

# American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

February 1973 / 75 cents



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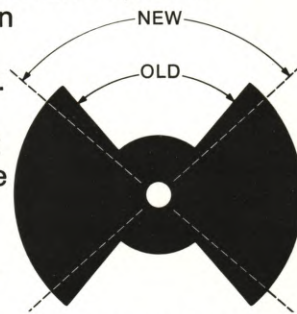
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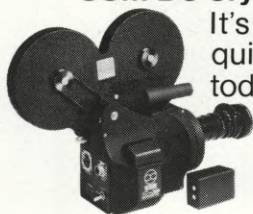
Now you can get a complete newsreel package for \$3295.

And now you can get a DC Crystal Cordless model of the SSIII! You get the lowest price and the only AC/DC choice in the field.

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Even at our original price, the SSIII AC was one of the best values for the news/documentary/educational cameraman. But now we've actually improved the camera and lowered the price! There's a new main drive system, a non-ratcheting footage counter and, by popular request, a drop-down door. Plus improved manufacturing techniques that make this incredibly low price possible!

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It's new. It's three pounds lighter and noticeably quieter than any comparable camera in the field today. It will operate with greater torque efficiency and accuracy at temperatures from sub-zero to 150° F. And a 12V battery just slightly larger than a cigarette pack will run 2800 feet on a single charge.

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I—SSIIIAC Magnesium Camera, 400-ft. Magnesium Magazine, Deluxe Carrying Case and Angenieux 17-68mm f2.2 zoom with zoom finder—\$3295 complete.

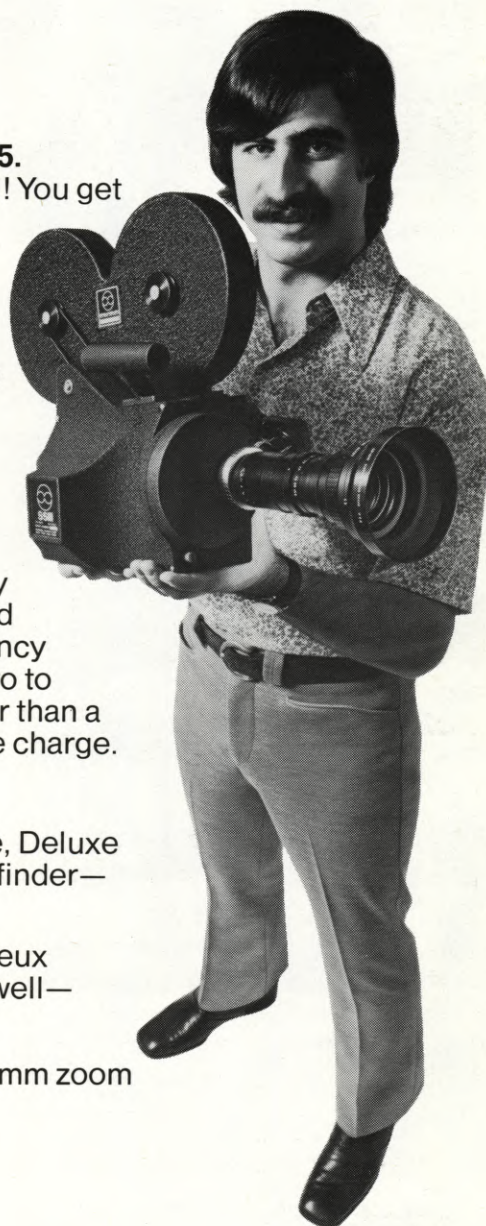
II—SSIIIAC as above, but also comes with detachable Angenieux Retro Zoom Adapter that converts lens to 12.5-50mm f2.2 as well—\$3395 complete.

III—SSIIIAC as in Package I, except lens is Angenieux 12-120mm zoom with zoom finder—\$3895 complete.

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# American Cinematographer

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ON THE COVER: Scenes from "The Circus", produced in 70mm vertical format for showing at the Sears-Roebuck Circus Exhibit in Chicago's Museum of Science and Industry. Photographs are actual frame blow-ups from the release print. Cover design by PERRI & SMITH.

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# The New CP-16/A (with Crystasound)

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October 6, 1972

Mr. Norman L. Bleicher  
Operations Manager  
Victor Duncan, Inc.  
11043 Gratiot Avenue  
Detroit, Michigan 48213

Dear Norm:

Thank you for your letter of September 13, 1972.

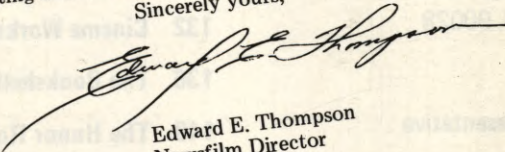
You mention four areas for information relative to news work, using the CP-16/A, and they are as follows:

1. I feel that the CP-16/A is the best news camera on the market today. All of our news reporters feel the same way. It is extremely portable and we are able to shoot pictures much as we do with our Bell & Howell or Bolex cameras. I have designed a small "U" shoulder pod of aluminum, padded with rubber, for use with the camera. The light weight of the camera, "U" pod and magazine make for quick and easy shooting, with comfort and ease for the cameraman as well.
2. As to use under adverse conditions, the camera has performed very well in inclement weather and I see no reason why it should not be the same in the winter as in the summer.
3. Service has been the best. Both you and Cinema Products Corporation have been in close touch with us and we are very pleased with the quick service we are getting.
4. News of Interest: In addition to the shoulder pod, I have installed a Sennheiser MKH-815 shotgun microphone, with a shock-proof mount, on top of the CP-16/A camera. The camera is so quiet that the 815 mike does not pick up any camera noise. With no cables and no power pack to get in the way or restrict your movement, the cameraman can really move in and around, getting the right position to get the best picture. He becomes a part of it all.

The enclosed photographs may be of some help to explain the "U" pod and the shotgun mike. The cameraman is Larry Sales, a reporter here at WAVE News. The other guy holding the camera and mike happens to be me.

In summing up, I am happy to say that we are very pleased with our two CP-16/A cameras (even the price) and I am looking forward to getting another in the very near future.

Sincerely yours,

  
Edward E. Thompson  
Newsfilm Director  
WAVE-TV

EET:jk  
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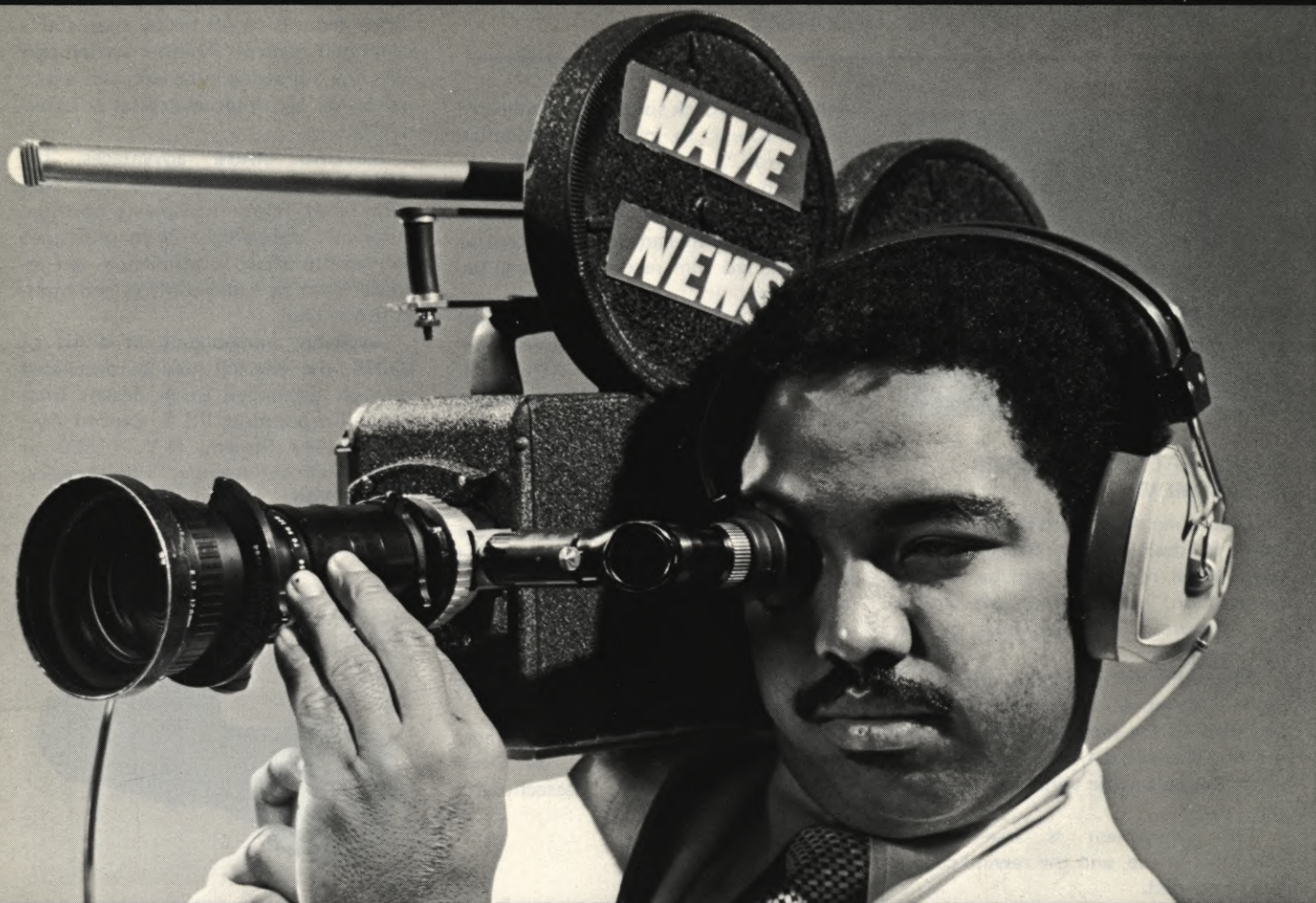
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Mr. Edward E. Thompson,  
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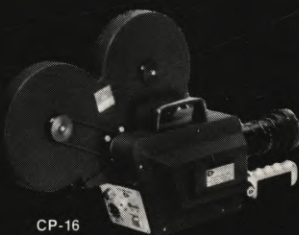
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Mr. Larry Sales, TV-Newsfilm Cameraman, WAVE-TV



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CP-16



CP-16/A

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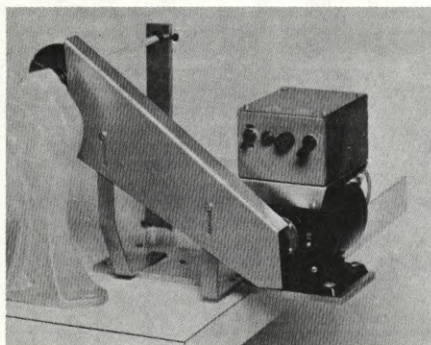
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# WHAT'S NEW

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## FILMKRAFT REWIND POWER ATTACHMENT

The Filmkraft Rewind Power Attachment is designed to attach to any professional rewind. It can be used in conjunction with a Filmkraft Editor . . . or there is a model which can be used separately.

When the switch is ON, there is a slight amount of torque to eliminate any slack in the film being fed onto the rewind. The amount of torque increases when the automatic winder is in operation.

The attachment is free-wheeling when not in use, and the rewind can be hand operated.

List Price: \$322.00 F.O.B. their plant, Los Angeles.

For further information contact: Filmkraft Services, Dept. B; 6850 Lexington Avenue, Suite 217; Hollywood, California 90038; (213) 464-7746.

## NEW SYNCHRONIZER ACCESSORY FOR NAGRA SN RECORDER

The Stuart R. Cody Company of Boston introduces a new product, the S-30 Playback Synchronizer. The unit is an accessory to Kudelski's Nagra SN, the professional pocket recorder.

The filmmaker, using a crystal-controlled camera such as Eclair's ACL, may place the SN Recorder and microphone on his subject, eliminating both the soundman and his array of microphones, booms, and recording equipment.

During playback the S-30 Synchronizer senses and retrieves a 30 Hertz signal generated by a crystal clock and recorded inaudibly on the Nagra SN's 1/8" tape. This synchronizing signal is compared to the power line by the S-30

and tape playback speed is controlled to match sound to picture, eliminating "sync drift."

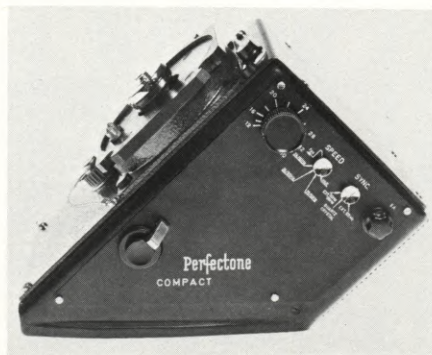
Audio playback signals are amplified within the S-30. The output is +4 dBm at 600 ohms unbalanced, and is sent to a sprocketed film recorder through banana plugs.

Other features are a front panel audio gain control and an internal regulated power supply and charger, allowing the SN to use nickel cadmium batteries.

The S-30 Playback Synchronizer is priced at \$549.50.

The Cody Company has also developed a miniature wireless switch for the SN Recorder, allowing it to be started and stopped by the cameraman. Operating in the VHF bands, it has proven to be very reliable. The wireless control package can also control other tape recorders. It is marketed on a custom made basis only.

For further information, contact: Stuart R. Cody Co., Inc., 24 Dane Street, Somerville, Massachusetts 02143.



## ECLAIR NAMED EXCLUSIVE U.S. DISTRIBUTOR FOR PERFECTONE "UNIVO" CRYSTAL-SYNC MOTOR

The Eclair Corporation of America recently announced it has been named exclusive U.S. distributor for the Perfectone Crystal Sync Motor, more popularly known as the UNIVO. Designed to mate with the Eclair NPR, the UNIVO is already extremely popular with documentary and feature cameramen for its proven accuracy and reliability.

Utilizing advanced integrated circuitry, the motor provides cameramen with a number of control options in a rugged, compact package. At synchronous mo-

tor speeds of 24 and 25 fps, the UNIVO provides switch-selectable pilot tone outputs of 60 Hz (24 fps) or 50 Hz (24/25 fps). In addition, speed can be varied from 8 to 40 fps by means of a calibrated control. Another switch permits the following sync options: external 50/60 Hz; internal crystal or external 100 Hz.

Beyond these advantages, the UNIVO also provides automatic stop with reflex mirror in viewing position; automatic clapperlight (with provisions for remote bloop transmitting and recorder start by radio-control) and built-in tripod base.

Available immediately at a list of \$2395, the UNIVO may be purchased through authorized Eclair dealers from Eclair Corporation, 73 S. Central Avenue, Valley Stream, N.Y. 11580 or 7262 Melrose Avenue, Los Angeles, Calif. 90046.



## ITT ELECTRON TUBE DIVISION HAS POKETSCOPE FOR NIGHT VISION

A hand pocketscope for viewing under conditions of darkness ranging from starlight to moonlight has been announced by a division of International Telephone and Telegraph Corporation.

The ITT Electron Tube Division said the device is applicable to law enforcement, photography and cinematography, governmental civil and military uses, and for public utilities (its high infrared sensitivity enables detection of overheated electrical equipment). It has medical applications, and can help provide vision for night-blind people.

Three configurations of the lightweight scope are available. Each contains an 18-millimeter microchannel-plate image intensifier, objective lens, high-quality eyepiece, and an integral power supply operating at 2.0 to 2.7 volts dc.

