacular being those in which it appears to swoop down toward the raging Kong as though it were mounted on the attacking aircraft. To achieve this effect the camera was moved in minute steps down a specially constructed ramp about 24 feet in length. The camera also took the place of the doomed elevated train's point of view as it roared down the tracks toward Kong, shown tearing up the trestle ahead. This is another scene in which it is generally thought that Kong was impersonated by a gorilla-suited man, but in actuality both Kong and the camera's moves were animated frame-by-frame.

Many of the special effects of the old "KONG" could be achieved today with greater ease, utilizing the equipment and technology we now possess. We had to do it the hard way then, learning and inventing as our work proceeded. It was a trail-blazing effort, and so fraught with difficulties that we sometimes wondered if the film ever would be completed. There was, however, a happy ending . . . it saved the studio from bankruptcy and it has greatly entertained and *inspired* millions of movie fans of all ages. Maybe Ray Bradbury hit the mark when he said that "KONG" possessed "such style, force and imagination as will not allow one scene, one frame, one line of dialogue to be cut . . . KONG has everything." ■

MOVING?

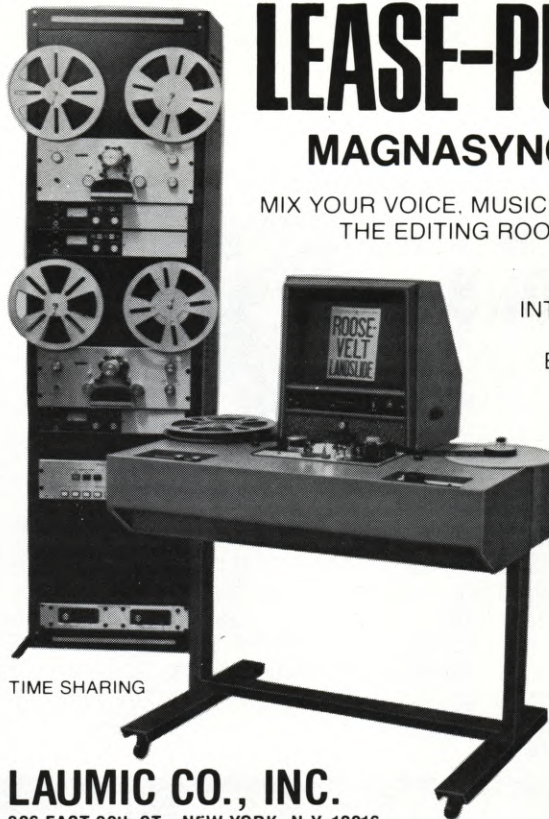
When changing your address, please notify us at least four weeks in advance. BE SURE to give your FORMER address as well as your NEW ADDRESS and ZIP CODE.

AMERICAN CINEMATOGRAPHER

LEASE-PURCHASE

MAGNASYNC and MOVIOLA

MIX YOUR VOICE, MUSIC AND EFFECTS TRACKS IN THE EDITING ROOM WITH THE MAGNASYNC SERIES 3000 INSERT RECORDER SYSTEM INTERLOCKED WITH ONE OF THE MOVIOLA CONSOLE EDITORS AND OUR MIXER.



TIME SHARING

LAUMIC CO., INC.

306 EAST 39th ST., NEW YORK, N.Y. 10016
SALES • SERVICE • RENTALS

Isn't it nice to know we'll be around to service your equipment . . . **AFTER THE DEAL IS CLOSED?** ®

2
or 6
And MIX

For a demonstration or additional information contact STU MANN (212) 889-3300-1-2

Why did the new Cinematics editor take 5 years to develop?



Because it's so simple.

We would like to be able to say the new Cinematics Editor is a revolutionary breakthrough, but we achieved our goal without a breakthrough. We set out to produce a compact inexpensive horizontal editor that would be as convenient to use as the big expensive flatbeds. Instead of a breakthrough, what turned out to be necessary was five years of patient design and a host of minor innovations.

We experimented with virtually all the drive technologies currently employed in flatbed editors, and some that are not. We discovered that almost any feature can be incorporated into a machine for a price, but that the real trick is to retain the desirable ones in a machine that almost anyone can buy. And along the

way, we developed a unique drive and frame design (on which a U.S. Patent is pending) that enables us to build an exceptionally simple, reliable, and inexpensive editor that is actually easier to use than the big expensive machines we set out merely to equal.

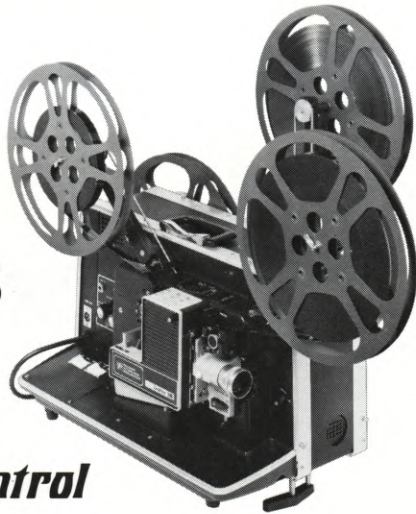
The basic mechanism accepts modular picture and sound heads in Super-8 and 16mm. Prices range from about \$2200 to about \$2800, depending on options. Please send for our detailed illustrated brochure and price list.

Box 16045-B
Baltimore, Maryland
(301) 889-7900



Introduced at SMPTE.

PALMER INTERLOCK PROJECTORS



now with
Dynamic Syne Control

This exclusive new feature allows picture and magnetic track relationship to be adjusted while the projector is running. Palmer interlocks are dependable, easy to operate, and gentle on all kinds of film. There are four new models for single and double system playback and studio quality recording.

Write for full details.

W. A. PALMER FILMS, INC.

611 HOWARD STREET • SAN FRANCISCO, CA 94105 • PHONE (415) 986-5961

San Francisco's complete 16 mm film service

JOHN BARRY GROUP

SALES — RENTAL — SERVICE
CAMERAS — SOUND
LIGHTING — EDITING
— EVERYTHING —

We are your one-stop equipment house in Australia and Southeast Asia with the most comprehensive range of 16mm and 35mm motion picture/television production equipment available for SALE or RENTAL



105 Reserve Road
Artarmon, N.S.W. 2064
Sydney, Australia.
Telephone: 439-6955
TELEX: 24482

AUSTRALIA

THE ORIGINAL "KING KONG" Continued from Page 81

Delgado, who later added the intricately detailed skin, nails and hair, was dissatisfied with the design of the paw because it could not be made to "cup" in the manner of a true hand. It was, nevertheless, an impressive prop with properly jointed digits and would prove invaluable in the staging of many important scenes.

By means of projected backgrounds, the hand and Miss Wray appeared to be nearly a thousand feet in the air when Kong examined his captive while perched atop the Empire State Building. In another memorable shot the arm was combined with the miniature in an over-the-shoulder view as Kong lifted the girl from the jungle floor. The most unusual use of the arm was for scenes devised by O'Brien in which Kong, comfortably seated near the summit of his mountain stronghold, tears away pieces of the actress's dress, gently strokes her body with his fingertips and sniffs the feminine scent that lingers. Here miniature projection was used to make Miss Wray and the arm appear to be a part of the miniature Kong.

Other full-size properties included a foot and lower leg of Kong to permit close-ups of men being trampled into the ground, and the lower body of a pteranodon (or flying lizard) that tries to carry Miss Wray away from Kong's mountaintop home.

The most spectacular prop of all was a huge head, chest and shoulders of Kong to be used in close-ups. Technicians constructed the frame of wood, wire, cloth and metal and covered it with rubber and pruned bearskin. As many as three men could huddle inside and by means of ingeniously designed levers and a compressed air device operate the mouth, lips, nose, eyes, eyelids and brows so that they moved in an astonishingly lifelike manner. It was capable of achieving a wider range of expression than can be summoned by many a professional actor.

The balsa-and-plaster eyes of this behemoth were about twelve inches in diameter. The balsa wood eye-teeth were ten inches long and the molars were four inches high and fourteen inches in circumference. The mouth was capable of stretching to a six-foot smile or grimace and could be opened wide enough to accommodate the bodies of actors who portrayed victims of Kong. The nose, which dilated and twitched with the stress of various passions, was two feet across. The heavy brows, which could be wagged in

the Barrymore manner, were more than four feet across. The contraption was mounted on a heavy, rubber-wheeled flatcar, so that it could be moved about.

OTHER PROCESSES

Some scenes in which foreground and background action had to be photographed at different times and places were combined through the Dunning travelling matte process, which permitted filming of greater scope than could be achieved with rear projection.

O'Brien, who already had filmed excellent Dunning shots in *Creation*, used the process in *Kong* for scenes such as one in which a dinosaur attacks Denham and his men.

A few scenes were achieved with the more complicated Williams Travelling Matte Process, which also utilized two films and a blue backing but permitted the use of "hard" (white) light in foreground action. This feature was particularly useful in filming vast scenes with complex lighting, such as Kong's first appearance in the native village.

A key member of Vern Walker's camera effects department was Linwood Dunn, a leading expert in the then-new art of optical printing. Dunn and his assistant, Cecil Love, and engineer Bill Leeds, had developed for RKO an optical printer.

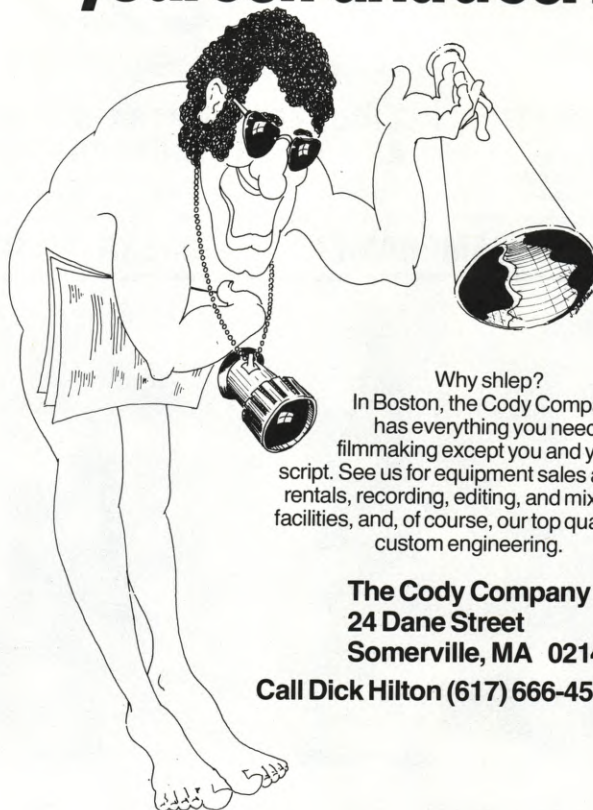
"Obie was trying to do everything in the camera," Dunn recalls of his work on *Kong*, "which meant that when things didn't match up in intensity they had to do it over until they got it right. This involved a great deal of testing. About halfway through the production I managed to talk him into letting us match the composites in the optical printer, where we could see what we were doing and get it right the first time. We only had one optical printer and the thing was constantly in use for duping, making trick matting shots, fades, dissolves, split-screen effects and multiple exposure work. We also made all registration prints for Vern's process-background work so he could secure perfect registration in his process composites."

THE GOOD SHIP VENTURE

Some of the shipboard scenes were made aboard a freighter out of San Pedro, while others were done at the studio using mock-up portions of the ship. Several diffused shots of the crew at work as the steamer gets under way in the early dawn are beautifully atmospheric and are matched perfectly to the studio shots.

A model of the "Venture" twelve feet in length was used to show the ship in the fog. It duplicated faithfully all external details of the real steamer, the

Shooting in New England? Now all you need is yourself and a script.



Why shlep?

In Boston, the Cody Company has everything you need for filmmaking except you and your script. See us for equipment sales and rentals, recording, editing, and mixing facilities, and, of course, our top quality custom engineering.

The Cody Company
24 Dane Street
Somerville, MA 02143

Call Dick Hilton (617) 666-4540

The London International Film School



The intensive two year Diploma Course in Applied film-making continues. It is designed to make graduates fully professional in their creative work. It will also be extended to include a full-time Diploma Course in Video.

Courses start on January 10th and April 25th 1977. Write to the Student Councillor Dept., London International Film School, 24 Shelton Street, London WC2H 9HP, England.



TYLER
camera systems

**VIBRATION ISOLATION HELICOPTER CAMERA MOUNTS
FOR 16 / 35 / 70 mm AND TV PHOTOGRAPHY**

Hollywood 213-989-4420 — San Francisco 415-864-4644 — Toronto 416-920-5424 — New York 212-431-3930
Miami 305-757-5988 — London 01-452-8090 — 01-223-2323 — Paris 328-5830 — Sydney 428-5300

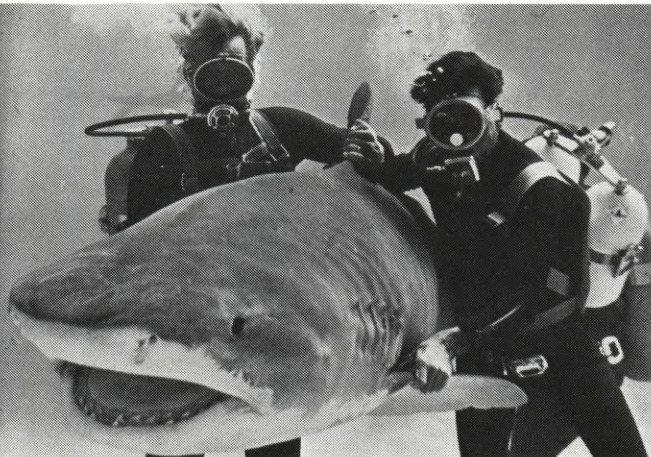
Send for brochure — Tyler Camera Systems, 14218 Aetna Street, Van Nuys, California 91401 U.S.A.

HELICOPTERS CAMERAMEN CAMERA PILOTS

Jordan Klein

UNDERWATER CAMERAMAN
MEMBER I.A.T.S.E.
LOCAL 666
UNDERWATER PROPS
SETS
DESIGN & CONSTRUCTION
STOCK
FOOTAGE LIBRARY

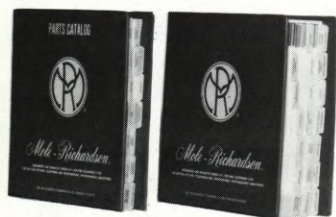
JORDAN KLEIN, INC.
3131 N. E. 188 ST., MIAMI, FLA. 33160
P. O. BOX 690605, MIAMI, FLA. 33163
(305) 931-2300



MICROFILMED
BACK ISSUES OF
AMERICAN CINEMATOGRAPHER

1921 through 1967 available

UNIVERSITY MICROFILMS
EDITORIAL SERVICES
300 N. ZEEB RD.
ANN ARBOR, MICHIGAN 48106



Mole-Richardson Co.

937 NORTH SYCAMORE AVENUE
HOLLYWOOD, CALIFORNIA 90038

Telephone (213) 851-0111

DESIGNERS AND MANUFACTURERS
OF LIGHTING EQUIPMENT FOR THE
MOTION PICTURE, TELEVISION AND
PROFESSIONAL PHOTOGRAPHIC INDUSTRIES

Please send

_____ Equipment Catalog @ \$10.00
_____ Parts Catalog @ \$8.00

Name _____

Address _____

City _____ State _____ Zip _____

Add \$7.00 per catalog for surface parcel post outside U.S.A.
Add \$40.00 per catalog for air parcel post outside U.S.A.

studio shipboard mock-ups and the personnel on deck. The human figures, carved from wood by Cerisoli, were superbly detailed, even to the pipes being "smoked" by Denham and Englehorn. The plates of the ship's hull were constructed from illustration board and painted to resemble metal long exposed to the sea. The thousands of rivets were brass escutcheon pins. The effect of the ship on the ocean was achieved without actually launching the model into the water.

Beach scenes at Skull Island were filmed near San Pedro. The long shot of the initial landing shows the actual ocean in the foreground, the players and the boats on the beach in the middle distance and, via a glass painting, the great wall and Skull Mountain appear to be in the far distance. The glass art actually was within a few feet of the camera. Flying gulls were superimposed to add depth and movement to the scene. The closer views of the landing were photographed from a high angle to eliminate the necessity of a background. For the reverse angles of Denham and his party on the beach after Kong has been subdued, a glass shot was employed to place the "Venture" offshore against a night sky. This shot then was projected in miniature behind the unconscious figure of Kong lying on the beach.

OBIE'S POINT-OF-VIEW

Willis O'Brien said that "The miniature technician cannot bring his set to the screen single-handed. It is fundamentally an artist's conception but requires the united efforts of many craftsmen, its success depending entirely upon the combination of artistic, photographic and mechanical effects, each person being a specialist in his field but also having a general knowledge of the whole.

"When making *King Kong* it was necessary to have a large staff of experienced men to carry on the work. Men were kept busy building and repairing animals, and constructing mechanical devices as required. Another group built the miniatures, which included a New York Elevated Railway re-created in detail, and jungle settings on a tropical island. Mario Larinaga and Byron Crabbe made the sketches and later painted the backings and glasses for the miniatures.

The members of O'Brien's technical staff were men who just happened to be in the right place with the right skills at the right time. The heads of the various departments from which they were recruited resented having to furnish personnel without having any authority over the work they were doing. Most of




SHOOTING IN CANADA?

Contact Jim Grattan for top equipped crews. Single and double system.

GRATTAN PRODUCTIONS

4606 St. Catherine Street, West
Montreal H3Z 1S3, P. Q. Canada
(514) 932-1463



**ANIMATION
LEARNING KITS,
SUPPLIES, EQUIP.**
New No. 106 Catalog \$1.00
heath productions, inc.
1627 Scott Avenue, W. Islip, N. Y. 11795

Rain Covers
for most
16mm and 35mm cameras
alan gordon enterprises inc.
1430 N. CAHUENGA BLVD.
HOLLYWOOD, CALIF. 90028
Telephone: (213) 466-3561



PROFESSIONAL
UNDERWATER
PHOTOGRAPHY

(415) 530-1122

Al Giddings Enterprise
12812 Skyline Blvd. Oakland, CA 94619

MOVING?

PLEASE NOTIFY US
6 WEEKS IN ADVANCE

Miss/Mrs./Mr.
Name (please print)

New Address Apt. No.

City State Zip

MAIL TO
AMERICAN
CINEMATOGRAPHER
P.O. Box 2230
Hollywood, Ca.
90028

ATTACH LABEL HERE for address change or inquiry. If you are receiving duplicate copies of AMERICAN CINEMATOGRAPHER, please send both labels. If moving, list new address above.

them worked on *Creation* and by the time *Kong* was put into production the curiously assorted group was able to contribute a variety of skills learned during the previous years.

"Experience is the only teacher," O'Brien had said. "Each new set is an individual problem and requires separate treatment. There is no common rule or method by which you can classify all miniatures."

PROBLEMS OF ANIMATION

Early in production it became evident that an animation scene, once begun, must be carried through to completion without lengthy interruption. Some of the early scenes were ruined because they were abandoned before completion at the end of the work day and finished the next day. When screened, these scenes betrayed sudden startling changes during the action because the live plants used in miniatures tended to grow, die or in other ways become noticeably different. Lamps would not relight at the same intensity due to variations in voltage or normal deterioration.

Real plants used in miniature sets had to be watered frequently because of the heat of lamps. The resulting highly humid condition caused some plants to grow much faster than usual. When animation of a scene was continuous, such growth was normally imperceptible but any delay in time during the animation process would show up on the screen as a disturbing "jump."

The thin copper palm fronds and ferns made with great skill and patience for the miniature jungles were sometimes ruffled into different positions or completely collapsed as the result of the inrush of air when stage doors were opened by departing and returning personnel. This was a practice severely frowned on during critical animation sequences except in the greatest necessity. Large, hot incandescent lamps could be caused to blow up from a sudden inrush of cold air.

On one occasion a certain miniature scene was in work for an entire day (not an unusual circumstance). In this instance a primrose plant used to represent large-leaved jungle foliage came into bloom. Nobody noticed this slowly developing phenomenon until the rushes were projected the next morning. Then it was found that the scene contained a perfect time-lapse study of the pure white flower opening! In the miniature set the white blossom appeared gigantic and, of course, made re-shooting of the entire scene unavoidable!

On another occasion involving several days of work the crew lined up

American Cinematographer REPRINT

June, 1968
FILMING "2001—
A SPACE ODYSSEY"

December, 1969
SUPER-8—THE STATE
OF THE ART

June, 1970
SUPER-16

October, 1972
VIDEOTAPE & FILM

ALL IN ONE PLACE



\$5.00

(Dealer Discounts—Inquire)

AMERICAN CINEMATOGRAPHER
P.O. Box 2230, Hollywood, Calif. 90028

Please send me _____ copies of the
FOUR-IN-ONE reprint @ \$5.00 ea.,
postpaid.

NAME _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

California residents please remit 6%
Sales Tax. (30¢ per copy). Foreign
buyers please pay by International
Money Order or U.S. Funds.

American Cinematographer

REPRINT

June, 1968

FILMING "2001—
A SPACE ODYSSEY"

December, 1969

SUPER-8—THE STATE
OF THE ART

June, 1970

SUPER-16

October, 1972

VIDEOTAPE & FILM

ALL IN ONE PLACE



\$5.00

(Dealer Discounts—Inquire)

AMERICAN CINEMATOGRAPHER
P.O. Box 2230, Hollywood, Calif. 90028

Please send me _____ copies of the
FOUR-IN-ONE reprint @ \$5.00 ea.,
postpaid.

NAME _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

California residents please remit 6%
Sales Tax. (30¢ per copy). Foreign
buyers please pay by International
Money Order or U.S. Funds.

the various elements of a complicated scene with three planes of glass art and mattes, a painted backing and miniatures in between. After many photographic tests the set was at last considered camera-ready about noon of the third day. Everybody went to lunch and while they were eating, a slight earthquake occurred. It was only a minor tremor and nobody gave it more than a passing thought. When the crew returned to work and made a last test before shooting, they found that the different elements of the set had shifted just enough to require a new, tedious rematching job.