Model 4909-27 has a 27mm, F-1.4 objective lens and focuses from 10 inches to infinity. It has a 1-X magnification. A small infrared diode supplies  
Continued on Page 227



# USE YOUR HEAD!

For unusual camera angles there's no better way to film than with the Gordon/Bell Camera Helmet. Completely redesigned, G/B helmets now feature a compartment for the power supply which serves double duty as a counterweight for your camera. Unlike "homemade" camera helmets, G/B helmets are manufactured exclusively for Alan Gordon Enterprises Inc. in the fine tradition of all Bell helmets by the world-famous Bell-Toptex Helmet Co. Safety, comfort, balance and practicality are carefully engineered to professional standards. Whether you're shooting 16mm or 35mm, your G/B helmet is designed to function as an integral cine component during your filmmaking assignment.

#### Model G/B-16

Accepts Model 55GE-C or 55GE-A Mini-Cam 16mm motion picture camera that uses standard 50' Eastman film magazines.

Price: **\$125.00**

#### Model G/B-35

Accepts 35mm motion picture camera with 100' capacity.

**Write for Price**



## Mini-Cam 16

The ideal camera for use with the Gordon/Bell-16 Camera Helmet. Lightweight and portable, the 16mm camera uses pre-loaded quick-change Eastman Kodak magazines in all popular emulsions. Frame rates: 24 and 48 fps. Shutter speed: 1/100 second at 24 fps. Lenses: 55GE-C accepts C-mount lenses; 55GE-A accepts Arri lenses. Power: 24 Volts DC. Camera is attractively finished in tough Acrylic paint in a red, white and blue motif. The 55GE Camera Kit includes camera, battery, battery charger, camera cable, mounts and carrying case.



55GE-C camera, less lens. . . . . **\$298.50**  
55GE-A camera, less lens. . . . . **\$354.00**

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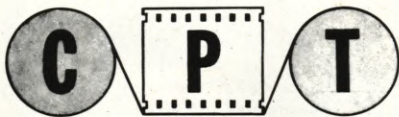
rock concerts, opera, cinema verite... the list grows daily in recording, broadcasting, filmmaking, education and technology. We have not rested on achievements either.

Creating and improving condenser microphones with new features, new capabilities. And happily, you adopted them to an extent that has made us the industry standard. Perhaps though, you are unaware just how large the "first family" of professional condenser microphones and accessories has become. For the latest information, please write or call us.

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## QUESTIONS & ANSWERS

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



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

**Q** What are the methods used to convert 24 frame-per-second films to 30 FPS videotapes?

**A** The projection set-up that is used in modern television broadcast stations consists of a special projector and a Vidicon camera. The projector has a unique pull-down cycle so that frame number one exposes three fields, and so on. The four frames cover 1/6th of a second and the ten fields (or five television frames) also cover 1/6th of a second. Thus, it is apparent that 24 film frames are fitted into 30 television frames. It can be readily seen that the fundamental basis of this system is providing a projection mechanism that projects film with alternating dwell times of 1/30th of a second and 3/60ths of a second.

**Q** What do studio special effects men add to ordinary water to make it appear like sea water?

**A** A pool of clear water will reflect the color of the sky or of a skybacking. Thus, it is unnecessary to use dyes for coloring water for miniature sea shots. However, where shallow tanks or pools are used, the water must be dyed so the bottom will not show through. For this, No. 623 blue aniline dye powder is used—approximately one pound to 250,000 gallons of water.

**Q** I wish to use mattes or masks before the lens for split-stage and other special photographic effects. Can you give me a mathematical formula for calculating the correct distance to place the mattes before the lens; also, the aperture that should be used for best results?

**A** I do not know of any mathematical formula for arriving at the calculations you mention. The most desirable results will be obtained, when using mattes in front of the lens, by positioning them at the right distance before the lens so that the edges of the picture frame will be slightly out of focus. In this way, a soft blend will be effected between the edges of the various mattes used, making the line or lines

of demarcation invisible. The approximate position for the mattes (before the lens) can be arrived at by referring to a depth of field table for the respective lens used, then placing the mattes inside the respective depth of field area for the lens stop being used.

**Q** I am interested in shooting a picture in 16mm, using the Bolex anamorphic lens on my camera, the aspect ratio of which is 2-to-1. I plan to have this footage blown-up to 35mm for exhibition in theatres in the Cinemascope 2.66 to 1 format. Because of the difference in aspect ratios of the 16mm and 35mm lenses, will this prove a problem when it comes time to project my picture?

**A** For satisfactory results, the aspect ratio of the anamorphic taking lens and the anamorphic projection lens should be identical. If you project a film shot in the 2-to-1 aspect ratio through a Cinemascope type projection lens having an aspect ratio of 2.66-to-1, there will be some lateral distortion in the screened result.

**Q** How are bi-pack (double film magazines stacked on top of one another) magazines used in animation photography?

**A** The bi-pack film magazine enables the camera to function as both a camera and a contact printer, either simultaneously or separately. Any type of process film (negative, positive or matte film) is threaded in contact with the unexposed film and will be printed by the light coming through the lens. Thus, the subjective title or scene in front of the camera is photographed in combination with the process film. The most common use of the bi-pack magazine is with the traveling matte process. The matte in front of the raw stock holds back various unwanted areas and shapes that vary as the scene progresses. Uses are almost unlimited and include trick transitions from one scene to another, superimposition of lettering design, graphs, etc. Much of this work depends on the skill, ingenuity and experience of the cinematographer. ■



# THE CP-16

## AN ALL-NEW CAMERA Not a Conversion

The all-new CP-16 Single System/Double System 16mm Sound Camera was designed especially for cameramen who are on the go. Manufactured of lightweight magnesium, it provides maximum portability and comfortable hand-holding balance. Additionally, the CP-16 represents a breakthrough in crystal motor technology. Its drive system consists of a small, highly efficient DC motor, an extremely accurate crystal control circuit and a compact plug-in rechargeable NiCad battery, all located within the camera body. *There is no external power pack, no camera cable.*



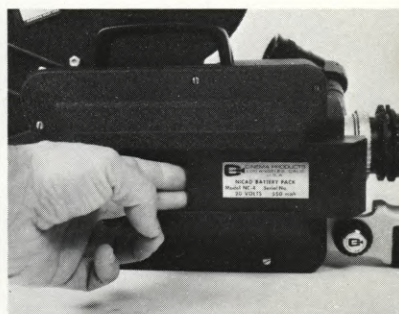
The CP-16 is now in use by television stations throughout the U.S.

### FEATURES:

- Camera body weighs 9 lbs., including motor, battery and control circuit.
- 1/2 Amp-hr. plug-in battery provides 3000 ft. minimum filming capacity per charge.
- "Battery Eliminator" permits camera operation from AC line while charging internal battery.
- "Out of Sync Blink" warning light near eyepiece.
- Removable hand grip with built-in start switch.
- Quick release magazine latch.
- Single lens turret designed for use with all "C" mount lenses.
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# INDUSTRY ACTIVITIES

## PRELIMINARY SCREENINGS IN FIVE CATEGORIES ANNOUNCED BY MOTION PICTURE ACADEMY

Screening of preliminary selections for nominations consideration by five branches of the Academy of Motion Picture Arts and Sciences began on Saturday, January 6, at the Academy Award Theatre.

Films being screened are *not* nominations for the 45th Annual Awards. They are *preliminary selections* from which the actual nominations will be made.

Attendance at the screenings is limited to members of the Art Directors, Cinematography, Film Editors, Music and Sound Branches. (Art direction and costume design are included in the Art Directors Branch.)

Nominations ballots will be mailed to members of those five branches after the completion of the screenings.

The films screened include:

**ART DIRECTION:** "Butterflies Are Free", Frankovich Productions, Columbia; "Cabaret", an ABC Pictures Production, Allied Artists; "Lady Sings The Blues", a Motown-Weston-Furie Production, Paramount; "The Life And Times Of Judge Roy Bean", a First Artists Production Company, Ltd., Production, National General; "The Poseidon Adventure", Kent Productions, 20th Century-Fox; "Slaughterhouse-Five", a Universal-Vanadas Production, Universal; "Snowball Express", a Walt Disney Production, Buena Vista Distribution Company; "Travels With My Aunt", Robert Fryer Productions, Metro-Goldwyn-Mayer; "The War Between Men And Women", Jalem-Llenroc-4-D Productions, Cinema Center Films Presentation, National General; "Young Winston", An Open Road Films, Ltd. Production, Columbia.

**COSTUME DESIGN:** "Cabaret", an ABC Pictures Production, Allied Artists; "Fellini's Roma", an Italo-Francese-Ultra Film Les Productions Artistes Associes, S.A. Production, United Artists; "The Godfather", Alfran Productions, Paramount; "Lady Sings The Blues", a Motown-Weston-Furie Production, Paramount; "Pete 'N' Tillie", a Universal-Martin Ritt-Julius J. Epstein Production, Universal; "The Poseidon Adventure", Kent Productions, 20th Century-Fox; "Savage Messiah", a Russ-Arts, Ltd. Production, Metro-Goldwyn-Mayer; "1776", a Jack L. Warner Pro-

duction, Columbia; "Travels With My Aunt", Robert Fryer Productions, Metro-Goldwyn-Mayer; "Young Winston", an Open Road Films, Ltd. Production, Columbia.

**CINEMATOGRAPHY:** "Avanti!", a Phalanx-Jalem Production in association with The Mirisch Corporation of California and P.E.A. Produzioni Europee Associate, s.a.s., United Artists; "Butterflies Are Free", Frankovich Productions, Columbia; "Cabaret", an ABC Pictures Production, Allied Artists; "The Culpepper Cattle Co.", a Richards-Helmick Production, 20th Century-Fox; "Deliverance", Warner Bros.; "Glass Houses", a Magellan, Ltd. Production, Columbia; "The Godfather", Alfran Productions, Paramount; "The Poseidon Adventure", Kent Productions, 20th Century-Fox; "1776", a Jack L. Warner Production, Columbia; "Travels With My Aunt", Robert Fryer Productions, Metro-Goldwyn-Mayer.

**FILM EDITING:** "Avanti!", a Phalanx-Jalem Production in association with The Mirisch Corporation of California and P.E.A. Produzioni Europee Associate, s.a.s., United Artists; "Ben", BCP Productions, Cinerama; "Butterflies Are Free", Frankovich Productions, Columbia; "Cabaret", an ABC Pictures Production, Allied Artists; "Deliverance", Warner Bros.; "The Godfather", Alfran Productions, Paramount; "The Hot Rock", a Landers-Roberts Production, 20th Century-Fox; "Man Of La Mancha", a PEA Produzioni Europee Associate Production, United Artists; "The Poseidon Adventure", Kent Productions, 20th Century-Fox; "1776", a Jack L. Warner Production, Columbia.

**SOUND:** "Avanti!", a Phalanx-Jalem Production in association with The Mirisch Corporation of California and P.E.A. Produzioni Europee Associate, s.a.s., United Artists; "Butterflies Are Free", Frankovich Productions, Columbia; "Cabaret", an ABC Pictures Production, Allied Artists; "The Candidate", a Redford-Ritchie Production, Warner Bros.; "Deliverance", Warner Bros.; "The Godfather", Alfran Productions, Paramount; "Lady Sings The Blues", a Motown-Weston-Furie Production, Paramount; "Man Of La Mancha", a PEA Produzioni Europee Associate Production, United Artists; "Pete 'N' Tillie", a Universal-Martin Ritt-Julius J. Epstein Production, Universal; "The Poseidon

Adventure", Kent Productions, 20th Century-Fox.

**BEST ORIGINAL DRAMATIC SCORE:** "Ben", BCP Productions, Cinerama; "Fellini's Roma", an Italo-Francese-Ultra Film Les Productions Artistes Associes, S.A. Production, United Artists; "The Godfather", Alfran Productions, Paramount; "images", a Hemdale Group, Ltd.-Lion's Gate Films Production, Columbia; "The Life And Times Of Judge Roy Bean", a First Artists Production Company, Ltd. Production, National General; "Limelight", a Charles Chaplin Production, Columbia; "Napoleon And Samantha", Walt Disney Productions, Buena Vista Distribution Company; "The Other", Rem-Benchmark Productions, 20th Century-Fox; "The Poseidon Adventure", Kent Productions, 20th Century-Fox; "Sleuth", a Palomar Pictures International Production, 20th Century-Fox.

**BEST SCORING: ADAPTATION AND ORIGINAL SONG SCORE:** "Alice's Adventures In Wonderland", Josef Shaf-tel Productions, Ltd., American National Enterprises; "Cabaret", an ABC Pictures Production, Allied Artists; "Lady Sings The Blues", a Motown-Weston-Furie Production, Paramount; "Man Of La Mancha", a PEA Produzioni Europee Associate Production, United Artists; "1776", a Jack L. Warner Production, Columbia; "Snoopy, Come Home", Lee Mendelson Film Productions-Sopwith Productions, Cinema Center Films Presentation, National General; "Young Winston", an Open Road Films, Ltd. Production, Columbia.

**BEST SONG: BEN** from "Ben", BCP Productions, Cinerama; **COME FOLLOW, FOLLOW ME** from "The Little Ark", Robert Radnitz Productions, Ltd., Cinema Center Films Presentation, National General; **FREDDIE'S DEAD** from "Super Fly", a Sig Shore Production, Warner Bros.; **MARMALADE, MOLASSES & HONEY** from "The Life And Times Of Judge Roy Bean", a First Artists Production Company, Ltd. Production, National General; **MORE-OVER AND ME** from "The Biscuit Eater", Walt Disney Productions, Buena Vista Distribution Company; **THE MORNING AFTER** from "The Poseidon Adventure", Kent Productions, 20th Century-Fox; **SERENADE OF LOVE** from "Travels With My Aunt",  
Continued on Page 196



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# CINEMA WORKSHOP



By ANTON WILSON

## NI-CAD BATTERIES—CHARGING

The most attractive feature of the Ni-Cad battery is obviously its ability to be recharged. The average Ni-Cad sealed cell is capable of 300 to over 1000 charge/discharge cycles during a life-time. Moreover, the Ni-Cad cell is capable of a very wide variety of charge rates.

Ni-Cad battery chargers can be broken down into three basic charge rates. These are slow charge (overnight), quick charge and fast charge and these are defined in FIGURE 1. However, before discussing the types of chargers, we must first look at the Ni-Cad cell itself. The Ni-Cad cell can accept a charge rate from about .05C (30 hours) to over 10C (6 minutes). The .05C rate is usually considered the lowest practical charge rate due to non-recoverable energy losses. This means that during the charging of any Ni-Cad, not all the charge current is being converted to power that can be used later. By design, a small amount of current is absorbed in side reactions that cannot be recovered. During normal charge currents (C/10 and higher) these losses are negligible. However, as the charge current gets smaller than C/20, most of the current goes into this side reaction, and very little, if any, will actually go to charge the battery.

The Ni-Cad cell may appear extremely versatile; accepting charge rates from as little as C/20 to over 10C. There is a catch, however. Once the cell is fully

charged, *all* the current that formerly was used to charge the cell is now channeled into a side reaction, namely the production of oxygen at the positive electrode. As the cell continues into overcharge, the pressure and temperature begin to rise very rapidly. At extremely high charge rates, the temperature and pressure can build up so fast, that the cell will vent and be destroyed within minutes of reaching full charge. Thus, a Ni-Cad cell can accept fast charges. However, it will be destroyed within minutes if this charge current continues past the point of full charge.