Other strange things could happen in animation. An animator worked for several hours on a difficult scene when he discovered that he had left a pair of pliers lying so that one of the handles was within camera range in the foreground. Due to the low camera angle it was unidentifiable, but appeared only as an elongated gray mass. Unable to bear the thought of starting afresh, the animator slowly and carefully moved the tool out of the scene frame by frame as he animated the dinosaur featured in the particular action. Anyone seeing the undistinguished form moving along the bottom edge of the frame would consider it a snake or other reptile escaping. But it is safe to say that few people would be diverted from the main story line unfolding on the screen to the extent of giving the animated pliers a second thought.

Kong's fur, as Delgado had predicted, proved to be a problem in animation. Cooper and Schoedsack were appalled when some RKO executives joined them in viewing animation rushes. Their hearts sank as they watched the hair of Kong's head and shoulders ripple with each touch of the animator's fingers. The unwelcome effect was emphasized by artful back-lighting.

SCALE AND NEW YORK

For the jungle scenes, technicians worked on a basic scale of one inch equals one foot, making Kong appear to be eighteen feet tall. For some scenes Cooper ordered the scale adjusted to suit the dramatic needs of the scene. It was his conception of the beast that he must always appear gigantic, but never so large as to destroy his interest in the human players.

"We realized we'd never get much drama out of a fly crawling up the tallest building in the world," Schoedsack says. Too much of the picture had been done to permit a new start. After much gnashing of teeth, the producers decided they would film the city scenes in a different scale, making Kong

SOUND TRACKS

Resolving
Narration
Music
Sound Effects
Editing — Mixing
All 16mm & Multi-Media
Production Services
Arriflex & Nagra Rental

Bob Lindahl

NORTHWESTERN, INC.

011 S. W. Hooker Street
Portland, Oregon 97201 (503) 226-0170

CANADA'S LARGEST LAB AND SOUND FULL SERVICE ORGANIZATION



MONTREAL 2000 Northcliffe Ave.
Montreal, Que. H4A 3K5
Tel. (514) 484-1186

TORONTO 9 Brockhouse Road
Toronto, Ont. M8W 2W8
Tel. (416) 259-7811

*A DIVISION OF ASTRAL BELLEVUE PATHE LTD./LTEE

VIDEO NEWS FILM

VNF processing
7239-7240
normal & force
developing to
ASA 1000
FLASHING

SEND FOR NEW PRICE LIST

NL (213) 462-6814
NEWSFILM LABORATORY, INC.
516 No. Larchmont Blvd.
Los Angeles, California 90004

**IN
CANADA**
Complete 16mm & 35mm color & b&w
processing and printing. Eastman COL-
OR Ektachrome processing. Magnetic
sound stripping for 16mm-8mm and
Super 8mm. Vacuumate
film treatment. 16mm
Optical
Transfers.

QUEBEC 1085 St. Alexander St., Montreal, Quebec
FILM LABS Telephone (514) 861-5483

wide range



Samy's

- Kodak Cine Special II w/3 lenses, 2-100' Mags. Case, Book, Masks Mint \$ 329
- Bolex EBM w/charger Battery, Grip, 16-100 Vario-Switar POE New \$1889
- Arri 16S w/2 400' Mags, Motor, Torque Motor, Battery, 3 Prime Lenses, Zoom Lens .. Used \$3600
- Eclair ACL 2 200' Mags, 2 Batteries, Charger, Alum. Case Used \$4600
- Bell & Howell 70 DR w/3 lenses Used \$ 289
- Beaulieu 5008 S w/6x80 Angenieux .. New \$1600
- Beaulieu 4008 ZM II w/66 and 1 year warranty Demo \$ 795
- Bauer Royal C8E with one year warranty Demo \$ 329
- Bauer 103XL Sound Camera New \$ 239
- Bauer 105XL Sound Camera New \$ 359
- Bauer 108 Sound Camera New \$ 349
- Bauer C50XL New \$ 229
- Bauer P6 Optical-Mag Auto Projector .. Used \$1189
- Bell & Howell 1535 Projector Used \$ 349
- Bell & Howell 385 or 399 Projector Used \$ 249
- Bell & Howell 179 or 185 Projector ... Used \$ 199
- Elmo 16 Sound Projector \$ 600
- Elmo ST 1200D Super 8 Projector ... New \$ 389
- Elmo ST 800 Super 8 Projector New \$ 249
- Used 16 Sound Projectors From \$ 99
- Soligor Spot Sensor New \$ 99
- Smith Victor Quartz Light Set Used \$ 159
- Sylvania S677 Sun Gun w/Dichroic Like New \$ 139
- Maier Hancock 816 Like New \$ 189
- Ciro Super 8 Splicer New \$ 11

Samy's Camera

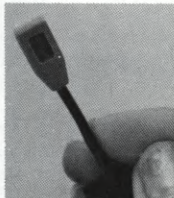
8451 Beverly Blvd.
Los Angeles, CA 90048
Telephone: (213) 653-1090

little mike BIG EAR



Here's a really all-purpose microphone—just about as small as possible, 8mm by 18mm by 5mm (5/16 by 11/16 by 3/16 in.), but big in performance and versatility. Slick and smooth for minimum clothing noise. Wide frequency range without peakiness for use with music as well as speech. Specially developed cabling and connectors. Immediate delivery, too!

Model 14: 4 ft 6 in. cable, locking micro connector, \$110.;
Model B-30: 12 ft cable, locking micro plug, and matching balance transformer for balanced/unbalanced convertibility, \$140.



1825 NE 149 Street Miami, Florida USA 33181
305/945-1111
Telex 51-9348
TWX 810/845-4242



**IMAGE
DEVICES**
INCORPORATED

appear twenty-four feet high, and hope that audiences would be too engrossed in the action to notice.

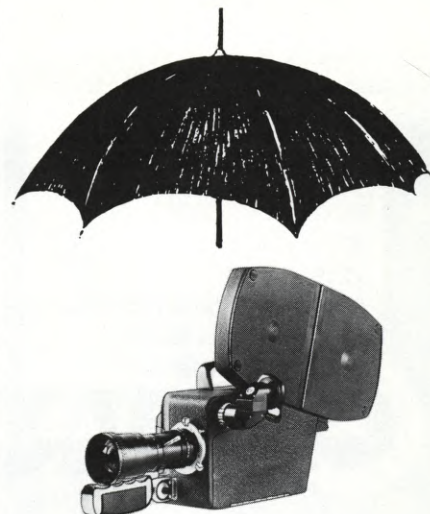
Kong did all of his New York scenes in California — in sets duplicating in miniature the streets of the city.

The night exterior of the theatre in which Kong makes his Broadway *début* is a combination of art and a busy street scene. The interiors were filmed in the old Shrine Auditorium in Los Angeles, which Schoedsack rented for one day's use. The principals acted their scenes on a stage before an audience of dress extras. Kong, photographed separately in a miniature stage, was matted in.

The leading players and the actors appearing as newspapermen are shown in the wings of the stage when Kong leaps down from the platform after breaking free. In reality, Kong was lowered in barely perceptible steps of animation. The actors were introduced through miniature projection in this and a subsequent scene wherein Kong smashes the stage door (made of thin copper for animation purposes) at the back of the theatre and emerges into the alley as the players in the background race toward a hotel across the street.

Kong's face which looks into the hotel window in this and other scenes is that of one of the eighteen-inch models. The large head proved unsatisfactory for these scenes because it was too inflexible to convey the idea that the ape was hanging onto the side of the building and moving about. The unbilled actress who so effectively portrayed the victim is shown in the grasp of the huge paw both in the room and as she is held over the process background of the street. An animated figure was used for the more distant views when she is held and then dropped by Kong. Delgado's articulated giant hand released the victim convincingly in the close shot. The last part of the sequence consists of a dizzying down-shot toward the spotlights below in which the kicking and shrieking woman (superimposed) plummets to her doom.

Kong's recapture of Fay Wray was photographed in the same technique. Miss Wray and Cabot are shown in the room as the monster face rises into view at the window behind them and expresses recognition. The face withdraws and Kong's full-scale arm crashes in through another window. The arm is withdrawn and Kong looks in again to see Miss Wray swooning across the bed as Cabot snatches a chair as a weapon. Again the great hand is thrust into the room, tumbling Cabot, and draws the bed to the



all under one umbrella MOTION PICTURE EQUIPMENT SPECIALISTS

the **BRENNER CINE-SOUND** organization covers every aspect of Cinematography equipment. Under our umbrella we have a unique team of personnel and services, backed by many years of expertise related to Sales, Service, Rentals and Repairs.

■ Whether your requirements are: Cameras, Lenses, Motors, Magazines, Tripods, Power Supplies, Lighting, Editors, Meters, Projectors, Tape Recorders or Screens **BRENNER CINE-SOUND** has it in stock with product names such as:

Angenieux	Eclair	Neumann
Arriflex	Electro-Voice	O'Connor
Arrivox	Guillotine	Oxberry
Beaulieu	Magnasynch	Permacel
Beyer	Maier-Hancock	Revox
Bolex	Miller	Sennheiser
Canon	Minerva	Shure
Cinema Products	Moviola	Spectra
Colortran	Nagra	Sonorex
		Zeiss

For more information on Motion Picture Equipment, Sales, Service & Rentals, call or write

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

BRENNER CINE-SOUND

Div. of Ritz Camera Centers

Please mail me additional information:

Service Sales Rentals

Name _____

Address _____

City _____

State _____ Zip _____

REVERSAL SPECIALISTS

16mm — Super 8
Color — B&W
Same Day Service
ECO — EF — EFB — MS
VNF
7239 — 7240
Flashing — Forced processing
Dailies — A&B's
Custom Service



YALE LAB.

1509 N. GORDON ST.
HOLLYWOOD, CA 90028
(213) 464-6181

Covering FLORIDA
like the SUNSHINE—



COMPLETE RENTAL SERVICE

PHOTOMART

CINE EQUIPMENT SUPPLIERS

6327 S. ORANGE AVE., ORLANDO, FLA. 32809

Phone (305) 851-2780

SMITH-VICTOR

Model K33

QUARTZ STUDIO KIT

A Studio in an Overnight Case



The K33 is a deluxe kit that consists of 3 600 watt 700 DYH 3200° K Quartz Lights, 3 SA28 8 ft. black aluminum stands, 3 701 barn doors and a 650 case that has room for lights, stands, extension cords, spare lamps and barn doors.

Available through Professional Photo Suppliers and CC Video Dealers.

Model K33 \$300.00 (1800 watts)
Write for information on other Kits.

AT YOUR PROFESSIONAL DEALER

SMITH-VICTOR CORP.

Griffith, Indiana 46319

window. It lifts Fay carefully and holds her over the background of the distant street with its sweeping spotlights. The miniature Kong ascends, carrying the miniature girl.

"Buz" Gibson animated Kong's climb up the Empire State Building, wiring the model into position with each step of the ascent up a ladder of dowels. Kong was positioned on the side of the real edifice in two scenes and on a miniature building by means of the blue-backing process.

TAKE TO THE AIR

The four Navy biplanes and their pilots were obtained from Floyd Bennett Field. Schoedsack contributed \$100 to the Officers' Mess fund and the pilots were detailed "... to cooperate with the producer of *Kong* in the making of certain scenes involving Naval aircraft in flight over New York City."

The biplanes were basic training craft, Curtiss O2C-2 and Navy NY models. They were photographed flying in formation, peeling off and diving at their imaginary target, then looping and attacking from the other direction. Twenty-eight scenes of the genuine aircraft were intercut with scenes filmed in miniature and in process. The commander of the flight was killed in a crash only a few weeks after he led the attack on the imaginary target.

The cityscapes seen behind Kong as he perches on the miniature mooring mast were painted in three planes of depth by the Larrinaga brothers and Crabbe. The illusion is far superior to that achieved in some test shots wherein a projected photographic background was used. The glass paintings and backing were unusually large in this instance. This was necessary for the staging of an unusual effect in which Kong is seen as though through the eyes of the pilots of the attacking aircraft. The camera was made to "dive" toward the madly gesticulating monster by being animated down a long wooden ramp.

The tracking ramp was about twenty-four feet long, making possible the diving approach.

The illusion of aircraft swooping around the building was difficult to achieve because of the forced perspective of the set. This made the use of model aircraft of various sizes necessary, each scale being chosen to represent a different distance. The aircraft ranged in size from four inches up to about fifteen inches in wingspan. It was also necessary to calculate the speed at which the airplanes would appear to be moving at various simu-

MOVISCOP LAMPS ONLY \$2.50

F & B/Ceco and General Electric Company announce the new American-made low-cost replacement lamp for the Zeiss Moviscop 16mm film viewer.

Available immediately from stock at F & B/Ceco, New York and Hollywood. No need to wait for long overdue foreign deliveries of high-priced lamps.

F & B/Ceco — GE lamps are made to order. For Moviscop — same as the foreign-made lamp — no sockets or wiring to change.

Order from

F & B/Ceco, New York F & B/Ceco, California
315 W. 43rd Street 7051 Santa Monica Blvd.
New York, N.Y. 10036 Hollywood, CA 90038
212/586-1420 213/466-9361

R-2 Reflex Auto- COLLIMATOR

Focus Testing Equipment is made by
RICHTER CINE EQUIPMENT, ESSEX, N.Y. 12936
for people who care about image quality.
Cost? Less than one good lens or
one out-of-focus scene.

WANTED Ambitious Film Makers

Amazing new report describes
how one-man operation
has grossed \$150,000 a year
producing sponsored films.

Free letter with complete details.

D.H. Vowell, P.O. Box 4891
North Hollywood, Ca. 91607

durable



CIRO

self-perforating
frame-line tape

SPLICERS AND TAPE

35mm,
16mm,
8mm

NEW
tape
bridge



Free Brochure?

6820 Romaine St., Hollywood
Calif. 90038. (213) 466-3591

CIRO

EQUIPMENT CORPORATION



SYLVANIA SUN GUN®

Portable Pro Movie Light
for All Film - Tape - ENG
One-hour full recharge · Fingertip
zoom, on-off · Camera-mounted or
hand-held · Up to 50 minutes shoot-
ing time · 150/250 w. tungsten halo-
gen · 15,000 c.pwr. spot · 3½ lbs.
in use · Models from (list) \$157 50

Nationwide service for over 25 years.
Same-day shipment anywhere in US.
Rush delivery in Manhattan.

(212) JUDSON 6-1620

BARBIZON ELECTRIC

426 W. 55, NYC 10019

lated distances from the camera. The speed was regulated by the distance traversed with each frame exposed, i.e., if a four-inch model were moved in steps of one-quarter of an inch, a twelve-inch model would be advanced in three-quarter-inch steps, for example.

The airplanes were suspended on hair-thin piano wire stretched tightly between pulleys situated outside of camera range. The wires had to be kept taut because piano wire "kinks" if tautness is not maintained. The models moved *with* the wires rather than *along* them, the wires being weighted at the forward end and released from the other end in carefully controlled steps. To facilitate accuracy in measuring increments of movement, a hook at the control end was engaged in the mesh of quarter-inch hardware cloth (the galvanized steel wire screen used in small animal cages) with each step forward. This method was also used in animating birds in the jungle scenes.

The scene in which an airplane crashes down the face of the Empire State building is a composite. As the burning model was dropped from a scaffolding past a blue backing, it was combined in the camera with a previously-made shot of the building. In this and most of the other scenes a miniature building was used, but the genuine building appears briefly in two scenes as the airplanes approach.

Fay Wray appears on a ledge of the mooring mast via miniature projection. An animated dummy substitutes for her when Kong holds her in his hand. She is also seen in the full-scale hand against a vertigo-producing process shot of the city.

During his New York trip, Schoed-sack secured details and measurements of the pinnacle of the building to guide the art department in constructing an actual-size replica. The large prop was built on a sound stage and, by midsummer of 1932, was ready for use in filming close-ups of Miss Wray and the scenes in which Armstrong and Cabot hurry to her rescue.

A highly dramatic version of Kong's fall from the building was filmed in composite with the body hurtling away from the camera toward the street nearly a thousand feet below. Unfortunately, the scene was spoiled by a "phantom image" effect — the building showed dimly through Kong's body. It was decided to use a more conventional view in which a loosely jointed dummy would plunge down the profile of the building. Because the scale model of a 102-story building was necessarily small, the problem of camera speed appeared insuperable.

CINE- PRO

461-4794



Call Carl
Porcello:

Ask us for a copy of our rental catalog

35mm and 16mm

**CAMERAS, LIGHTING
AND
GRIP EQUIPMENT:
RENTALS,
SALES AND SERVICE**

1037 N. Sycamore Avenue
Hollywood, Calif. 90038

CINE-PRO
CINE PRODUCTION EQUIPMENT INC.
(213) 461-4794

CRAMER *Continuous* Automatic FILM PROCESSOR

THEY SPEAK FOR THEMSELVES —

"I would like to thank you for making a fine piece of machinery. Our MARK VII has been working great! We run an average of 200 feet of color film a day . . . and every inch of it has been perfect . . . and the price, about 1.53¢ per foot . . . it is nice to know that the "Cramer" has paid for itself in the first year of operation in the money it saved in chemicals alone."

Rick Dunn, KTVQ-2, Billings, Montana



H.G. CRAMER CO.

ROUTE 3, BOX 24A
SARASOTA, FLORIDA 33580
TELEPHONE: 813/355-4470

Your timing couldn't be better.

electronic digital stopwatch

Ideal for screening room use. Brilliant LED readout can be seen instantly in the dark and eliminates common stopwatch guesswork. Solid-state accuracy reads to 1/10th of a second. Absolutely noiseless. Palm size. No moving parts. Unbreakable case. 1 year warrantee. Supplied complete with 3 pen light batteries, neck strap and instructions.

\$49⁹⁵

Postpaid



Leather Carrying
Case \$3.95

Send check with order and receive FREE Reddy-Eddy. Converts seconds to film footage and frames. Value \$5.00

Dealer Inquiries Invited

F&B CECO
THE RENTAL SPECIALISTS

SALES - SOS DIVISION

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

Phone Toll Free (800) 223-5829. In New York State Phone
Collect (212) 586-1420

Careful calculations indicated that the proper degree of slow-motion required to make the fall appear sufficiently ponderous was beyond the capability of the high-speed cameras being produced at that time.

A special mounting was built to hold a Bell and Howell camera and a drive motor that were connected with a rubber hose. The plan was for the rubber hose to shear off in case the camera jammed. The set was flooded with blinding light, which was necessary to get an exposure at an abnormally high shutter speed. The motor was revved to its maximum possibility, exposing the frames of film at more than eight times the normal speed. The camera screamed as though in agony as the technicians wondered if it might be torn apart under the unnatural stresses to which it was being subjected. The dummy toppled from its perch — and the film stuck. The rubber hose failed to shear and, before switches could be thrown, the film accordioned in all the gates. Several camera gates were sprung and the film was crammed in so tightly that the cameramen had to cut it out of the mechanism bit by bit with a pen knife. Several days later the camera was again ready for operation and, after a few tests, the scene was successfully filmed.

In the final scene the crushed body of Kong is viewed by spectators when Armstrong appears and makes the famous closing speech. The head, arm and upper torso of the fallen giant lie in the foreground (one of the eighteen-inch models) and the crowd is seen beyond (in miniature projection). The effect is splendidly tragic.

SOUND AND MUSIC

Murray Spivack, RKO's thirty-one-year-old director of sound effects, had prepared on July 19, 1932, a cost estimate for his department's contributions to Production 601.

All sound effects were added after filming was completed, including Fay Wray's celebrated screams, which were recorded in one session and dubbed in where they were needed.

The creation of a voice for Kong was a unique task because nothing like it had been attempted before. The sound department had amassed a library of sounds made by living animals comprising about 500,000 feet of roars, barks, growls, snarls and hisses. Spivack knew that any of these sounds would be too familiar as well as too brief for a monster of Kong's proportions. Even an elephant's roar lasts only eight or nine seconds, whereas Kong was shown silently roaring for as

WE BUY Film Stock

Will Consider All 16/35mm Types

Sealed, Opened and Ends

TOP CASH

PLUS 50% OF SHIPPING

RAFIQUE (212) 473-5851
814 BROADWAY, NEW YORK, N.Y. 10003

BILL KING Editorial Services	Film KEM 8-plate Universal Editing Console	Video-tape In-House Spectra-Vision Electronic Editor	18 West 45th St. Room 619 New York, N.Y. 10036 Tel. (212) 986-5707
--	---	--	---

EDITING CONSOLES

2 picture, 3 sound

Twenty-Fourth Frame
p.o. box 539, Becksburg, Va. 24060 (703) 544-7566

The birds & the bees.

WILDLIFE STOCK FOOTAGE

Over 300,000 feet of great close-ups & slow-motion action scenes from Africa - North America at far less cost than sending a cameraman afield. Call or write:

Borden Productions, Inc.
Concord, Massachusetts 01742
617/369-5030

OPTIFLEX

Offering a full range of quality optical effects in 16mm and Super 8

Optical Zooms
Freeze Frames
Special Effects
Frame Line Corrections
Blow-Ups and Reductions
18 and 24 Frame Conversions

1308 Cahuenga Boulevard
Hollywood, California 90028
telephone 213 • 469-8387

readily available



PROTECT YOUR MOVIE FILMS

JACK'S NU-LIFE FILM CLEANER & PROTECTOR

NO HARMFUL VAPORS • NO CHEMICAL ODORS
Professional laboratories, private collectors, rental libraries, film distributors and those who can't afford to take chances with their valuable films all use THE WORLD'S FINEST FILM CLEANER AND PROTECTOR ever formulated. One application will restore pliability, remove the grime and residue that tends to scratch film and wear projector parts. A little goes a long way, used sparingly a 16 oz. can should last the average film buff a FULL YEAR! 16 OUNCE CAN, \$10.00 — GALLON, \$38.00 PPD.

PROJECTOR BELTS FABRIC, COIL, PLASTIC FOR ALL MAKES & MODELS. JUST SEND US YOUR OLD BELT OR MAKE & MODEL NUMBERS AND WE WILL SHIP C.O.D. AT WHOLESALE PRICES. **16MM EASY-TO-READ PROJECTION CHART ONLY \$2.50** .. SHOWS LENS SIZES AND "F" STOPS, PICTURE SIZE CHART, LENS PROJECTION CHART. INDISPENSABLE FOR SETTING UP SCREEN AND EQUIPMENT AT DIFFERENT LOCATIONS.