The invention of the sealed cell Ni-Cad brought a simple solution to this problem. We know that once the cell reaches full charge, the charge current produces oxygen at the positive electrode. It is this oxygen that eventually builds up the pressure to a point at which the cell "explodes" or vents. In the sealed cell, the negative electrode is designed to *absorb* oxygen. Thus, when the cell goes into overcharge, the excessive oxygen that is produced migrates to the negative electrode where it is absorbed. Simple as that—not quite; there is one little catch. There is a limit to how much oxygen the negative electrode can absorb. If the positive electrode produces more oxygen than the cathode can absorb, we are back to the same old problem: pressure will build up, temperature skyrockets and the cell will be destroyed.

The ultimate solution is very simple.

FIGURE 1—DEFINITIONS OF CHARGE RATES FOR SEALED NICKEL-CADMIUM BATTERIES

DEFINITION OF CHARGE RATE	CURRENT RATE AS A FUNCTION OF C RATE*	TIME REQUIRED TO OBTAIN A FULL CHARGE
Slow Charge or "Overnight"	.10C or C/10 .07C or C/15	14-16 Hours 20-24 Hours
Quick Charge	.20C or C/5 .25C or C/4 .33C or C/3	6-7 Hours 4½ - 5½ Hours 3½ - 4 Hours
Fast Charge	C 4C 10C	60 Minutes 15 Minutes 6 Minutes

\*The "C" rate represents the current in amperes numerically equal to the nominal capacity rating of the battery. A battery with a rated capacity of 4 ah, for example, has a C rate of 4 amps, and a C/10 rate of .4 amps or 400 mA.

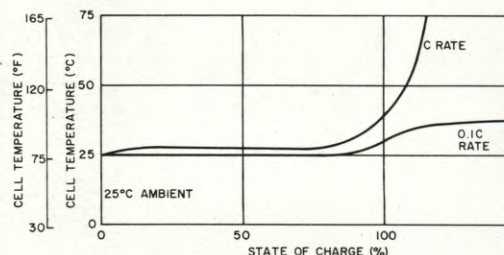


FIGURE 2a

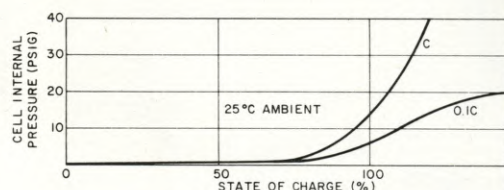


FIGURE 2b

Keep the charge current low enough that the anode will *never* produce more oxygen than the cathode can absorb. This charge current is almost always the C/10 rate or "overnight charge." If the Ni-Cad battery is charged with a C/10 charger, it will reach full charge in 14-16 hours and then enter a "safe" overcharge region indefinitely. A Ni-Cad can actually be left on a C/10 charge for days, weeks or even months without any permanent damage to the cells. This is because the charge current is producing oxygen at a rate well within its capacity to reabsorb it. Once the charge current rises much past the C/10 level, the cell produces oxygen faster than it can absorb it and the cell will eventually "explode" or vent.

FIGURE 2, a and b, gives a clear indication of temperature and pressure rise during overcharge for both an "overnight charge" (0.1C) and a "fast charge" (C rate—60 minutes). Note that in both cases the temperature remains at approximately room temperature and there is no significant internal pressure *during* charge. However, as the cell approaches 100% charge, temperature and pressure begin to rise. In the case of the 0.1C charge or "overnight charge" the rise in temperature and pressure is

Continued on Page 193



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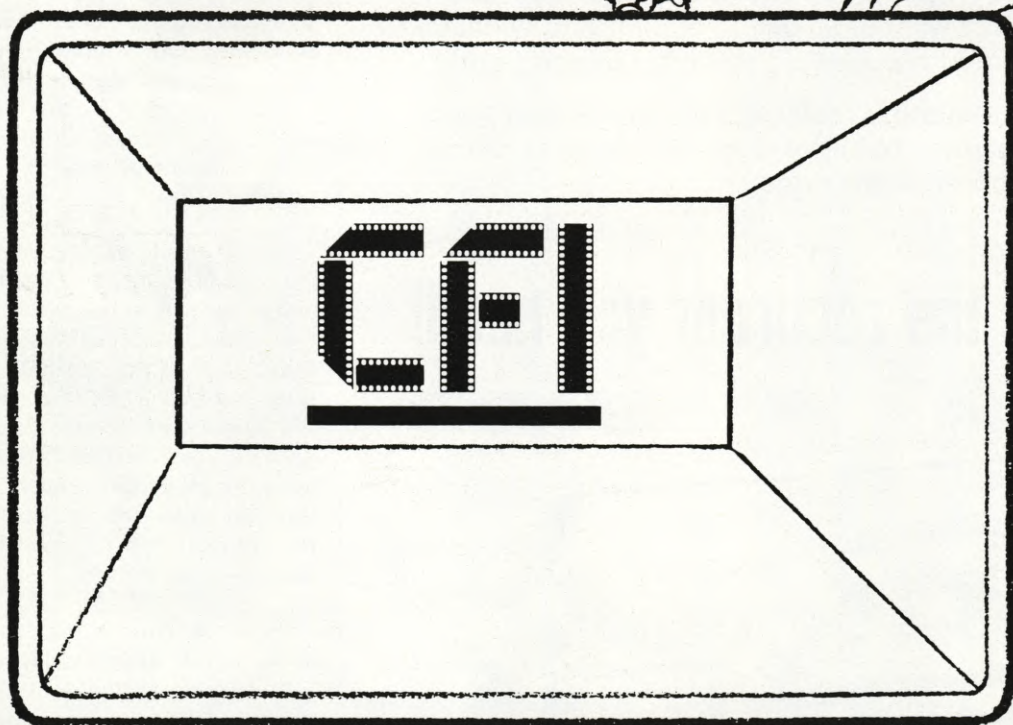
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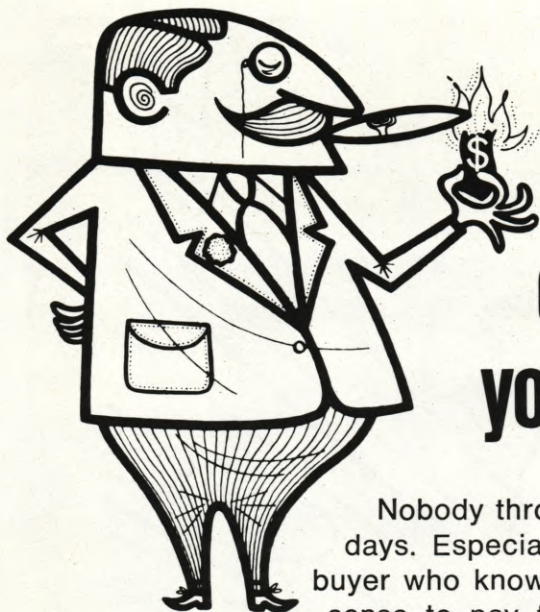
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## THE BOOKSHELF

By GEORGE L. GEORGE

Prof. Charles Thomas Samuels, in *ENCOUNTERING DIRECTORS* (Putnam \$12.50), has chosen, as an interviewing technique, an abrasive bluntness buttressed by a thorough study of his respondents' films. This confrontation method, on the whole, didn't work out too well, as it put off directors like Antonioni, De Sica, Bergman and Fellini. Others were more understanding, like Hitchcock, Clair and Carol Reed, with Godard, Renoir, Bresson and Olmi falling somewhere in the middle.

Samuels' academic mind tends to ignore the elements of instinct and improvisation that are such significant components of a director's creativity. His book, however, brings out honest appraisals by the film-makers of their own works. An interesting angle is the often-mentioned contribution by cameramen, not only in the artistic field, but also in the ingenious short-cuts they have to invent because of technical or financial difficulties.

\* \* \*

In *JEAN VIGO* (U. of California Press \$8.95/5.95), P. E. Salles Gomes writes feelingly about the French director's tragically short life and intense films, three of which (photographed by Boris Kaufman, ASC) are preserved by the Museum of Modern Art, *A Propos de Nice*, *Zéro de Conduite* and *L'Atlantique*. A particularly notable aspect of this definitive biography is its documented portrayal of French film production in the thirties.

\* \* \*

From *A Trip to the Moon*, Méliès' 1902 film of anticipation, to Don Siegel's *Invasion of the Body Snatchers*, a typical 1956 science-fiction movie, Chris Steinbrunner and Burt Goldblatt have charted the course of *CINEMA OF THE FANTASTIC* (Saturday Review Press \$9.95) through 15 significant case histories. The authors' research goes beyond the lavishly illustrated synopses of those films to an appraisal of the social forces of the times that created a demand for this type of escapist entertainment.

\* \* \*

On a more general level, Walt Lee's *REFERENCE GUIDE TO FANTASTIC FILMS* is a unique source of serious



documentation on sci-fi, fantasy and horror movies. This first of three projected volumes classifies by *genre* over 4,000 films with basic data and bibliographical notes, and represents a remarkable labor of love and specialized scholarship. (Available from Walt Lee, Box 66273, Los Angeles, Cal. 90066, \$9.50)

\* \* \*

Attractive and thoroughgoing, SCREEN WORLD 1972 (Crown \$8.95) is a comprehensive statistical and pictorial record of films released in the U.S. during the previous year. This 23rd edition of John Willis' annual is an informative and reliable reference work, whose more than 1000 illustrations are welcome memory-joggers for instant recognition not always provided by cast-&-credit listings.

\* \* \*

The expanding use of electronics in the film medium confronts many professionals—cameramen, editors, directors and producers—with the necessity of mastering the new techniques and the new terminology. They will find much valuable information in Harley Carter's DICTIONARY OF ELECTRONICS, which provides complete and easily understandable definitions of thousands of specific electronics terms, extensively cross-indexed. (Available from TAB Books, Blue Ridge Summit, Pa. 17214, \$8.95/3.95)

\* \* \*

Half a century of films under the Paramount banner is evoked in James Robert Parish's lively and informative THE PARAMOUNT PRETTIES (Arlington \$12.95). While covering extensively the lives and careers of 16 of the studio's brightest stars, the book expands this theme into a re-creation of the tempo and mood of the times. A studio, then, had a definable personality, and Paramount was thought of as a haven par excellence of sophistication, style and subtlety.

\* \* \*

A highly popular form of art to which Hollywood has contributed a major share is documented in THE PIN-UP (Universe Books \$20.), Mark Gabor's gallery of cheesecake from the *fin de siècle* poster to today's literate sex magazines. Starlets, as well as established actresses, are found in this eye-catching display, not to mention various he-men of the screen. Marilyn Monroe, Toby Wing, Jayne Mansfield, Betty Grable, Sophia Loren, Rita Hayworth and Elizabeth Taylor are some of the lovelies immortalized in this superbly illustrated, large-format tribute to pulchritude. ■

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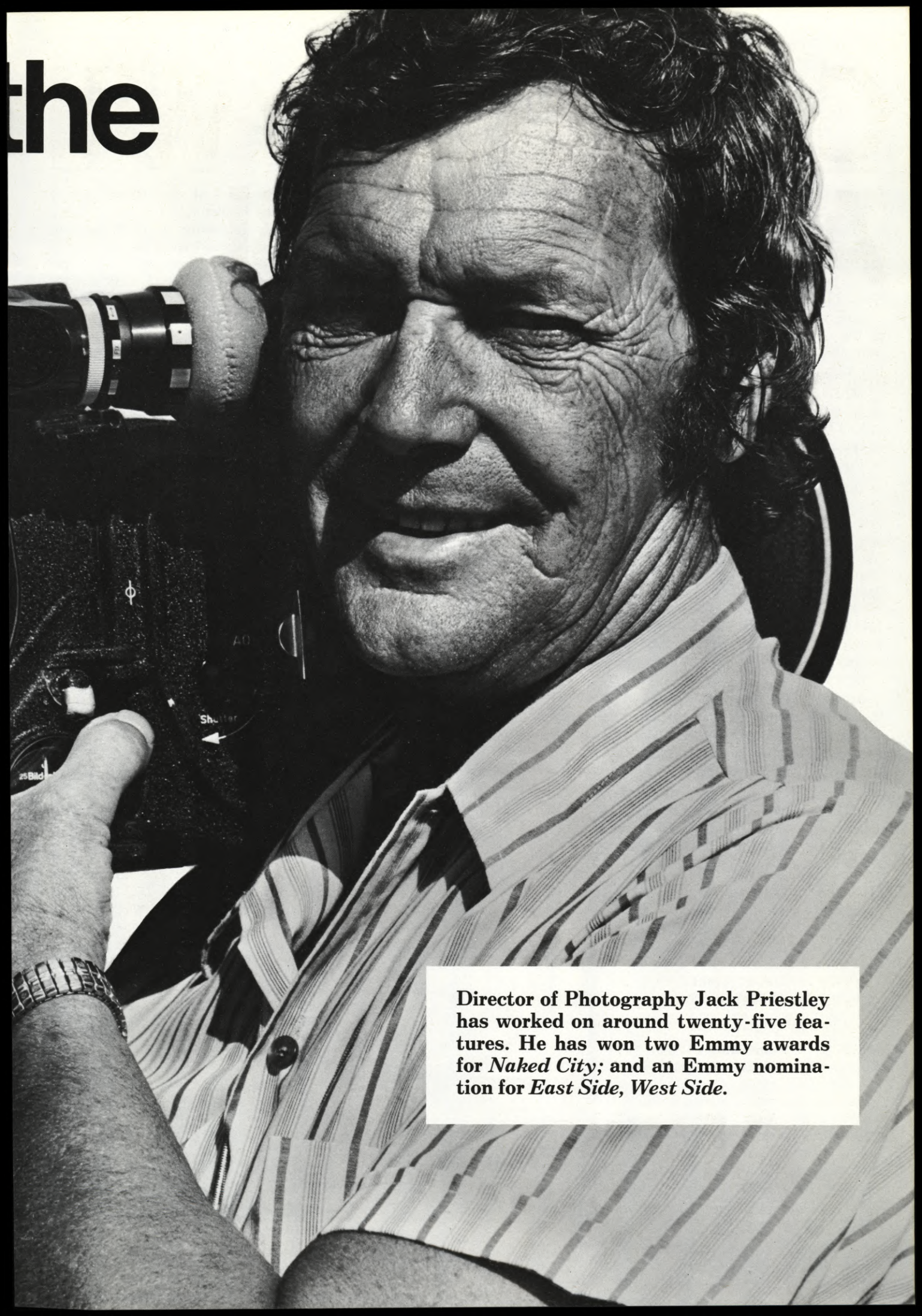


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the



Director of Photography Jack Priestley has worked on around twenty-five features. He has won two Emmy awards for *Naked City*; and an Emmy nomination for *East Side, West Side*.





# THE HONOR ROLL



FRANK C. ZUCKER, ASC

Frank Zucker started in camera work in 1916 for World Films at the Peerless Studios. Here he made two serials with Helen Homes in 1920 and also "The Silver Lining". In 1922 he made two pictures with Harry Houdini, "Holdane, of the Secret Service" and "The Man from Beyond"; no doubt he learned a few tricks from Houdini.

Nineteen Twenty-two also saw Zucker in Russia to shoot the interior of Siberia for W. K. Zeigfeld. While there he shot about one hundred thousand feet of film.

Upon returning, he decided to change his image and, judging from the titles of his pictures he became a women's photographer. He did "Meddling Woman", "The Midnight Girl", "Camille" (this Camille was of the Barbary Coast), "Broken Hearts", and "The Mad Marriage" (featuring Lila Lee, Mae Bush, Clara K. Young), followed by two pictures with Wes Ruggles and six pictures with Benny Leonard's "Flying Fists".