8 & 16MM PROJECTOR OIL ONLY \$1.98 PROTECT YOUR INVESTMENT. THIS OIL IS DESIGNED TO STAND UP UNDER THE HIGH TEMPERATURES OF PROJECTION TO GIVE LONG LIFE AND QUIET RUNNING TO YOUR MACHINE.

SAVE 100's OF DOLLARS ON PROJECTION LAMPS

HOW WOULD YOU LIKE TO GET UP TO 400 HOURS FROM YOUR 8 OR 16MM PROJECTION LAMPS?

YOU CAN WITH "LAMP SAVER"!

By using this electronic kit you can extend the life of your lamps way beyond their normal life expectancy and save time and money on replacements. Never wears out, easy to install. State projector, model and lamp when ordering. Satisfaction guaranteed. Price Postpaid \$20.00

SEND CHECK OR MONEY ORDER AND ANY ITEM WILL BE SENT POSTPAID WITH FULL GUARANTEE.

JACK LOMBARDO THEATRE SUPPLY

6520-B Selma Ave.

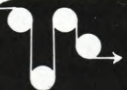
Hollywood Calif. 90028

For Professional Equipment in
PHILADELPHIA,

it's

O. H. HIRT, INC.

39 N. 11th St. · Phila, Pa 19107
(215)629-8560



**FilmLab
SERVICE, INC.**

FULL SERVICE 16mm. COLOR
LABORATORY

- PROCESSING—ECO—EF—ECN II
- ADDITIVE COLOR PRINTING
- EKTACHROME SOUND PRINTS
- ADDITIVE LIQUID GATE PRINTING
- INTERNEGATIVE—CRI
- EASTMAN COLOR PRINT
- EDITING—SOUND SERVICES
- FILMSTOCK—SUPPLIES

SEND FOR COMPLETE INFORMATION
ON SERVICES

(216) 881-4510
4117 Prospect Ave.
Cleveland, Ohio 44103

SEAVISION PRODUCTIONS

ABOVE THE SEA UNDER THE SEA

Complete Production

&
Post Production

JOSEPH THOMPSON
714-297-0730

CHUCK NICKLIN
714-272-1120

P.O. BOX 82672

SAN DIEGO, CALIF. 92138



FILMING FACILITIES

ASIAN FILMS

72, JANPATH, N. DELHI-1

Cable : Moviphoto,

New Delhi (India);

Telephone: 44040

long as thirty seconds at a time.

"I went to the Selig Zoo and arranged to record some lion and tiger roars at feeding time," Spivack recalls. "The handlers would make gestures as though they were going to take the food away from them and we got some pretty wild sounds. Then I took some of these roars back to the studio and put them together and played them backward. I slowed them down, sort of like playing a 78 r.p.m. record at 33, until the tone was lowered one octave, then I re-recorded it. From this we took the peaks and pieced them together. We had to put several of these together in turn to sustain the sound until Kong shut his mouth, because Kong's roars were many times longer than those of any living animal. Then we added a sound tail to the end so it would die down naturally instead of coming to an abrupt stop. That's how I conceived the roar of Kong.

"For the screeches of the tyrannosaurus I made most of the sounds with my mouth and then slowed the track down," Spivack says. "Most of the animal cries were made this way. The pterodactyl squawks were those of some bird — I forget which kind — which were slowed 'way down for depth. Almost all of our animal sounds were slowed down because we wanted a 'big' sound."

The heavy breathing of the monsters was sometimes simulated by use of a bellows. Compressed air and unusual noises such as a panther's purr were combined in certain instances with the voice of Spivack or of his assistant, Walter G. Elliott. The bellowing of the triceratops was simulated by grunting and growling through a double gourd. The death-rattle of the dying tyrannosaurus was recorded as Elliott, with a mouthful of water, gurgled through a megaphone.

"The sound of Kong beating his breast proved to be one of our most difficult problems," Spivack says. "I simulated that by hitting Elliott on the chest with a tympan-stick while an assistant held a microphone to Elliott's back. Kong's footsteps were made by walking plumber's friends covered with sponge rubber across gravel and recording the sound with plenty of bass.

"We had trouble with gunshots in those days because the loud noise would sort of 'paralyze' the mike. A lot of sound men had to simulate them with slapsticks. I discovered I could record real shots by using a .22 bullet and removing half of the powder. In *Kong*, the rifle shots are real."

"When we were doing the train sequence I had such a confusion of sounds the noise was terrific. When

FOBA TRIPOD

Selected for use in filming
the 21st Olympiad at Montreal



The Foba tripod is an all-metal professional motion picture tripod with a Pro Jr. flat-top plate which accepts Pro Jr., O'Conner C and 50, Miller F and Pro heads. Made in Switzerland by precision craftsmen, the Foba features unique tubular adjustable legs which allow the tripod to be used in standard or baby positions. Foba comes complete with triangle-type leg locks and elevating riser plate. Maximum height is 62"; with riser, 73". Minimum height, 18½". Weight, 16 lbs.

FEATURES:

- Adjustable riser plate. • Patented individual adjustable legs.
- Triangle-type leg locks. • Individual or simultaneous adjusting of legs. • Modularly constructed for easy repair or parts replacement. • Weatherproof. • Combination rubber and spiked tipped legs. • Flexible leg adjustment for shooting of uneven terrain.

Price: **\$350.00**

Available Exclusively From:

alan gordon enterprises inc.

1430 N. Cahuenga Blvd. Hollywood, Calif. 90028

(213) 466-3561 / (213) 985-5500

TWX: 910-321-4526 • Cable: GORDENT



Portland,
Oregon—City
of Roses, Elephants,
Mt.Hood and Frank Hood

and home of dependable
Teknifilm^{INC}

16mm film laboratory—
Same day processing and
work printing. B/W and color.
ECO, EF, ECN-II.
Sound transfers and mixing.
High quality electro-prints.
Inter-negs, CRIs.

Color positive prints.

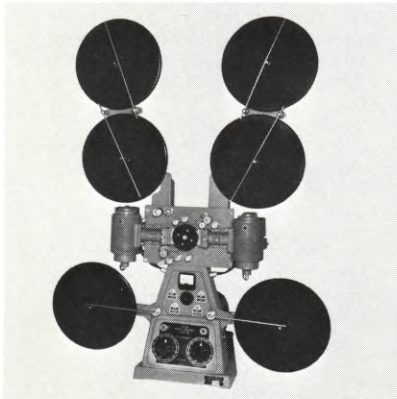
1923 N.W. KEARNEY
PORTLAND, ORE. 97209
503/224-3835

For careful, personal service
check with Arlan Evensen
or Frank Hood.

Arlan E. Evensen
Frank Hood



**Uhler Contact
16mm Printer**



Model No. CCJ-16

Price: \$2,995.00 f.o.b. Detroit

Color or black and white prints, single or double system sound and picture, from one negative or separate sound and picture to positive 16mm film. Registration at aperture with 34-tooth sprocket, sound and picture gates on either side, with highly polished s.s. pressure plates relieved in the picture area. Capacity: 1200-ft. negative, positive and sound track films. Filter holder for gelatin filters to print color film. Light Control: Dual semi-automatic, one is set a scene in advance of the other and the light changes automatically. Motor: Constant speed, 1/4 H.P. 115 V 60 Hz (unless otherwise requested). Printing Speed: 3600 feet per hour. Size: 18 x 34 x 46 inches, assembled. Weight: net 80 lbs, gross 100.

Deposit 25% with domestic order
Letter of credit in local Bank on Foreign

UHLER CINE MACHINE CO.

15762 Wyoming Ave.
Detroit, Mich. 48238

Phone (313) 861-4663 Cable: UHLCIMA

Cooper saw it he said, 'Murray, there's a car going by; he should honk his horn.' We only had three tracks at the studio then — one for dialogue, one for music and one for effects — which is pretty primitive when you consider that I had 77 channels in the parade sequence of *Hello, Dolly!* Our equipment was so limited that if we needed additional sounds we had to go through another generation of recording. I told him it would lower the quality of the recording. He got mad. I said, 'Be sensible, Merian; you couldn't hear a car horn in all that noise if we did it.' He insisted he wanted it. Pretty soon we were shouting at each other, and right in the worst part of it I started to laugh. He looked surprised and asked, 'What are you laughing at?' I told him, 'Do you know that when you get mad your forehead turns a bright red?' He started laughing then and finally he said, 'Okay, have it your way,' and left."

Working closely with the musical director, Spivack developed an unusual "first" for *Kong* — the harmonizing of sound effects with music. After the score had been prepared, the sound effects were altered in pitch to conform to the music. This unprecedented technique made bearable the almost uninterrupted cacophony of roars, shrieks, crashes and thunderous music heard during the last two-thirds of the movie. Murray Spivack spared millions of moviegoers from headaches when he conceived this idea.

RKO President B. B. Kahane had his doubts about *Kong* and was sceptical that the public would accept an animated ape as a film hero. "We've spent so much money in the year-and-a-half we've worked on it, so please don't spend any additional money on music," he told Steiner, instructing him to put together some music from existing tracks. Steiner was disappointed, because he saw tremendous musical possibilities in *Kong*. Cooper, realizing that proper scoring would lend a greater semblance of life to the animation, told Steiner to get an original score under way. "Don't worry about the cost because I'll pay for the orchestra or any extra charges," Cooper said. Steiner set to work with enthusiasm and the close collaboration of Cooper and Spivack.

The music is built largely upon three motifs: "King Kong", a descending three-note figure that is the leitmotif of the title character; "Jungle Dance", which symbolizes the natives of Skull Island; and "Stolen Love", a plaintive melody used to suggest the "beauty and the beast" longing of Kong for Ann. These themes are paraphrased and deployed throughout the film in

D
R

**HOLLYWOOD'S OLDEST
FILM SCHOOL**
NOW ACCEPTING ENROLLMENTS
FOR OUR NEXT

MOTION PICTURE COURSE

CAMERAS • SOUND RECORDING
LIGHTING • EDITING • EFFECTS
COMPOSITION • SCRIPTING • ETC.

Two Week Courses— Evening Classes

**DANNY ROUZER
STUDIO**

7022 Melrose Avenue, Hollywood, California 90038
Request Brochure HC (213) 936-2494

**CALL A PROFESSIONAL
Cine-Craft, Inc.**

A full service laboratory for
16mm, Super 8, Regular 8
Any quantity Best prices
8764 Beverly Blvd., Hollywood, Calif. 90048
(213) 652-7357
Write for free brochure

**FOR THE FINEST
REFLEX BNC
SEE CSC**

**The PRETTIEST
FILM FOR SALE**

Why not cut your TV commercial around something incredibly beautiful — saving money and headaches in the process! From the aerial photographers of "Jonathan Livingston Seagull" comes the "Prettiest Pictures You'll Ever See!"

HANG GLIDING SURFING
DUNE BUGGIES SEAGULLS
AIRPLANES BALLOONS
INCREDIBLE AERIAL SCENICS
and MORE Ring (714) 494-1055
Box 205, So Laguna, CA 92677

**MACGILLIVRAY-
FREEMAN FILMS**

consistent

MUSIC MOODS FOR FILM

This record is a comprehensive MOOD MUSIC LIBRARY, designed specifically to meet the needs of low budget feature films, independent film makers, film classes, and any kind of production where commercially licensed music is required.