In 1929 he filmed "Lucky Boy", Norm Taurog directing and starring George Jessell. In 1931 "His Wife's Lover" in Jewish language and "Cosi E La Vita" in Italian were two achievements.

In 1933 Zucker photographed "Mr. Broadway", starring Johnny Walker and Ed Sullivan, and finished his career as a cinematographer.

Frank wasn't finished with the motion picture industry, however. A few years earlier he had gotten an idea and he began to implement it. He bought a couple of cameras, plus the one he used in his work, and began to rent them out. Then he began to build tripods and add them to his rental stock and the business began to grow. By 1933, he had enough of a rental business that he could retire from photographing and concentrate on renting.

As the business flourished Burgi Contner became a partner and the company continued to grow. Zucker and Contner later went their separate ways and Frank again became sole owner.

In the early sixties, Frank Zucker sold his company which is now Ceco. He retired to Florida.

EDWARD SNYDER, ASC

In 1912 when Eddie was 20 years old and was looking for a job, his brother-in-law had been working at the Pathe Studios in Jersey City and managing their baseball team. He called Eddie and told him he thought he could get a job for him at Pathe. So Eddie rushed out and was hired as a property man for \$15.00 a week.

In 1913 Eddie had a little camera and was playing around with it on the lot when Louis Gasnier, who was head of the Studio, noticed him and called him over and told him, "Boy, if you like photography, I'll make a cameraman out of you."

Eddie jumped at the opportunity and made a deal whereby Mr. Gasnier sold him a Pathe Camera for \$500 and raised his pay from \$15.00 to \$75.00 a week. To pay for the camera, they were to take \$15.00 a week from Snyder's paycheck. Eddie became a cameraman.

In 1914 they were making some "Perils of Pauline" in Florida with a French camera mechanic photographing it. Eddie was sent down as a sort of second cameraman.

When the company came back to New York, they decided to sever the French Connection. Eddie did some of the Pearl Whites and so did Artie Miller and Vic Milner. Then Uncle Sam came into the picture and Ed Snyder went into the service.

In 1919, after the war, Snyder was assigned to do "Anne of Green Gables" with William Desmond Taylor directing and Mary Miles Minter starring.

After finishing all the exterior shots

Eddie became ill and George Folsey finished the picture.

After recovering in 1920, he went back to the Pearl White serials. Even in those days it was very difficult to get some good help; he needed a good assistant and came up with Lin Dunn.

In 1926 Mr. Bennett came out to California to do a picture and brought Eddie with him. Snyder never returned to New York to work.

He did a number of pictures with Mr. Bennett including "The Fighting Marine" with Gene Tunney in the year that Tunney beat Jack Dempsey for the World championship. He worked with Tay Garnett and did "The Painted Desert," which was Clark Gable's first picture. William Boyd, Helen Twelvetrees and Ricardo Cortez were also in the cast.

In 1931 Al Rogell used Eddie as a cameraman for "Tip Off" with Ginger Rogers and in 1933 he did "They Just Had to Get Married" with ZaSu Pitts. These were followed by "The Oil Raider", "His Night Out", "The Harvester", "Girl Loves Boy", "Escape by Night", "Small Town Boy", "Borrowing Trouble", "Love on a Budget", "Trip to Paris", "Meet the Girls", "Road Demon", "Down on the Farm", and "Jones Family".

In 1939 Sol Halprin offered him a job in the process department of 20th Century-Fox. In 1959 he had a heart attack and thought that was the end of his career but in 1961 he came back to do process at M.G.M. and was free-lancing and did "Catch 22" at Paramount on his 77th birthday.

Eddie has now officially retired.

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

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

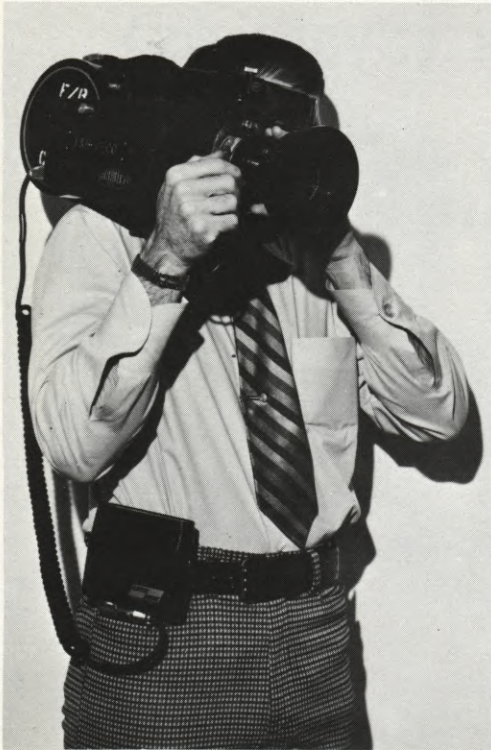
To find out more about the Beaulieu R16B(PZ) model (as well as the entire family of Beaulieu 16mm motion picture cameras), please write us. We will be more than happy to send you a full color descriptive brochure on the Beaulieu 16mm camera systems.



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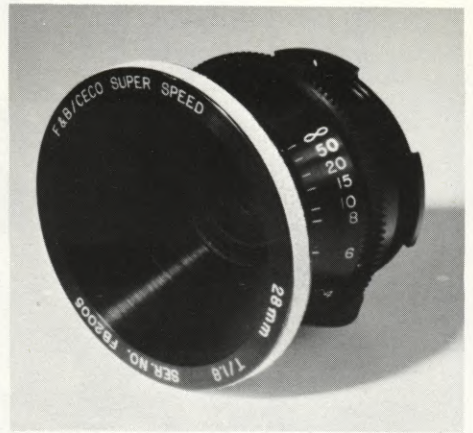
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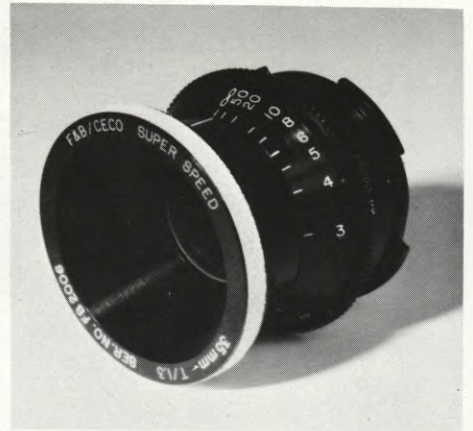
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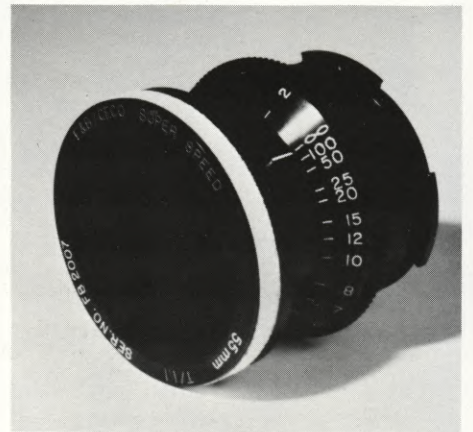
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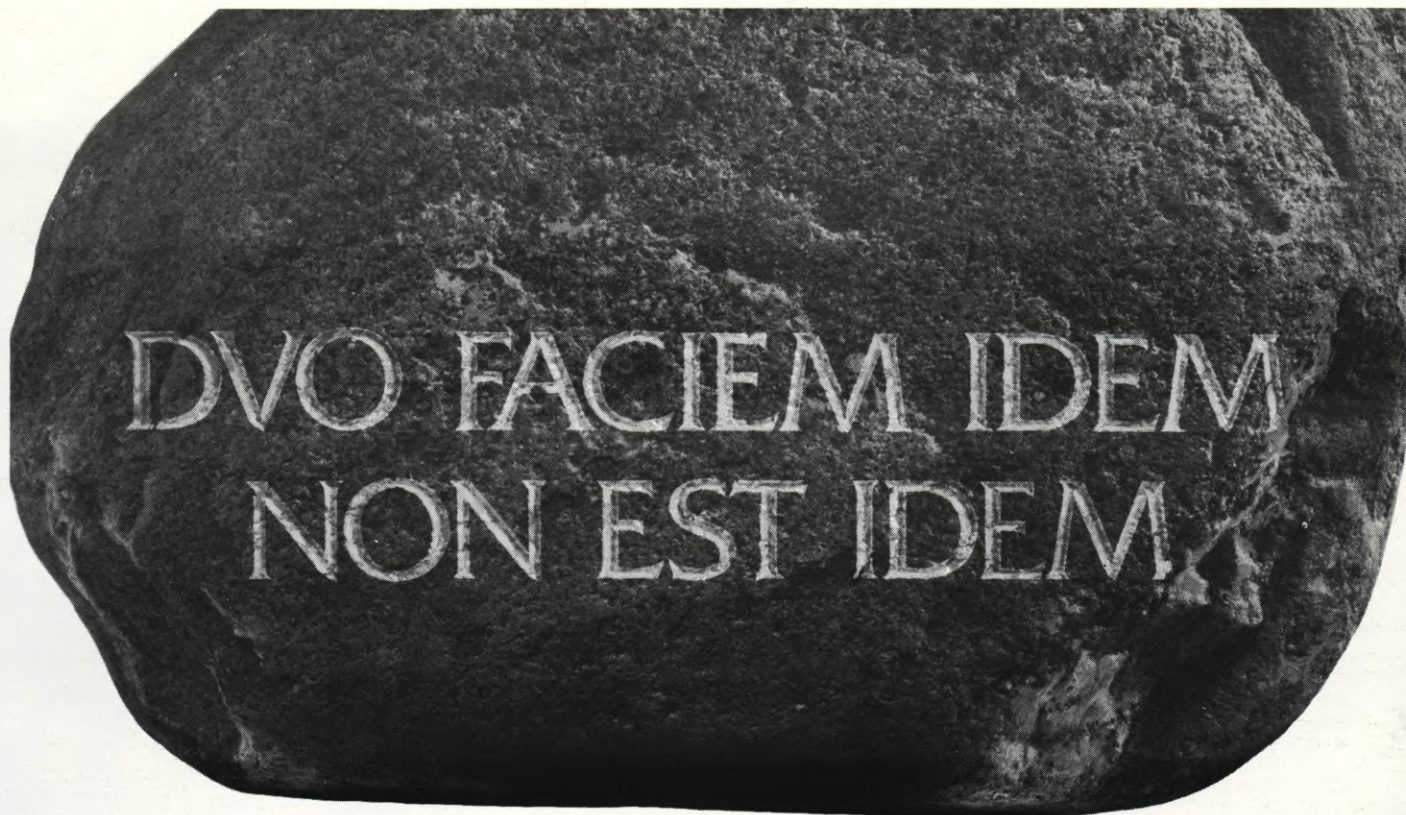


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1st Cent. B.C.

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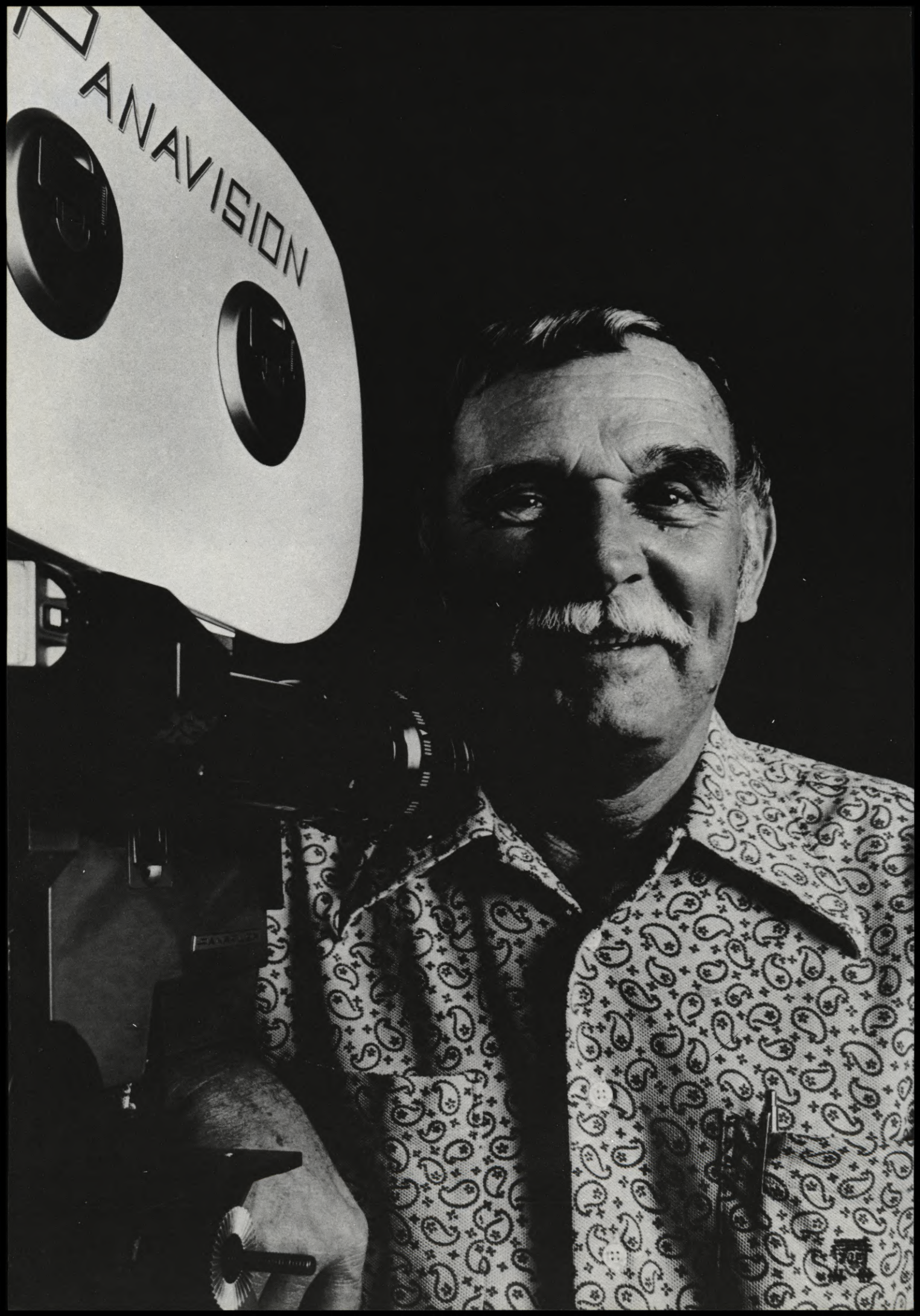
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ANAVISION



"I knew it the moment the producer showed me the script.

"But more important than the Emmys and other awards that 'Brian's Song' won was the fact that it was the highest-rated made-for-tv movie ever. I mean, people wanted to see this movie. Maybe even needed to.

"That's why thousands of them packed Chicago theaters to see 'Brian's Song' just a few weeks after it had been on television.

"And, as a cameraman who has been in the business for fifty years, working on 'Brian's Song' made me feel good. You know, jumping from one medium to another without a hitch.

"That's why I like the flexibility and freedom of something like Eastman film. And why I'll stick with it.

"After all, I never know when another 'Brian's Song' might come along."

---

Joseph Biroc. Award winning  
Director of Photography, "Brian's Song."