Almost every basic film mood is covered in one comprehensive record and contains electronic music, multiple guitars, solo flutes, rock, jazz, etc. 18 separate theme moods are included.

Price of \$49.95 grants ownership of the record itself, and an unlimited license for the commercial use of the sounds contained on it.

MELAINE PRODUCTIONS
114 WEST MT. PLEASANT AVE.
LIVINGSTON, NEW JERSEY 07039

WESTHEIMER Company

titles opticals inserts

Joseph Westheimer, A.S.C.

TITLES, TRAILERS, INSERTS AND OPTICAL EFFECTS
FOR MOTION PICTURES AND TELEVISION
HO 6-8271

736 Seward St., Hollywood, Calif. 90038

COMPLETE LABORATORY
SERVICES & SUPPLIES

**LEO DINER
FILMS, INC.**

332-350 Golden Gate Ave.
San Francisco, CA 94102
(415) 775-3664

16MM / SUPER 8

BOLEX ACCESSORIES

- 24-Frame Sync. Camera motor—115V
- Var. Speed Battery Camera motor—24V
- 400-ft. Magazine w/400' counter in camera
- Intermittent—Range 1½ sec. to 36 min.
- Animation motor for new single-frame shaft

Write for Bolex Accessory Catalog

STEVENS ENGINEERING CO.
P.O. BOX 1605,
NEWPORT BEACH, CA 92663

PROFESSIONAL LAB SERVICES

Sound transfers	Workprints	Film & supplies
Custom processing	Internegatives	Movie equipment
Special Effects in Super-8	Blow-up to 16mm	Universal movie supplies
Super-8 to 16mm transfer	Reduction Prints	Once-per frame switches
Professional Super-8 titles	Release Prints	Super-8 Sound movie clippers
Professional Sound Tracks	Freeze Frames	Super-8 Sync-Sound Headquarters
Laminated Magnetic Striping		

Send for free brochure
Tel: [415] 863-4209



SUPER-8 STUDIOS
220 PIERCE STREET - No. 7
SAN FRANCISCO, CA. 94117

numerous variations. Among other compositions are "The Forgotten Island", "A Boat in the Fog" and "Sea at Night", all of which have about them a suggestion of Debussy tone poems. "The Sailors", introduced as a march as the men plod through the jungle, is developed as exciting chase music during several episodes. "Aboriginal Sacrifice Dance", scored for orchestra and male chorus, is played during the first native ceremony. Kong's arrival on Broadway is heralded by the "King Kong March", which is done in the style of a theatrical overture.

It is in the delineation of the complex emotions and personality of Kong, himself, that the music achieves its greatest expressiveness. His savage brutality is accented by brassy, dissonant variations on the King Kong theme. The "Stolen Love" motif subtly underlines the tragic side of his nature, portraying his loneliness and the painful bewilderment inherent in unrequited love. This theme is developed to its apogee of power and finally resolved in the finale as Kong mutely bids Ann farewell and gives himself up to the sacrifice that was, from the beginning, inevitable. It would be difficult to overestimate Steiner's share in creating a classic tragic figure from what could have been just another monster.

The late Oscar Levant, who was employed by RKO at the time *King Kong* was produced, said of this score:


"Full of weird chords, strident background noises, rumblings and heavings, it was one of the most enthusiastically written scores ever to be composed in Hollywood. Indeed, it was always my feeling that it should have been advertised as a concert of Steiner's music with accompanying pictures on the screen."

CUTTING HURTS

Neither Cooper nor his superiors were satisfied with the fourteen-reel version. It was too long to suit the New York office as there was at that time a virtual tabu on features running more than one hundred minutes. There were too many lapses of pace to please Cooper, who joined Ted Cheesman in the cutting room and, after much sweating and cursing, emerged with a feature of eleven reels. Even the credit titles were shortened considerably before the film was considered ready for public view. The final cut consists of 846 scenes, eleven art titles, twenty-three dissolves and nine in-out fades.

For Cooper was right, of course. He set his jaw and cut his own ideas with a ruthlessness that must have given him nightmares. In doing this he delivered to the public a movie that holds the

WESTERN



Cine

the right
place for
all your
lab work!

**EASTMAN COLOR
INTER-NEGATIVE
and POSITIVE**
16mm & 35mm

**PROCESSING
ECN II, ECO, EF, CRI**
16mm & 35mm

**FULL IMMERSION
WET GATE
PRINTING**

- Video Analyzing
- Sound Recording and Mixing
- Optical Printing
- Titling
- Super 8mm Reduction Printing
- Filmstrip

*We are a quality-oriented lab...
Computerized printing...
Contact our producers' service
specialists...
We do the job right!*



WESTERN Cine

DENVER
312 So. Pearl St. - Denver, Colo. 80209
Cine Craft
8764 Beverly Blvd. - Hollywood, Calif. 90048

Editing Facilities Equipment Rental

Kems, Steenbecks &
Moviolas

**PREVIEW
THEATRE**
INC.

1600 BROADWAY, NEW YORK, N.Y. 10019
(212) 246-0865

When you say one lab processes your film "better" than another, you're really saying that somebody isn't doing their job, because in the lab business there is only one way to process, edit, conform, print, transfer, mix, or post flash — the right way. At CPT FILM LAB, your job is done the right way the first time which means we have the time to concentrate on service, on the personal touch. When you call or stop by CPT, you talk to the people who actually handle your job. We deal with people, their projects, and their problems.

Our staff is composed of lab professionals — but we've also spent our share of hours behind the cameras so we can speak your language.

If service and quality are what you're looking for in a 16mm lab, write or call for your copy of our new catalog/price list.

— phone —
919/688-7265

CPT FILM LAB
639 WELLONS VILLAGE
DURHAM, NC 27703

ARRIFLEX
NAGRA



QUARTZCOLOR IANIRO
MULTI-TRACK MAGNETICS INC.
BRAUN ELECTRIC CANADA LTD.
3269 American Dr., Mississauga, Ontario, Canada
325 Boul. Montpellier, Ville St. Laurent, Québec
67 E. 5th Ave., Vancouver, B.C.

BEHIND-THE-LENS FILTER HOLDERS

For Angenieux lenses on all Arriflex 16, Eclair NPR and CM3 cameras, and for the 25-250 Angenieux for 35 mm — in kits with gel cutter, tweezers, spare gel container and other convenience features.

Ask for brochures

CUSTOM PHOTOGRAPHICS

P. O. Box 25007, Portland, Oregon 97225 • 503-292-5569

attention during every one of its scenes, each second of its one-hundred minutes. It is one of the few films that builds its suspense deliberately and then holds it until the last fade-out because there is no useless action, no waste of words, no side-plots to detract from the main stream of the story it tells — a show without fat or padding. Cooper's skill as an editor is no less remarkable than any of his other accomplishments.

EPILOGUE

Although it is the most popular of the films made by the Cooper-Schoedsack team, *King Kong* is but one of many highlights in long and exciting careers. There followed many more films, flying adventures in another world war, travels to faraway lands and enough excitement for a hundred ordinary lifetimes. The partnership ended on the morning of April 21, 1973, with the death of Brigadier-General Merian Cooper at the age of seventy-eight, only a few hours after the passing of his old friend, Robert Armstrong. It would take a very large book to tell the Cooper-Schoedsack story in adequate terms.

O'Brien, although dogged by personal and financial problems to the last, continued to contribute his unique skills to the movie industry. There were many disappointments and unrealized projects. He was animating the complex miniatures for *It's a Mad, Mad, Mad, Mad World* for Lin Dunn when a heart attack ended his life at the age of seventy-six on November 8, 1962.

As for the technical staff that brought Cooper's wildest dream to the screen, there are a few who still work in what remains of the film industry. Others have retired or gone into different fields of work. Many are no longer living. For all of them *King Kong* was a unique experience, expressed eloquently in the words of Carroll Shepphird:

"I've always been glad I was allowed to be a part of that wonderful picture."

2 GREAT CINE BOOKS

By Joseph V. Mascelli, A.S.C.

THE FIVE C'S OF CINEMATOGRAPHY

THE CLASSIC CINE TEXT

SIXTH BIG PRINTING \$15 Postpaid

MASCELLI'S CINE WORKBOOK

Up-to-Date Text; Cine Tools, Tables
& Calculators in BOTH Feet & Metric

INCREDIBLE VALUE \$20 Postpaid

Calif. add 6% Tax. Foreign add \$1 per book.

10-DAY TRIAL OFFER! FREE BROCHURES!

CINE/GRATIC PUBLICATIONS
P.O. BOX 430 HOLLYWOOD, CALIF. 90028

BLOW-UP

HIGH QUALITY
35MM NEGATIVES
FROM YOUR 16MM ORIGINALS

Stock Shots Enlarged to Match-in with
your 35mm Negative

Complete Pictures Transferred to 35mm

Call—Adrian at (213) 463-3178

CINESERVICE, INC.

1459 North Seward Street
Hollywood, California 90028

SOUND BARNEYS

for most
16mm and 35mm cameras

alan gordon enterprises inc.

1430 N. CAHUENGA BLVD.
HOLLYWOOD, CALIF. 90028
Telephone: (213) 466-3561

Let the PRO'S tell you How to Buy a
16mm Sound Projector.

FREE

We will send you the article which appeared in
FILMMAKERS NEWSLETTER on Buying a "Used Pro-
jector."

HECHT—Box 443—Ellenville, N.Y. 12428

made for the bright lights

Lee Filters — known and acknowledged
the world over as the finest high-quality
range of cinematographic and
theatrical lighting filters.

Long lasting, consistent in 46 colors,
always readily available, Lee
offers a versatile, wide range
plus the technical back-up to match.
Lee Filters — made for the bright lights.

Contact

M. Sheppard, Belden Communications Inc.
25 West 45th Street, New York, N.Y. 10036
(212) 730-0172

Bud McKinny, Preferred Distributing Co.,
1266 North Western Avenue, Los Angeles, California 90029.
Tel: (213) 461-4201

Sample books on request



OXBERRY

Division of Richmark Camera Service, Inc.

Tel. [212] 585-0730

Cable OXBERRY, N.Y.

516 TIMPSON PL., BRONX, N.Y. 10455

OPTICAL
PRINTERS

LIQUID GATE

ANIMATION
& FILMSTRIP
EQUIPMENT

AUTOMATIC DAYLIGHT PROCESSOR

- Processes up to 200 Ft.
- Super 8 to 105mm
- Movie—X-Ray • Microfilm
- Motor Driven—Portable
- Film Dryers Available
- Guaranteed

Write for Free Literature
OUR 28th YEAR

Micro Record Corp.

487-14 South Ave., Beacon, N.Y. 12508



BUY — SELL — SWAP HERE

STUDIO PRODUCTION EQUIPMENT

BOLEX H16 Reflex, Varlo Switar EE 2.5, 18-86mm, Reflex, 1.9-10mm and 1.4-25mm Cinors, custom right-angle "sneak" lens, fitted Tourister case, Unimotor and battery case, matte box, \$850. Bolex S-221 magnetic-optical projector, \$850 (212) 866-4837.

ARRIFLEX SB, 10-100 zoom, V/S motor, case etc. NEW, asking \$4,500. Nagra III, ATN etc. Excellent Condition, \$1,200. (416) 964-7415.

2 BNC CAMERAS, BRAND NEW — NEVER USED. Rackover Type #362, 364. Complete outfits with 7 Cooke speed panchro lenses, 18mm 25mm (series 3) 32, 40, 50, 75, 100mm (series 2). 4-1000 ft. mags, 110v, 220v and 96v multi-duty motors, viewfinder with cams, sunshade, mattebox, cases, cables, filter holders. All in original condition. Today's value well over \$30,000. each. Cameras available for inspection in New York. Please mail an offer. Box #1798.

PHOTOSONIC Actionmaster 500 camera s/n 33, with 400-ft. magazine, variable shutter, IMC power supply, Halliburton case, \$6400. HOWARD BASS, Box 81799, College, AK 99708 (907) 452-2906.

TRADE Auricon 1200 w/1200 mag., finder and flat door w/Auricon tripod for Nagra III w/ATN unit or sell outright. (312) 439-4040.

FOR SALE: F&B/Ceco Pro Jr. fluid head and Pro Jr. legs, w/ball-leveling, \$300. Pro Jr. baby legs w/ball-leveling, \$90. Zoomar 500mm lens, F5.6, Arri mount, \$225. Rivas diagonal splicer, 16mm, \$120. Rivas straight-cut splicer, 19mm, \$90. Advent noise reduction unit, model 101, \$60. Da-lite screen, 40x40, \$12. 400 ft. Arriflex magazine (15S), \$70. Wahl cordless soldering gun, model 7500, \$12. HOWARD BASS, Box 81799, College, AK 99708. (907) 452-2906.

FOR SALE: 16mm Moviola UL20-S — 16mm Siemens Interlock projector, Both Fair Condition, \$1000. ea. 16mm Arriflex BL, 12-120 Angenieux, 2-400 ft. mags, Halliburton case, 2-Bauer Batteries, Excellent condition, \$7,500. 16mm Arriflex S/B, 12-120 Ang., 2-400 ft. mags, wild motor, Halliburton case, Excellent condition, \$4,500. (405) 348-0898.

35mm Eclair Camerette. Cooke Ser. II, 18, 25 & 50mm lenses, four 400' 35mm magazines, \$3,000. Aquaflex underwater housing, \$1000. Arriflex 35mm model 400 blimp w/Arri 110v sync motor, accessories and case, \$3000. Cine-60 plastic blimp for Arri 35mm, accessories and case, \$1,500. ROBERT YOUNG, 245 W. 55th St., NY, NY (212) 724-0209.

ECLAIR NPR with 2 magazine, Perfectone motor, Kinoptic eyepiece, 2 batteries, charger, either 12x120 or Zeiss 10x100. Camera mint condition. Overhauled last month. Trade for Steenbeck or similar editing machine plus \$. Or sell. Call: (617) 566-1569.

CINE PROCESSOR, Pako model 28 EK, 16 or 35mm, processes ME 4, E4, E6. Call Mr. Pike, (801) 328-3737.

16mm 12-120 PZ BEAULIEUS, projector, tripod, Uher shotgun, editing, extras. Film. \$5000 (305) 233-1703.

16mm color processor (Ektachrome) 30' FPM, Morse as converted, sacrifice \$2400. (602) 623-6797.

BELL & HOWELL model C 16/16-16/32mm printer with track head, Halogen lamphouse, fader, edge light, air-vacs, 3000 ft. feed and takeups, high speed reader, standard reader, tape punch, duplicator, verifier, power supplies, loop rack, \$32,000. Can be seen in operation, call (212) 489-9820.

ARRIFLEX 16M, 200' magazine, variable speed motor, 12-120 Angenieux lens, 7 volt battery with charger, power cable, aluminum Arri case, all perfect, \$10,605. New. \$6495 firm. (213) 274-8888.

FOR SALE: Dynalens S-038 as new \$4000. OPUS FILMS LTD., 63 East 82 Street, New York City 10028 (212) 879-1634.

MITCHELL NC like new, accessories, make offer, (213) 829-2132, 870-8661.

STUDIO PRODUCTION EQUIPMENT

CRYSTAL CLAPPERS. Crystal sync generator, pushbutton light/bloop startmark. Complete for Nagra-III, \$116.94 postpaid. With integral bloop oscillator for non-professional recorders, from \$124.70. TCS, 3227 49-SW, Seattle 98116.

FRENCH ECLAIR ACL, 9.5-95, three 200' magazines, new Cinema Products variable speed crystal motor, batteries, charger, \$7,500. BRAVERMAN PRODUCTIONS, 8961 Sunset Blvd., Los Angeles CA 90069 (213) 278-5444.

ECLAIR ACL two 400' magazines, one 200' magazine, 9.5-95 Angenieux zoom, two Eclair batteries (standard and quick-charge), glass filters and filter holder for lens, fitted Eclair soft case, complete package with on-year guarantee parts and labor from. O'DOHERTY TECHNOLOGY INC., P.O. Box 275, Port Jefferson Station, NY 11776. (516) 331-1395. West Coast inspection possible. \$6350.

LAB EQUIPMENT — B&H Model "J" printer, power supply and accessories. Perfect condition. PRINTING HOUSE, 4272 23rd St., San Francisco, CA 94114. (415) 282-0467.

MAGAZINE 16BL 400' mint condition, \$400. (212) 838-1861.

MITCHELL 35 standard. Ball-bearing model. Ultra precision registration. 2-144 fps. Never used, \$2600. Or will trade for 35 Arri. MORRISON, 2040A Garden Ln., Costa Mesa, CA (714) 548-7234 or 546-6677.

ARRI 16SB system, Baby Pro pod, fluid head, Canon 2.2 macrozoom, cases, etc. All Mint. Cost \$10,000 will take \$7,200. RAUL DA SILVA, 1400 East Ave. Rochester, NY 14610. (716) 442-1373.

LAMPS, 1000 W PAR 64 for Cine Queen or Maxi-Brute. 6 wide flood, 6 med. flood, 6 spots. Used less than 3 hours, \$300. (504) 241-3803.

ECLAIR ACL, 12/120 Angenieux, 2-200 ft. magazines, 2 batteries, case, \$5300. Arriflex "S", motor, 3 lenses, new battery, case, \$2100. Arrivox, power supply, Ni-Cad batteries, case, \$925. Auricon Pro-600, 17/85 lens, 4 magazines, galvanometer, ETC., tripod, cases, \$1150. Send for used equipment list. CINEMA SALES, INC., 338 So. Pearl St., Denver, CO 80209. (303) 777-7699.

BELL & HOWELL Model "J" printer, super hi-head, roller gate, perfect condition. YALE LAB, (213) 464-6181.

ECLAIR ACL, "Package", 2-200' mags, case, batteries, Angenieux 12-120 zoom, 10-25-50mm Schneider lenses, Cine-60 zoom motor, Miller Pro tripod and much more. In excellent condition, \$8,000. Call Beldev Duggal at DUGGAL COLOR PROJECTS, (212) 924-6363 (Make Offer).

ZEISS 10-100 for Arri S. Overhauled by Zeiss in Germany 9/76. \$1350 or b.o. (617) 354-4617.

SUPPLIES

BLACK LEADER, 16mm fresh stock processed to 4.0+, guaranteed. \$.024/ft min order 2000 ft. Complete lab services and supplies, 16mm & Super-8. LEO DINER FILMS INC., 350 Golden Gate Ave., San Francisco, 94102 (415) 775-3664.

SAVE YOUR FILMS! Do it yourself and save \$. Movie film cleaner and protector, incredible value — 1 pt. \$10. ppd. Bell & Howell 16mm kit and instructions to make EMM 50 hr lamp last 250 hrs, \$20 ppd. Jack LOMBARDO THEATRE SUPPLY (NO C.O.D.) 6520 Selma Ave., Hollywood, CA 90028.

GUILLotine 16mm frame line splicing tape, 20 rolls \$11.50 postpaid. ROLF JOHNSON, 1822 Madison Place, Brooklyn, NY 11229 (212) 375-0207.

RENTALS

1977 Rental catalog available production equipment at sensible prices. For more information on rentals, sales or service write: CINELEASE, INC., 209B Old Durham Road, Killingworth, CT 06417 or call (203) 663-2222.

KEM rentals in Hollywood. HORIZONTAL EDITING STUDIOS (213) 461-4643.

WANTED

WANT TO SELL YOUR EQUIPMENT? Call Fred Yates at Birns & Sawyer, Inc. We need all kinds of motion picture equipment — Nagra III recorders (any condition), lighting (any type), Angenieux zoom lenses, etc. Let us know what you have. We pay top prices. Call (213) 466-8211 or come in. BIRNS & SAWYER, INC., 1026 N. Highland Avenue, Hollywood, CA 90038.

IF YOU WANT TO SELL YOUR EQUIPMENT THIS SHOULD MAKE SENSE—

Place it on consignment with F&B/CECO — where hundreds of shoppers visit our New York and Hollywood showrooms every day. Our used equipment price lists are mailed to over 30,000 potential buyers. We'll get your price for it — and even arrange a cash advance if you require it. Remember, our sales total over \$6 million yearly — we sell more used equipment than any other dealer. In the East call Hy Roth in New York, (212) 586-1420. In the West, Call Bob Kaplan at (213) 466-9361. F&B/CECO, 315 W. 43rd St., New York, NY 10028 or 7051 Santa Monica, Hollywood, CA 90038.

OBsolete to you may be just the ticket to us. Non-profit corporation can use all manner of 16mm production, editing and sound equipment. Donations fully tax deductible. AMARGOSA OPERA HOUSE, INC., Death Valley Junction, CA 92328.

WANTED: Professional motion picture equipment, 16mm and 35mm, cameras, lenses, lights, sound, editing, projection, lab, for outright purchase or consignment. Supply complete technical description and price for immediate reply. Ted Lane, ALAN GORDON ENTERPRISES INC., 1430 Cahuenga, Hollywood, CA 90028, (213) 466-3561.

WANTED: Auricon Cinevoice cameras CM-72A, converted or unconverted, any condition. Best prices. Call (201) 427-1160 or (212) 594-2294.

WANTED: 16mm projector, 35mm interlock projector (small) Sony Videocassette model no. VO-1600. Call Cathy Megna, SCOLLARD PRODUCTIONS (416) 925-2181.

RAW STOCK FILM NEEDED. Highest cash paid for 16 or 35mm color negative or reversal film including any EF (7240) mag. stripe. FILMEX (film-brokers) (416) 964-7415 collect.

FILM STOCK, 16 and 35mm. Will consider all types. Sealed, opened & ends. RAFIQUE, 814 Broadway, New York, NY 10003. (212) 473-5851 collect.

CASH FOR FILM! Highest prices paid for 35mm and 16mm rawstock. FILMART, 353 South LaBrea Ave., Los Angeles, CA 90036. Call (213) 933-8296.

SERVICES AVAILABLE

CONSOLE editing table, 6-plate 16mm with supporting editing facilities. E. 52 St., NYC, most reasonable rates in town. (212) 838-1861.

B&H Filmos slotted w/2 holders, \$52.50. 3-day service. GORDON YODER, INC., 2911 Ladybird Lane, Dallas, TX 75220.