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## FILMING THE CIRCUS IN A 70<sub>mm</sub> VERTICAL FORMAT

By GREG DINALLO

*Producer/Director*

In March, 1973, a film will premiere in The Museum of Science and Industry in Chicago. It will open with a guaranteed minimum run of five years and a potential yearly audience in excess of three million museum visitors.

It is not a feature or documentary film. It does not tell a story nor does it sell a product. It is an intimately photographed, nine-and-one-half minutes of circus performances, the entire "Big Top" show, compressed into a contin-

uous stream of visual excitement. It is the climax of the new Sears-Roebuck Circus Exhibit in the museum.

The film will be viewed by 125 people every 10 minutes in a specially designed theatre called the "Projection Circus". Perched 18 feet in the air in a rotunda, the theatre is reached via a spiral ramp from which the visitor views the exhibit of three-dimensional miniature circus tents and carved figures, circus graphics, photographs and memo-

rabilia.

The "Projection Circus" is created by a vertical image, 14 feet wide and 30 feet high, projected amidst a network of circus rigging and props; a bicycle on a tightrope, a trapeze rig, a web of rope ladders and stretched stainless cables; which, animated by flashing strobes and motorized spotlights, join the film at its climax to create a mind-spinning experience for the audience.

The film was produced by deMartin

Looking at the Big Show from a uniquely different cinematic point of view poses problems, but results in an exciting and spectacular museum exhibit



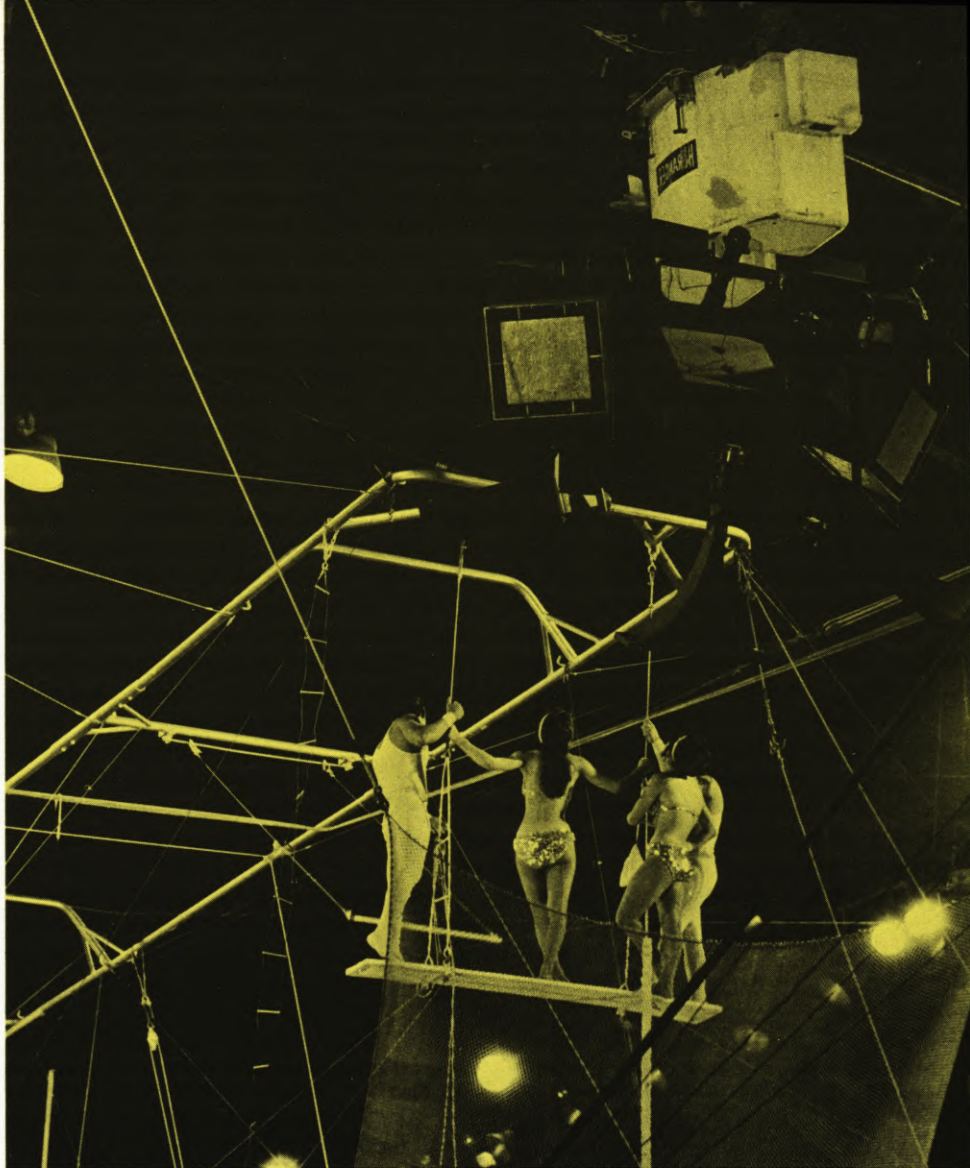
Marona & Associates of New York, who are also the creators of the circus exhibit. It was photographed in March on location with the Clyde Beatty-Cole Brothers Circus at the Commack Arena on Long Island. The film took eight months and \$150,000 to create, story board, shoot, edit, produce special effects, score and composite.

The development of the film concept was strongly influenced by the nature of the subject matter, the basic theatre space, and the need for a unique viewing experience.

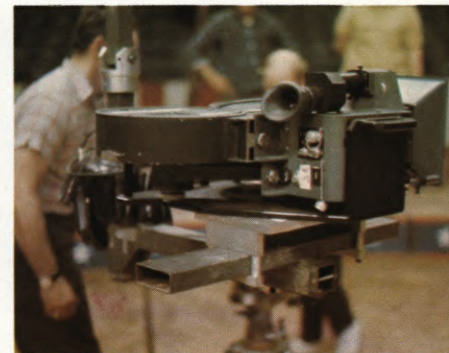
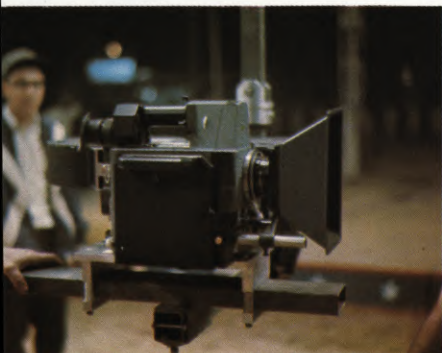
The nature of the subject matter was most responsible for the selection of the unusual screen format. The circus is a three-dimensional experience happening in space and overhead. Early in the film's development the desire to capture the height and space of the circus brought about the decision to work with a vertical format.

However, before development of the vertical concept for the "Projection Circus" could commence it was necessary to find a space in the museum that could physically accommodate such a format. The museum is a classic structure, designed for the 1898 Columbian Exposition, made up of an endless variety of interior spaces... most of them full of industrial, scientific and corporate exhibits. Luckily one of the few available spaces was a vertical one; 45 feet in diameter and 60 feet from the floor to the center of its domed rotunda. A true "circus space".

The unusual proportions of the space dictated a theatre design that places the audience in close proximity to the 30-foot-high image. The first row of seating is 16 feet from the screen, the



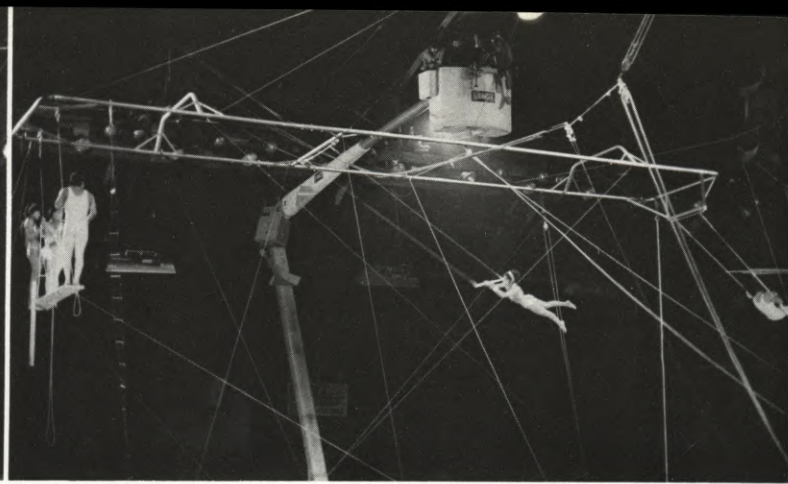
Inside the Commack Arena, Long Island, N.Y., trapeze artists of the Clyde Beatty-Cole Brothers Circus wait patiently in the rigging as camera crew in bucket of giant crane overhead lines up a spectacular shot looking down at them. Most of the action was filmed in the mornings or during the first matinee performance.



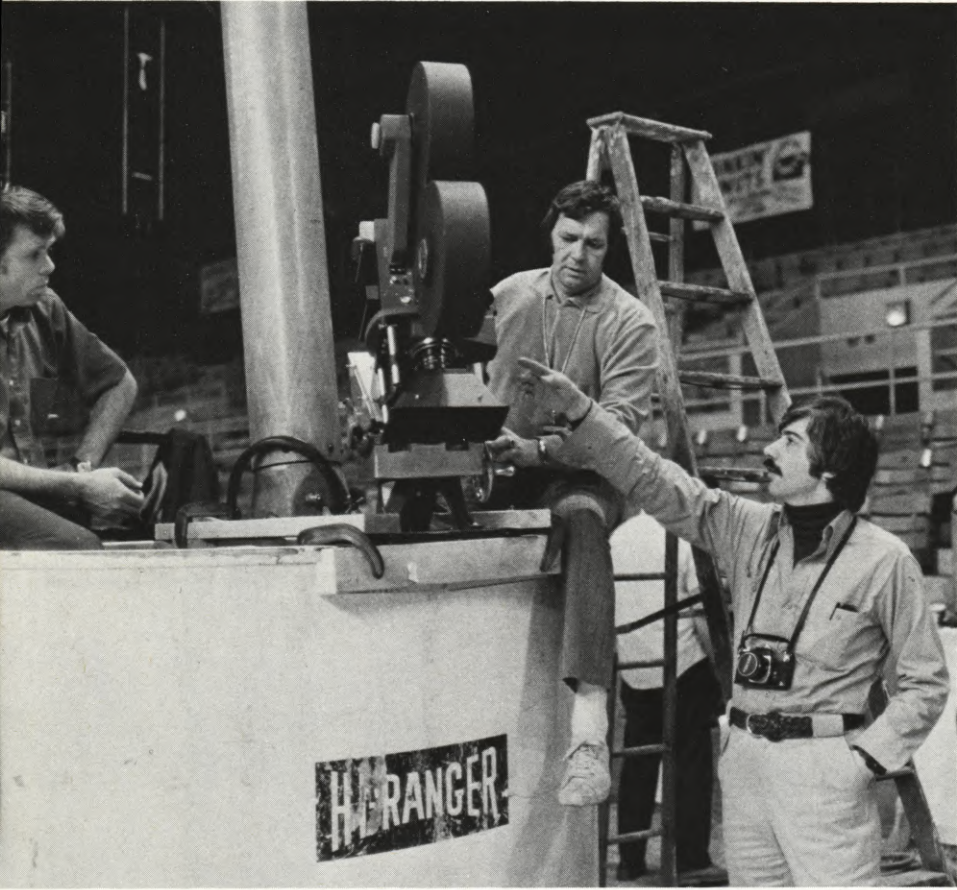
In order to achieve the requisite vertical format to fit space allotted in the Circus Museum, it was necessary to mount a Todd-AO 70mm camera on its side. At first the magazine jammed in this position, but Director of Photography Jack Priestley had experienced the same problem when shooting the old three-strip Cinerama and solved it in the same way—by installing special flanges inside the magazines.







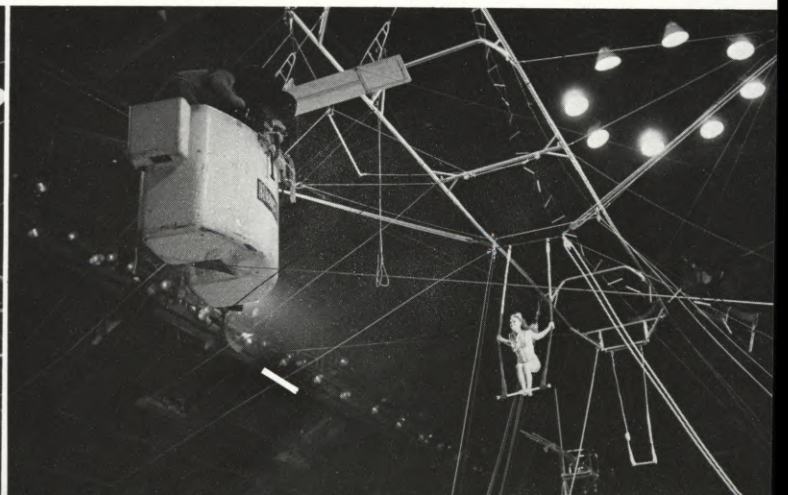
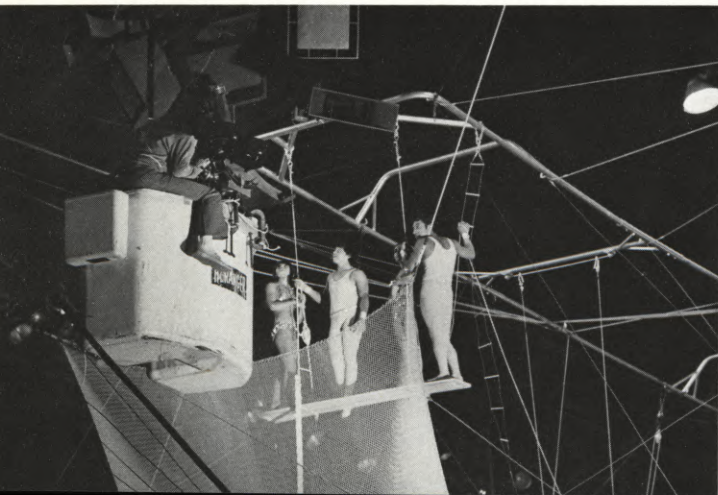
(LEFT) Shooting the trapeze act from about 60 feet in the air. The bucket of the crane moves its way through the rigging to maneuver into a position directly over the flying performers. (RIGHT) The bucket is located above the trapeze artists and the shot is made with the camera mounted in the normal way and panned with the action.



last row 22 feet further back. Considering that we had planned to shoot the film in an intimate, close-up style to present a point of view not obtainable at a live performance and wanted to overwhelm the audience with the intensity of the circus experience, the close relationship of audience to screen was actually desirable. However, since we also pictured a sharp, grainless, highly resolved image, with super-saturated, brilliant color and many complex, special photographic effects . . . the size of the screen and its proximity to the audience was actually a problem. It became evident after much research, discussion and consideration of various formats and film sizes (two 35mm images stacked vertically, three 16's stacked, Cinemascope turned on its side were some of them), that shooting a 65mm original with the camera mounted on its side to create a vertical image was the answer. It would not only produce an original negative of superior quality, but also result in a single-strand film which would make editing, special-effects production, printing and projection less complicated than a multi-strand format.

The search for a 65mm camera that

(ABOVE LEFT) Key Grip Bob Ward, Director of Photography Jack Priestley and the film's creator-director, Greg Dinallo, discuss the rigging of the Todd-AO camera in the bucket of the crane. It is shown here mounted in standard fashion, but for most shots it was secured on its side in a custom mount designed by Gibbons and Priestley and manufactured by Film Effects of Hollywood. (BELOW LEFT) Priestley, tied in and with foot dangling, sets up a shot of the trapeze act. (RIGHT) Shooting from the bucket at the performers' eye-level with a long lens captured the intimate feeling desired. Guy wires attached to the bucket were necessary to keep it perfectly still and level.





could be modified to run on its side led Director of Photography Jack Priestley and myself to Hollywood, and resulted in our decision to use the Todd-AO, 65mm, AP camera which, we agreed, would more easily accept modification than other equipment we had considered. It also brought about the reunion of Priestley and Peter Gibbons, who had worked together in the 50's on the early Cinerama films. At the suggestion of Lin Dunn, President of Film Effects Of Hollywood, we asked Gibbons to collaborate with them in the design and development of a special mount that would secure the "AP" on its side.

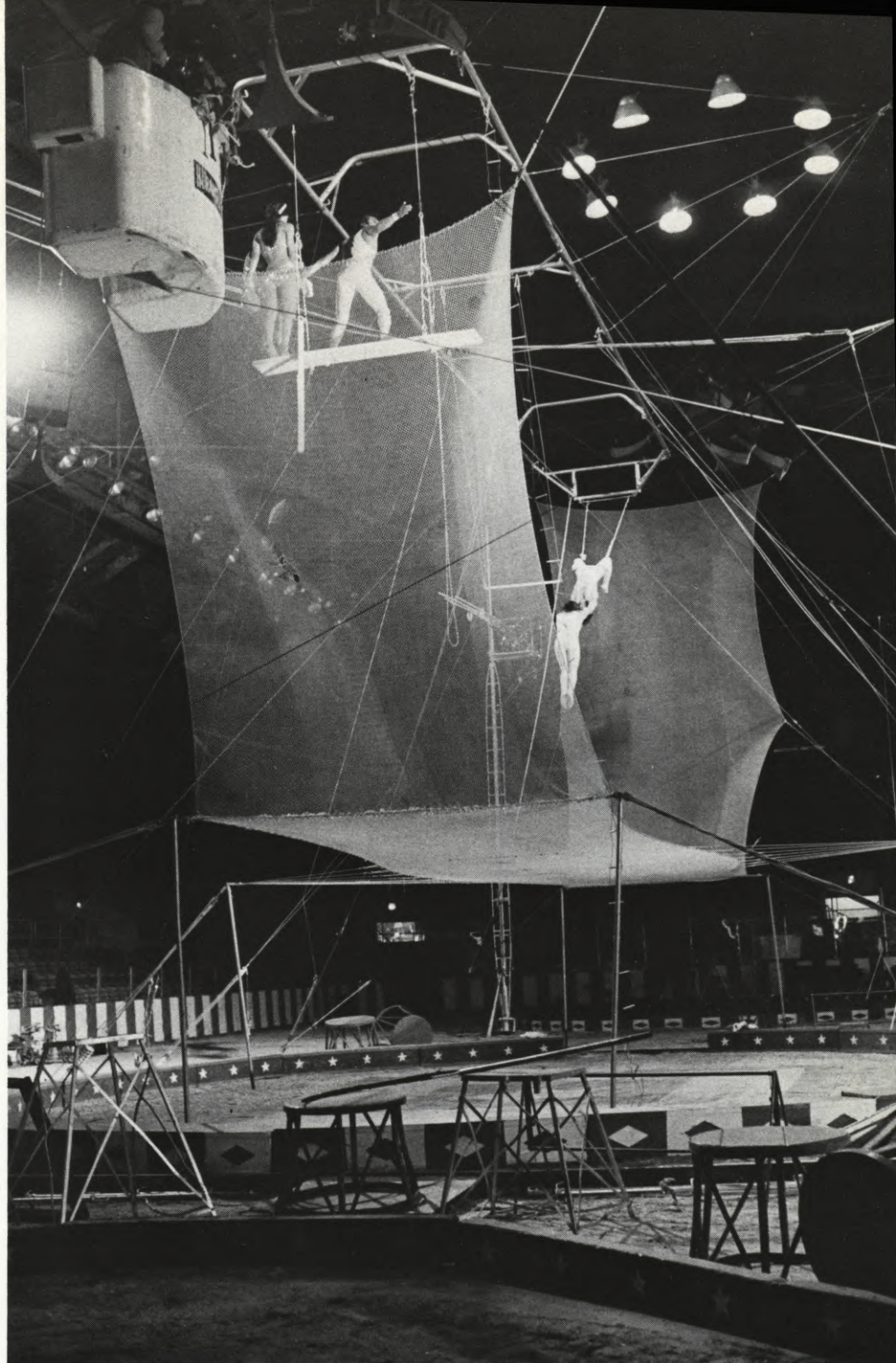
We also asked Gibbons to do some thinking about the magazines, since we discovered through tests that after shooting about 300 feet of stock, an increase in torque on the take-up spindle intermittently whipped the film through the camera faster than 24 frames per second, tearing film and sprocket holes. He solved that problem by fitting both the feed and take-up spindles with support flanges that turned with the stock, eliminating the drag and friction that were causing the problem.

All the modifications were executed by Film Effects of Hollywood, who later produced all the complex special photographic effects and acted as general technical consultants throughout the project.

The successful search for the camera was followed by three weeks of advance preparation, directed by Lou Girolami, Jr., who was in charge of production. He did a flawless job of assembling a fine New York crew, budgeting time and dollars, and coordinating the efforts of the crew, circus performers and circus personnel who worked with us during the shooting. Girolami's planning allowed us to complete all location work in eight days: three days of on-location prep with key crew members (each of whom was working with a set of 8" x 10" story boards), followed by five days of shooting with the full 10-man crew.

For the five days we were shooting, the two modified Todd-AO cameras ran on their sides without a single failure, in spite of the sawdust that was everywhere. Assistant cameraman Fred Shuler became an expert at plastic-bagging cameras in between takes and removing the ever-present sawdust particles from the film gate.

One of the few persistent problems we faced, other than the sawdust and a language barrier with the many European and South American performers, was a very difficult viewing situation created by the vertical position of the



An overall view of the trapeze rigging, with bucket of the improvised camera crane at left. Getting the crane into the arena was a most difficult operation and it could not then be turned around because of the maze of lights, wires and rigging overhead. Ultimately, some of these obstructions had to be temporarily dismantled in order to position the crane for the best camera angles.

camera. It forced us to use an extension eyepiece which cut down on the light transmitted to the ground glass, with maximum loss at the top and bottom of the vertical frame. The poor image in the finder offered even more complication when we became aware of the inability of the human eye to scan vertically as easily and acutely as it does horizontally. Considering the intimate nature of the film—that many of the shots were close-ups of dynamic action requiring critical framing and tracking—we had to spend more time setting up

and rehearsing each shot than we had anticipated. And even with our precautions during set-up, we were never quite sure that we had the shot we were after. Consequently we shot 10,000 feet of 65mm film which we knew would be cut to less than 1,000.

Characteristically, Director of Photography Priestley did a fantastic job, in spite of the sawdust, difficult viewing and demanding shooting positions. He spent one day tied about the waist, his feet dangling 60' in the air over the side  
Continued on Page 188



# DALLAS LENDS "HOLLYWOOD TOUCH" TO "FILM/TAPE HORIZONS"

A stunning short film created for film/tape seminar at the 1972 Atlanta Film Festival becomes a definitive example of what spectacular effects can result when the "marriage" of film and videotape is consummated

By GARY W. JONES

Director of Film Services, WFAA Productions

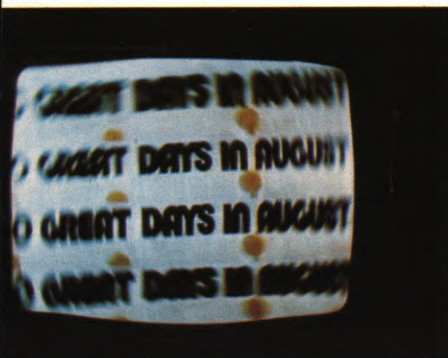
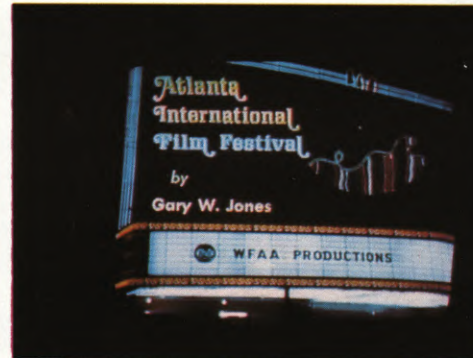
Those of us producing films in America's "hinterland" have good reason to take pride in the emergence of truly professional regional production centers. However, even the most chauvinistic regional producer will admit that the "Hollywood touch" remains the standard against which all motion picture and television production is measured.

Therefore, when someone like Mel

Sawelson—vice-president of Consolidated Film Laboratories—called to ask if he might use a Dallas production to illustrate a couple of Los Angeles speeches he had scheduled, one can understand that we "local boys" were quite flattered.

Mel—who is a recognized authority on the changing technology in both film and videotape production—had seen a

presentation that we at WFAA Productions had produced for some film/tape seminars at the 1972 Atlanta International Film Festival. And he was kind enough to suggest that our "FILM/TAPE HORIZONS" production was just what he needed to show filmmakers at CFI's recent Advanced Film/Tape Seminar and at the Information Film Producers of America national convention.







(LEFT) Film/tape production takes advantage of the economy and flexibility of 16mm location shooting. Traditional film techniques are used throughout the initial production stages. (RIGHT) Instead of the usual film workprint, a helical-scan videotape workprint is made. Each frame number appears in the screen on the tape workprint. Here videotape supervisor Bruce Harris inspects the time-code being generated during the crucial film-to-tape transfer.

It was at the I.F.P.A. gathering at the Sheraton Universal in Hollywood that ubiquitous editor-about-town Herb Lightman saw the WFAA production and asked this writer for some succinct scribbles about the genesis of "FILM/TAPE HORIZONS".

The purpose of the Atlanta seminars had been to discuss how new electronic technology is promising exciting opportunities for film makers in the rapidly expanding horizons of network, local, cable and cassette television (a subject well discussed in the recent special "electronic film-making" issue of *American Cinematographer*).

In particular, we wanted to show how with the advent of videotape time-coding, disc recorders and the like, the best features of film—especially 16mm film—and videotape have been combined into a television production method uniquely suited for an electronic medium.

Obviously, we had to "show" rather than just "tell." As a result, we decided to produce a short presentation which demonstrated the economy and flexibility of 16mm filming—plus the speed and versatility of modern videotape editing. Our production was to be called "Film/Tape Horizons."

Since we knew that our Atlanta audiences would include more creative film-makers and technically-oriented types, we realized that "Horizons" had to reflect imagination and creativity above all else—even though the presentation's purpose was primarily informational. And since WFAA Productions is the largest, most-complete motion picture and videotape production house in the Southwest (Insert Commercial Here), we also knew that "Horizons"

had to be competitive with work of the better-known New York and Hollywood production facilities.

Judging from the enthusiasm and interest evidenced by two afternoon seminar audiences at Atlanta '72, we feel that "Film/Tape Horizons" accomplished its objectives.

Basically, "Horizons" began like any other 16mm project. We used standard Arriflex and Eclair cameras and traditional lighting techniques. However, because of our eventual electronic post-production, we were able to take advantage of EFB 7242 (and its higher ASA rating) and not have to worry about contrast buildup or over-saturation of colors. This, of course, saved a great deal of lighting setup time and allowed for the more "natural" look of good feature motion picture cinematography.

Throughout the filming we would expose a few frames of a black-and-white "chip" chart. This allowed video engineers to set proper color balances before the film was transferred to video tape.

For the electronic post-production we required two high-band quadruplex copies of the original film footage—plus a one-inch, helical-scan tape copy to serve as the videotape "workprint." During the transfer, a time-code generator tagged each television frame—30 per second, of course—with an electronic address. On the videotape workprint the electronic film/tape frame addresses appeared on the screen—superimposed over the video.

The helical videotape recorders (VTRs) enabled us to edit the footage much like film. We could preview footage, look at individual frames, compare frames for matched edits and assemble a

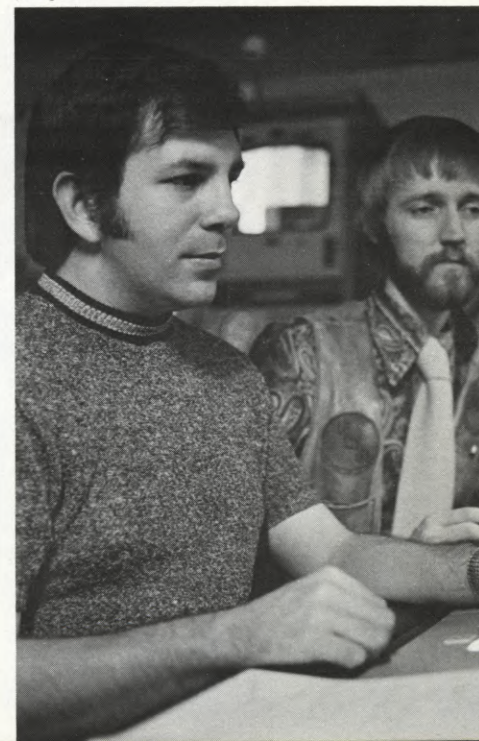
rough-cut workprint onto a second VTR.

Once the workprint met with our approval, we read the start and stop frame-address for every scene on the workprint and entered them—along with dissolve lengths and desired optical effect notations—upon an easy-to-follow worksheet.

Finally, an engineer entered the information into a random access programmer—which automatically found, cued up and transferred the selected scenes from the wild footage rolls to the composite master. We never had to cut

Continued on Page 210

One of the biggest advantages of film/tape post-production is that the editor can see his work come to life with each entry into the programmer. Editor/writer/director Gary Jones (RIGHT) watches engineer Mike Castaneda make a slight change in the original program.





# MCA DEMONSTRATES NEW DISCO-VISION FOR USE ON STANDARD HOME TV SETS

Long-awaited breakthrough of low-cost, high-quality video discs is most impressively launched at press premiere showing in Hollywood

At Universal City, California, on December 12, 1972, MCA Inc. presented a star-filled video disc entertainment at the first public showing of its new DISCO-VISION system.

More than 300 press and industry executives viewed color and black-and-white excerpts from Universal's vast film library shown via DISCO-VISION on the screens of a variety of home television sets.

The presentations were made to approximately 150 members of the press at 11:30 a.m. and a similar number of entertainment, retailing and electronic manufacturing executives at 4 p.m. at Universal's Stage 24.

In addition to ending years of industry speculation on when and how the showing of films on home television sets could be achieved at popular prices, the demonstrations that day took on additional stature with the attendance of the MCA Inc. Board of Directors in advance of a regular Board meeting.

Lew R. Wasserman, President and Chief Executive Officer of MCA Inc., welcomed the guests at both viewings

"to share in MCA's progress report on the research and development of our company's new technology." The demonstration, he pointed out, was not a consumer introduction.

The DISCO-VISION presentation included seven minutes of scenes from 22 musicals, comedies and dramatic motion pictures from Universal's immense film library of more than 11,000 titles, encompassing the years 1930 to 1972, and featuring many of the top stars of those years.

The audiences saw the DISCO-VISION program on brand-name standard home TV receivers.