SLIDES FROM NEGATIVES. Any type 35mm color or black and white uncut negatives. Send developed full-length uncut 20/36 negative with \$3.50 + 57¢ postage and receive negative intact plus full set mounted slides. SPECIALISTS in prints from color slides. EKTACHROME — X-low cost film and processing. B.W. & COLOR FILM CO., 4679 Melrose Ave., Hollywood, CA 90029.

IN-HOUSE repairs of Bolex, Canon, Auricon, Bell & Howell, SS IIIs, CP-16 and table viewers. GORDON YODER, INC., 2911 Ladybird Lane, Dallas, TX 75220.

RON HAYES, Wildlife Photographer. Photographer of "Alaskan Safari" and "North Country" accepting any film assignments in Alaska. Wildlife stock footage available, 16mm RON HAYES, Box 1711, Anchorage, AK 99510. Phone (907) 272-0051.

CALL us for your "ODDBALL" service work. GORDON YODER, INC. (214) 357-3045.

SHOOTING IN CANADA? Complete 16mm production. 16/35 editing. Cameras, sound & lighting crews. Commercial, documentary and feature. CREATIVE ASSOCIATES, 133 — 10th Ave., SE, Calgary, Alberta. (403) 264-6242.

RATES: Ads set in lightface type 50¢ per word. Minimum ad, \$5.00. Text set in lightface capital letters (except 1st word and advertiser's name) 60¢ per word. Modified display format (text set in boldface type, capitals or upper and lower case) \$5.00 per line. Send copy with remittance to covepament to Editorial Office, American Cinematographer, P. O. Box 2230, Hollywood California 90028. Forms close 1st of month preceding date of issue.

MISCELLANEOUS

The Accessible Portapak Manual by Michael Goldberg is now available. \$10 hardcover, \$5 paperback from VIDEO INN, 261 Powell Street, Vancouver, Canada V6A 1G3.

T-SHIRTS FOR FILMMAKERS. Sixteen popular professional film equipment designs. Send for free brochure. ALAN GORDON ENTERPRISES INC., 1430 Cahuenga Blvd., Hollywood, CA 90028. Attn: Dept. TS.

FILM SYNDICATION for independent producers. If you have a suitable production, we'll turn it into money. For details, write WORLDWIDE SYNDICATION, 395 Main Street, Metuchen, NJ 08840.

For the first time in publication history! CINEMAGIC magazine brings to you the step-by-step method of constructing professional-style ball-and-socket animation armatures — till now a closely guarded secret of the pros. Plus: a step-by-step guide to creating foam rubber animation models; a photo-filled history of animators and animated films; an animation bibliography, a beautiful full-color cover, and more! Over 60 clear photographs illustrate the articles! Only \$2.00 per copy (foreign: \$3.00), or save by subscribing: \$6.00 for 4 issues. Ask for issue #8. Make checks payable to Cinemagic, and mail to: CINEMAGIC, Box 125, Perry Hall, MD 21128.

AMERICAN CINEMATOGRAPHER issues June 1963 thru Dec. 1976. Mint condition, \$350. GREG BRULL, 8853 Sunset Blvd., Hollywood, CA 90069.

DESERT BIGHORN SHEEP, over 2000' on 7252. MMI, 14410 E. Nelson, Industry, CA 91744. (213) 333-1744.

SITUATIONS AVAILABLE

FILM DEPARTMENT DIRECTOR. Manage, supervise and direct staff of seven to produce films and inserts. Degree plus production/management experience and knowledge of videotape requirements. Salary range: \$11,000-\$16,000. Position demands responsible, mature judgment and personnel skills. Send demo reel. MISSISSIPPI AUTHORITY FOR EDUCATIONAL TELEVISION, c/o Director of Programming, P.O. Drawer 1101, Jackson, Mississippi 39205. An Equal Opportunity Employer.

LTM, worldwide known lighting equipment company, seeks applicants for running a commercial branch in the New York and Los Angeles areas. Must show considerable initiative, have extensive knowledge of distribution procedures with dealers and already have had personal contacts with prospective utilizers in motion picture and television field. Applicants should send detailed list of professional experience and qualifications by air mail to LTM, 104 Boulevard Saint Denis 92400 COURBEVOIE, France.

CAMERA technician, professional motion picture equipment repair and service. Experience necessary. Call (213) 466-9361, Ext. 241.

SITUATION WANTED

NINE years experience in Television news and production. Salary secondary. Will relocate West, Northwest or New England. BRUCE JOHANSSON, 543 Bonnington Way, Gahanna, Ohio 43230 (614) 475-6426.

BEHIND THE SCENES

Continued from Page 84

ape over King Kong.

Answering an advertisement in the daily newspapers to come see the filming of Dino De Laurentiis' contemporary version of "KING KONG", they arrived in droves by bus, car, subway and on foot, lining up patiently outside the barricades three hours before the start of shooting, waiting to see one of the most memorable death scenes in movie history.

Only 5,000 New Yorkers were needed, but six times that number showed up to be in the background for Dwan's emotional farewell to her ardent, hairy pursuer. In size and numbers, it was the biggest night of movie-making for New York and a

fitting start for the city's Bicentennial summer, which was to include such other extravaganzas as Operation Sail and the Democratic National Convention.

Though the company had provided security guards, fulfilling its arrangement with the New York Port Authority, the crowd was more than they could handle if it decided to get rowdy. But director John Guillermin and his assistants discovered what others found in New York during the summer of 1976, a festive, congenial atmosphere.

In that one memorable night, those New Yorkers preformed beautifully for Guillermin, a sea of humanity swirling around the stricken monster, and this incredible moment was captured by the director who had three cameras panning the plaza.

Kong was brought to New York in ten separate pieces stored in three vans that traveled more than 900 miles a day to get him to the Big Apple on time for his swan song off the 107-story-high Trade Center.

Not everyone in the city was pleased by Kong's new location. Fans in favor of having Kong back at the Empire State Building protested his transfer by dressing up in ape suits and took to the observation deck carrying signs denouncing the monster's disloyalty to the older building.

It took 2,000 pounds of horse tails from Argentina to get Kong properly covered. Ten people in Hollywood working for 72-hours managed to sew 1,500 panels of horse hair into 300-yards of netting that wrapped around Kong's massive Styrofoam frame. The hair on Kong's chest and chin had to be punched into place, each strand individually, by hand.

An idea of the scope of the "KING KONG" caper in New York, beyond the height of the monster and the size of the nightly crowds, were the numbers of workers and equipment moved across the country in preparation for the New York filming. A thirty-member cast and crew was brought in from Los Angeles, as were army jeeps, command cars and ambulances. Hired in New York were 425 extras, many National Guard reservists, and Army, Navy and Marine recruiters to be used in the scene where Kong is trapped by a military force on the roof of the Trade Center.

The logistics of deploying this small army around New York were worked out in the production headquarters, located in the Sheraton Motor Lodge on 12th Avenue, by director Guillermin, producer De Laurentiis, executive in charge of production Jack Grossberg, and New York unit production mana-

ger George Goodman. Several months earlier, Grossberg had handled the negotiations for use of the Trade Center, reaching terms equitable to all sides.

The actors and production team arrived quietly enough early in June. They expected some attention to their arrival, but not what overwhelmed them at the Trade Center.

Responding to the newspaper advertisement, about 5,000 people did show up the first night. But with them came scores of newspaper reporters, television cameras and magazine writers. Kong stretched out on the plaza became the most photographed scene in New York for the next twenty-four hours, which induced the tremendous horde to show up the second night.

From the twelfth floor of the Trade Center where the company maintained a small production office, the throng below, milling and edging closer to Kong, resembled eddies crossing the surface of a rapidly moving river. Barricades and a line of police and National Guardsmen were all that stood between Kong and the crowd. It was enough, though at times it appeared to be very fragile protection for the most valuable piece of property in New York that night.

The Trade Center was not the only location for the company in New York. The cameras and cast were taken to a pleasant residential street in Queens just over from the 59th Street Bridge, which with skillful lighting and the cooperation of the residents on the block became a street terrorized by the approaching Kong, cars and homes abandoned by fleeing owners, leaving alone in the street Jeff Bridges and Jessica Lange, frantically going among the cars to find one with a key in the ignition.

Also in Queens, a park near the East River, the Queensborough Bridge and an elevated subway station figured in key scenes of Jeff and Jessica fleeing Kong, crossing the bridge on a motorcycle and climbing down a ladder to get away from the monster.

In Manhattan, the chase continued off Wall Street in Hanover Square where Jeff and Jessica took shelter in a restaurant, only to have Kong's massive hand come in through the door in search of his lost love.

While the first unit worked with Kong and the principal actors, a second unit did location shooting along Fifth Avenue, in Central Park and on the steps of the famous St. Patrick's Cathedral, to get crowd reaction to Kong's passage on his way to the Trade Center. ■

Before you buy a professional 16mm sound-on-film ciné camera check out the Frezzolini LW-16 or the new Frezzi-Flex™ FR-16 with Angénieux 9.5-57mm f/1.6 zoom lens. Film at ambient light levels. At 18 inches from the front glass zoom from a full "head-and-shoulder" shot right to an "eye".

Frezzi-Flex™ FR-16
professional 16mm
ciné camera
with Angénieux
9.5-57mm f/1.6 zoom lens—

now shooting documentaries,
educational features,
business shorts &
TV newsfilm
world-wide.

Made In U.S.A.
U.S. Patent
#D277,601 and
Patents Pending
for the improved
features of this camera.
Patent and trademarks
in the U.S.A. and world-wide.



For information
and nearest dealer call
Jim Crawford at (N. J. 201) 427-1160
or (N.Y.C. 212) 594-2294, or write
Frezzolini Electronics Inc.
7 Valley St., Hawthorne, N. J. 07506

byron presents every laboratory service you could possibly shoot for.

COLOR

Color Negative II	35 & 16
Color Internegative	35 & 16
Color Positive Print	35 & 16 & Super 8 Mag.
Ektachrome Original (all types)	16
Ektachrome Prints	16
Kodachrome Prints	16
Color Reversal Intermediate	16
Processing and Work Prints	24 hour service

BLACK & WHITE

Negative Original	35 & 16
Dupe Negative	35 & 16
Masters	35 & 16
Positive Print	35 & 16
Sound Track	35 & 16

VIDEO SERVICES

Computerized Editing	2"
Tape to Tape	Any standard format to any standard format
Tape to Film Transfer	Color or Black & White
Film to Tape Transfer	16 mm or 35 mm, slides, Super 8 mag. to any tape format

PRODUCTION SERVICES

Sound transfers & mix from any tape or film medium to any tape or film size
Editing and conforming
Edgenumbering, film treatment, screening

Now that you've checked all byron's services, check our extremely reasonable prices. Write and ask us for "byron's celebrated price list" that tells all the latest.

byron

COLOR-CORRECT®

65 K Street, Northeast • Washington, D.C. 20002 • 202/783-2700 Professional Film and Video Tape Laboratories

0001-MEMBER -999
008-007-90038-00112
ALLAN L. WILLIAMS
EASTMAN KODAK COMPANY
6706 SANTA MONICA BLVD.
HOLLYWOOD, CA 90038