Preceding each of the demonstrations, John W. Findlater, MCA Vice President and President of MCA Disco-Vision, Inc., described the new home entertainment and information storage and retrieval process, its research, development and history to date. His remarks were as follows:

*We believe we've achieved the ultimate concept in home entertainment and information storage and retrieval*

*systems, and that both the hardware and the software will be sold to the consumer at popular prices.*

*These replicated discs are capable of storing 40 billion bits of information, permitting up to 40 minutes of playing time per side. In fact, it's possible to store the Social Security number of every person in the United States on just one side of one disc!*

*You'll view the disc—one of which I'm holding and another of which you see on the player there—today on standard-brand TV sets which we purchased from local retailers.*

*MCA DISCO-VISION is the first optically-read system to be demonstrated from a replicated disc. We are not working from a master. What you'll see is an end-product demonstration of the disc itself.*

*MCA DISCO-VISION is the first disc system to demonstrate more than five minutes of programming.*

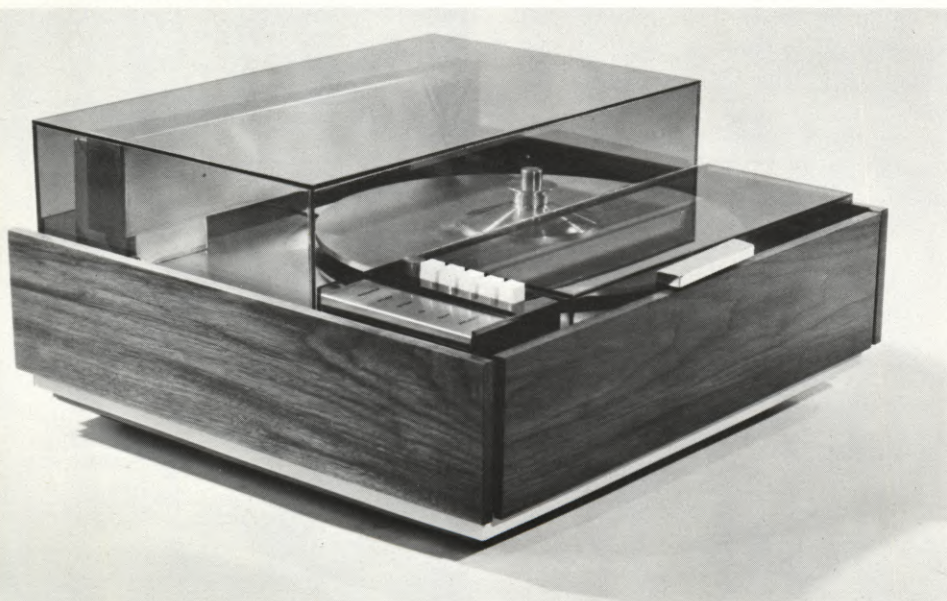
*Today, we're highlighting the entertainment aspects of DISCO-VISION, although there are numerous additional applications for this technology, giving DISCO-VISION an enormous range of business, educational and other uses.*

*The replicated demonstration disc you'll see is a composite of scenes from 22 Universal films—both color and black-and-white, ranging from 1930 to 1972 productions. These subjects span the entire historical spectrum of changing film technology, from the old black-and-white nitrate negatives of the 30's to Technicolor's three-strip nitrate negatives, culminating in Kodak's color negative of the 70's. The ability to produce a balanced uniform print from this heterogeneous mixture of widely-divergent film sources, each with its own different color balance and contrasts, and to transfer each to our replicated disc, confirms the disc's versatility.*

*Both the seven-minute running time and the selection of the 22 titles were arbitrary decisions. We could just as well have chosen 8, 10, 15 or 20 minutes of programming. But it seemed to us that seven minutes constituted a truly representative sample.*

*However, those of you who would like to view a disc with 20 minutes or more of recorded information may con-*

Front view of the MCA DISCO-VISION player which was demonstrated recently in Hollywood for the first time before invited audiences of press and entertainment industry executives. This model, for single-disc play, is of metal construction with walnut grain finish and smoked plastic cover. Its dimensions are 16¾ inches wide x 18 inches deep x 8½ inches high and it weighs less than 40 lbs. The front of the machine has six push-button controls (Power, Play, Stop, In, Out, Reject) which are accessible with the lid closed. A multiple-disc player/changer of similar design and capabilities also was shown. It weighs less than 50 lbs. and has dimensions of 22¾ inches x 18 inches x 11 inches. Discs can be stacked in the player/changer to give the user a playing time in excess of three hours.





tact us after the demonstration and we'll be happy to arrange in-lab group viewings.

SRI—Stanford Research Institute—is making a comprehensive, in-depth study of the manufacturing, marketing and distribution fundamentals for us. We prefer to await their recommendations before making any definitive decisions in these areas.

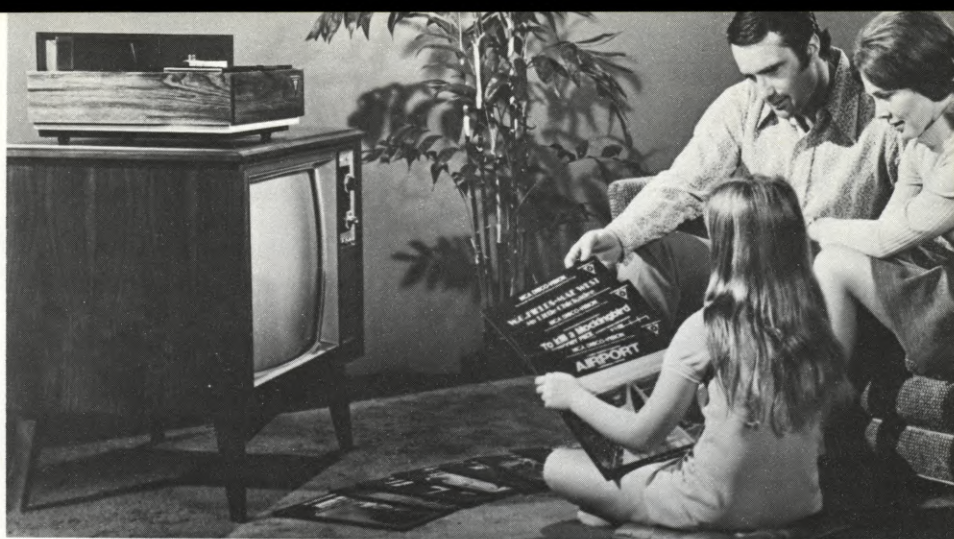
However, since we do want to share our knowledge, ideas, and all available information with you to the utmost of our ability—Kent Broadbent, Vice President of MCA DISCO-VISION, Inc., and director of R and D on this project, and I—both of us—will be available after the demonstration should you have further inquiries.

And now, I'm very proud to present . . . MCA's DISCO-VISION!

There then followed the actual demonstration, in which a standard "for sale" replicated DISCO-VISION mylar disc (not a master) was used to project clips from 22 films (old and new, black and white and color) onto the tubes of six off-the-shelf standard TV receivers, each of which bore the brand name of a different manufacturer.

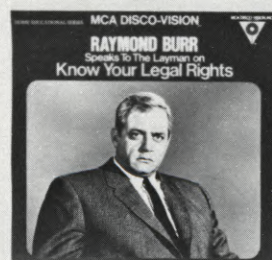
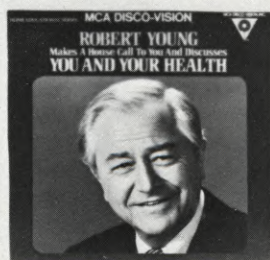
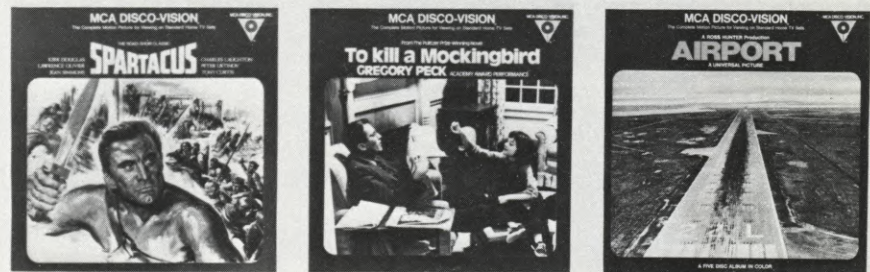
Members of the select press and VIP audience present were obviously much impressed and unanimous in their praise of the system's clarity, sharpness and fidelity of color rendition.

At the close of the formal presentation, guests visited a decorated room setting showing the DISCO-VISION system as part of the home entertainment center. Also on view were sample DISCO-VISION albums, representing a variety of Universal products (full-length features, documentaries, cartoons, short subjects, educational and cultural films, etc.) which the company anticipates it will market on the video disc, as well as several illustrative samples of subjects which will be produced especially for DISCO-VISION.



Room setting illustrates the way the MCA DISCO-VISION player unit will look atop a home television set. Model family is choosing a video disc album for play from an illustrative sampling of program material from Universal's film library. Playback through any standard television receiver is achieved by attaching the DISCO-VISION player or player/changer unit to the VHF antenna input terminals of the TV set and then dialing a channel not used for regular programming. The playback unit employs an optical system with a non-physical contact low-powered helium-neon laser read-out which picks up the images and relays them electronically to the TV screen. The company anticipates it will market the player unit for under \$400.00, the player/changer for under \$500.00, and the video disc albums for \$1.99 to \$9.95, packaged and priced similarly to LP record albums.

This montage of sample MCA® DISCO-VISION™ albums represents a variety of Universal products which the company anticipates it will market on video discs, as well as several illustrative samples of subjects which will be produced especially for DISCO-VISION. The DISCO-VISION system enables various information sources recorded on a thin, flexible disc to be shown on standard home TV screens by means of a relatively inexpensive player/changer attachment.



## MCA® DISCO-VISION™ GENERAL FACTS AND SPECIFICATIONS

### WHAT IT IS:

MCA DISCO-VISION is a new technology whereby a variety of information sources recorded on a thin, flexible video disc can be shown on standard home television screens by means of a disc changer/player attachment. The changer/player unit will provide a minimum of three hours or less and a maximum of 6-2/3 hours of unattended playing time. A single-disc player is also

Continued on Page 212



**The Auricon Camera is a jewel  
of fine craftsmanship...**

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CAMERAS



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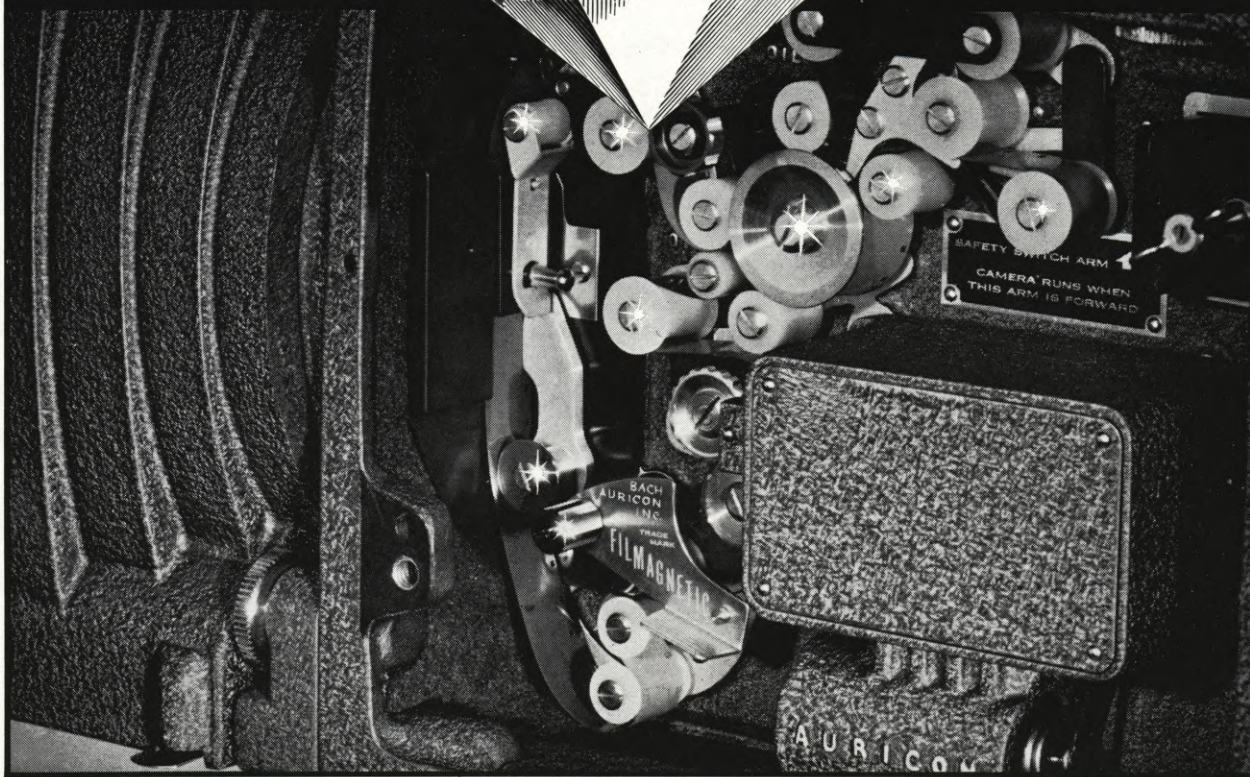


AURICON "PRO-600"  
600 FT. RUNS 16-1/2 MIN.



AURICON "SUPER-1200"  
1200 FT. RUNS 33 MIN.

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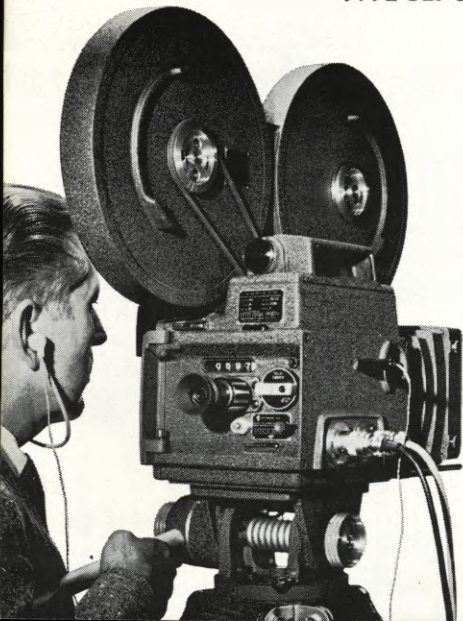


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...and know the real  
satisfaction of filming with  
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The Auricon "Super-1200", like all Auricon 16mm Professional Cameras, is a superb picture-taking instrument. Every precision-engineered part of this finest of all 16mm Cameras is carefully built and assembled with the rare watch-maker skill of old-world craftsmanship, combined with modern, space-age know-how in optics and electronics. The Auricon "Super-1200" actually contains jewels in the Camera-Gate! This polished Sapphire Film-Gate is guaranteed frictionless and wear-proof for in-focus and scratch-free pictures, regardless of how much film you run through the Camera! Among the many professional features of the "Super-1200" is Reflex Ground-Glass Focusing through the Camera lens. All this, and high-fidelity, optical or magnetic, single-system or double-system sound-recording capabilities which are unmatched by any other camera in the world! Write for free, illustrated Auricon Catalog fully describing this rare jewel of fine craftsmanship.



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I can give you five good reasons to buy all your motion picture equipment from me. And one good reason not to.

First, I have a funny kind of relationship with equipment manufacturers. I bug them. I don't let them live until they deliver what I've ordered. And that means my customers never have to bug me.

Second, you won't find any order takers at Mobius. A guy who doesn't know as much about the business (or almost as much) as I do doesn't last here very long. With the possible exception of the secretaries, everyone here is an expert.

Third, you can't do any better, anywhere, on price. If I get a break when I buy, I pass the break-on to you.

Fourth, I service what I sell. If it's cam-

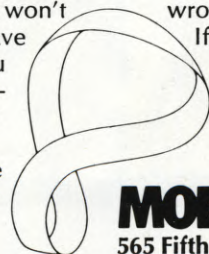
era equipment, you don't have to bring your tale of woe to Arriflex or Eclair or Auricon. Mobius will take care of it. And that goes for our sound equipment, lenses, lights, projectors and editing equipment, as well.

Fifth, I can help you in ways that won't cost you a penny, but that *could* save you a lot of bread. Like helping you with technical problems and showing you how to get the most out of the equipment you already own. Sometimes I can show you that the camera you think you need so desperately isn't really necessary. I may lose a couple of sales, but I

gain a lot of friends.

By now you can see that I'm not just another pretty face. I know my business. And sometimes that's a problem. Don't expect me to peddle whatever you ask for. If you order something that I think is wrong for the job, you won't get it.

If you order equipment not up to my standards, I won't sell that either. In short, I'm hard-headed and some people don't like that. But if I weren't, I wouldn't be Sy Cane.



**MOBIUS** CINE LTD.  
565 Fifth Avenue, New York, N. Y. 10017  
(212) 697-8620



# THE NATIONAL ACADEMY OF TELEVISION ARTS & SCIENCES

## The First Twenty-five Years

By JULIUS D. FEIGELSON

Somewhere in the dim past of electronics, maybe fifty years ago, the thought of taking pictures, transmitting them, and then reassembling them on a receiver at another point was great material for science fiction. But fiction was becoming reality, because, in those days, engineers and scientists were already experimenting with the transmission of picture with sound. To the average man, though, it was still fiction. Radio had just come of age, and movies hadn't begun to talk, but television was being born.

A breakthrough came in 1929 when RCA showed its first crudely constructed receiver. But if you had asked the man on the street if he had seen "television", he would probably have looked at you curiously, then recalling, grin and tell you that sure he had; every Sunday in the *Flash Gordon* comic strip. Television was still relegated to the world of science fiction.

In 1930 Americans were going to the movies in greater numbers than ever, because of the new innovation: moving pictures with *sound*. But also in that year there was a select group that had the opposite: *pictures* with their sound. They had entered into the world of science fiction, because station W2XBS televised to those in New York who had receivers.

Things happened fast after that. In 1931 CBS went on the air with the first scheduled television programming, and by 1947 Americans were hooked to the tune of nearly 180,000 sets. Television was alive and growing at a tremendous rate, and to the dismay of some, it was rapidly replacing radio and the movies.

In those early days the creative, as well as the technical, operations were of necessity handled by the engineers and technicians, but it wasn't long before the skills of the artists were called upon. They came from the stage, from radio and from film, and television was elevated to being more than a novel toy.

Now television was truly an industry. But things were not yet complete, because, unlike the motion picture industry, television had no professional organization for the growing numbers of people it involved. So it was in the summer of 1945 that a young producer by the name of Syd Cassyd began to put together a group that would eventually become that organization. Fifteen months later, seven men held the first organizational meeting in a borrowed room of a television school on Hollywood Blvd. and, in 1947, having received their formal non-profit incorporation papers from the State of California, The National Academy of Television Arts and Sciences was born, with Associate ASC member Edgar Bergen as its first president.

The new Academy did not limit its membership, and anyone in the communications industry, radio, television, and theater was extended an invitation.

In October of 1948 the directors of the Academy announced that the best programs and performances of that year would be honored at a special ceremony



The famed EMMY Award statuette, presented to winners in various categories as a symbol of outstanding achievement in television production or performance.

The annual EMMY Awards Presentation, shown here taking place at the Hollywood Palladium, is a night of glamour and excitement during which their peers pay homage to the artists and technicians who have scored outstanding achievements in television during the past year. The Awards Presentation is telecast for the enjoyment of an avid audience of millions of viewers.





to be held on January 25, 1949. Six awards were given that year in a unique voting method, because, not only did the five hundred members of the Academy send in their ballots, but so did the television viewing audience. Also making its appearance at that ceremony was the newly-created award that would become the symbol of outstanding achievement in television: the "Emmy".

The 1954 Seventh Annual Awards of the Academy was special. This was the first time it would be televised coast to coast. The number of categories had expanded from six to thirty-four, and for the first time an award was given for best Direction of Photography. Lester Shorr, ASC, was awarded the Emmy for the photography of "I Climb the Stairs"; an episode of the *Medic* series.

Television and the Academy have seen monumental strides taken in broadcasting since those ancient times, when men thought it fiction for pictures to fly through the air. Who'd have dreamed that a television audience, sitting in their homes would witness the ultimate broadcast: live television from another celestial body?

1973 will be another landmark for

Edgar Bergen, first President of the Academy, shown with Syd Cassyd, founder and later President, at the Academy's nostalgia night at the Hollywood Palladium.



## EMMY AWARDS FOR BEST CINEMATOGRAPHY FOR TELEVISION

From 1948 to 1953 the category had not been established.

- 1954—Lester Shorr, ASC . . . . . "I Climb the Stairs" (Medic)
- 1955—William Sickner, ASC . . . . . "Black Friday" (Medic)
- 1956—Norbert Brodine, ASC . . . . . "The Pearl" (Loretta Young Show)
- 1957—Harold E. Wellman, ASC "Hemo the Magnificent" (Bell Telephone Science Series)
- 1958-1959—Ellis W. Carter, ASC . . . . . "Alphabet Conspiracy" (Bell Telephone Special)
- 1959-1960—Charles Straumer, ASC . . . . . "Untouchables" (Westinghouse-Desilu Playhouse)
- 1960-1961—George Clemens, ASC . . . . . For various episodes (Twilight Zone)
- 1961-1962—John S. Priestly . . . . . "Naked City"
- 1962-1963—John S. Priestly . . . . . "Naked City"
- 1963-1964—J. Baxter Peters . . . . . "The Kremlin May 21, 1963"
- 1964-1965—William Spencer . . . . . "Twelve O'Clock High" (Entertainment)
- Tom Priestly "The Louvre" (News, documentaries, Information and sports)
- 1965-1966—Winton C. Hoch, ASC . . . . . "Voyage to the Bottom of the Sea"
- L. B. Abbott, ASC . . . . . "Voyage to the Bottom of the Sea"
- Howard Lydecker (Special Photographic Effects)
- 1966-1967—Haskell Boggs, ASC . . . . . "Bonanza"
- William F. Whitely
- L. B. Abbott, ASC . . . . . "The Time Tunnel" (Special Photographic Effects)
- 1967-1968—Vo Huynh . . . . . "Same Mud, Same Blood" (News & Document.)
- Thomas A. Priestly . . . . . "America and Americans" (Cultural Documentaries)
- Ralph Woolsey, ASC . . . . . "A Thief is a Thief"
- (It Takes a Thief) (Entertainment)
- 1968-1969—James Wilson . . . . . "On the Road" (CBS News) News & Document.
- Walter Dumbrow . . . . . "The Great American Novel"
- Jerry Sims (CBS News Hour)—Cultural Documentary
- Lord Snowdon . . . . . "Don't Count the Candles" (CBS News Hour)
- Cultural Documentary
- George Folsey, ASC . . . . . "Here's Peggy Fleming" (Entertainment)

### 1969-1970

#### ENTERTAINMENT PROGRAMMING

- A. For a series or a single program in a series.  
Walter Streng, ASC—"Hello, Goodbye, Hello"—(Marcus Welby, M.D.)
- B. For a special or feature length program made for television  
Lionel Lindon, ASC—"Ritual of Evil"—(NBC Monday Night at the Movies)

#### NEWS AND DOCUMENTARIES

- A. Regularly scheduled News programs and coverage of special events.  
Edward Winkle—"Model Hippie"—(The Huntley-Brinkley Report)
- B. Documentary, Magazine type or mini-documentary programs  
Thomas A. Priestly—"Sahara: La Caravane du Sel"

### 1970-1971

#### FOR ENTERTAINMENT PROGRAMMING

- A. For a series or a single program of a series.  
Jack Marta—"Cynthia is Alive and Living in Avalon" (The Name of the Game)
- B. For a special or a feature length program made for television.  
Lionel Lindon, ASC—"Vanished, Parts I & II" (World Premiere, NBC Monday and Tuesday Nights at the Movies)
- Bob Collins—"Timex Presents Peggy Fleming at Sun Valley"

#### FOR NEWS AND DOCUMENTARY PROGRAMMING

- A. Regularly scheduled News programs and coverage of Special Events.  
Larry Travis—"Los Angeles-Earthquake" (Sylmar V.A. Hospital) (CBS Evening News With Walter Cronkite)
- B. Documentary, magazine type or mini-documentary programs.  
Jacques Renoir—"The Tragedy of the Red Salmon" (The Undersea World of Jacques Cousteau)

### 1971-1972

#### FOR ENTERTAINMENT

- A. For a series or a single program of a series.  
Lloyd Ahern, ASC—"Blueprint for Murder" (Columbo-NBC Mystery Movie)
- B. For a special or feature length program made for television.  
Joseph Biroc, ASC—"Brian's Song"—(Movie of the Week)

#### FOR NEWS AND DOCUMENTARY PROGRAMMING

- A. Regularly scheduled News programs and coverage of special events.  
Peter McIntyre and Lim Youn Choul—"Dacca" (NBC Nightly News)
- B. Documentary, Magazine-type or mini-documentary programs.  
Thomas Priestly—"Venice Be Damned" (NBC)

the Academy: one quarter of a century of service to the television industry. On Wednesday, March 8, 1972, there appeared in the United States Congressional Record a salute to the founder of the Academy, Syd Cassyd, and the Academy, part of which reads as follows:

*"Over the past 25 years, this professional society has functioned in many areas of education, govern-*

*ment, and the television industry. It has set standards of performance and achievement which are recognized each year by the awarding of the famous Emmy Award. Many of the nationally prominent names in the television industry had their first contacts with leaders of the arts and the industry in the halls of the academy meetings."*



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Dallas is a top-ranking film center, and towering high in the complex is Southwest Film Laboratory and SWFL customer service men like Charles Floyd who keep America's 16 MM producers happy. This has been a "happening" for producers using Southwest over the past 20 years. A call to SWFL on your next film will prove our point on: helpfulness — efficiency — speed — accuracy — and above all . . . quality. If you need such service in your 16 MM processing needs, SWFL will restore your faith, and fast. Call us now. Meanwhile, write for your copy of the latest price list.

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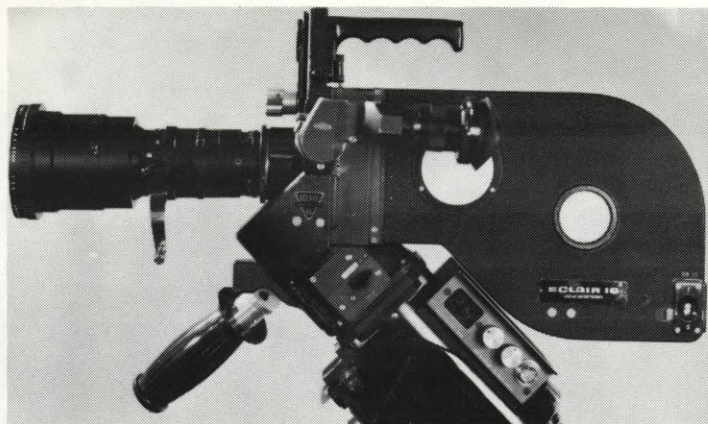
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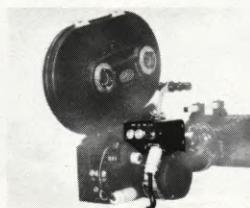


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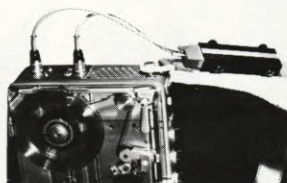
- \* Standard (24 or 25) frame-rate crystal sync accurate to 1/6 frame in 400 ft. of film.
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- \* Automatic shutdown (with override) to prevent out-of-sync operation.
- \* Modification made to existing Ciblo type Eclair motors or, alternatively, available exchange from IDI shipping points Western Hemisphere.

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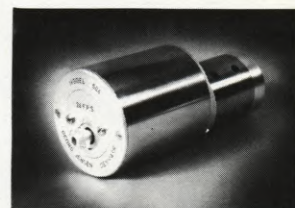
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# YOUR FRIENDLY NEIGHBORHOOD CINEMATOGRAPHER

The Director of Photography for a local television station is a cinematic magician who works on low budgets and short schedules to continue pulling minor masterpieces out of the hat

by JOHN M. COLWELL

Director of Photography, KDFW-TV, Dallas

The big thing these days is features for television. Hollywood miniatures, if you will. These seventy-four-minute epics require the same skill and artistry as their theatrical big brothers—only quicker.

However, these films are still backed by large people with relatively large wallets. But what about that unsung hero who must make every frame a picture working with little or no budget? That person that management calls a freak, and the client calls a maniac—the Director of Photography at the local television station. He's the man that sits in a corner and mumbles because he must re-make *Ben-Hur*... in three days!

At KDFW, we have somewhat of a unique set-up for the Dallas market. Our department, called Creative Services, consists of an art director, writer, production artist, still photographer, and cinematographer. It's a small production unit in itself. We handle all the graphics production that comes through the station. And we use directors from the station if the job calls for it.

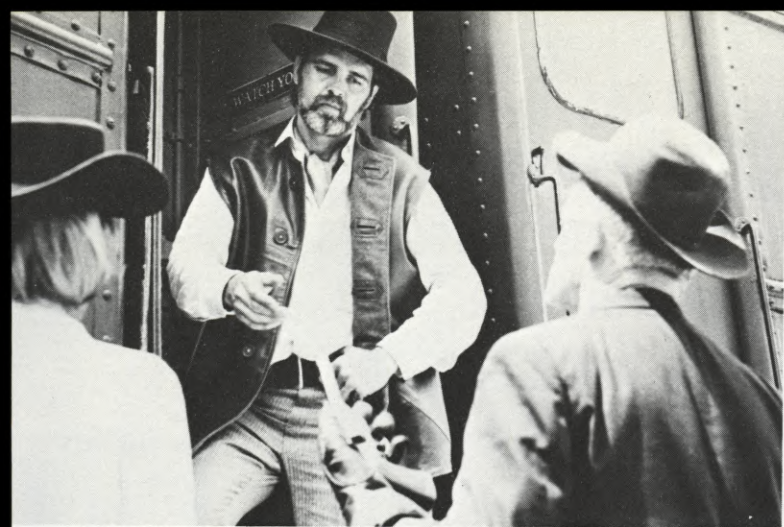
But regardless of the organization,



(ABOVE RIGHT) In a scene from film directed by the author, Weatherman Warren Culbertson tells Charles Haley to put snow chains on his car—in the summertime. (BELOW LEFT) The author sets up a shot on location for promo utilizing early West period photography and a "HIGH NOON" type theme called "HIGH SIX O'CLOCK", directed by John Neal. (RIGHT) Actor Ken Hansen, cinematographer John Colwell and actors Wayne Lindloff and Mark Roberts relaxing between takes of "HIGH SIX O'CLOCK".





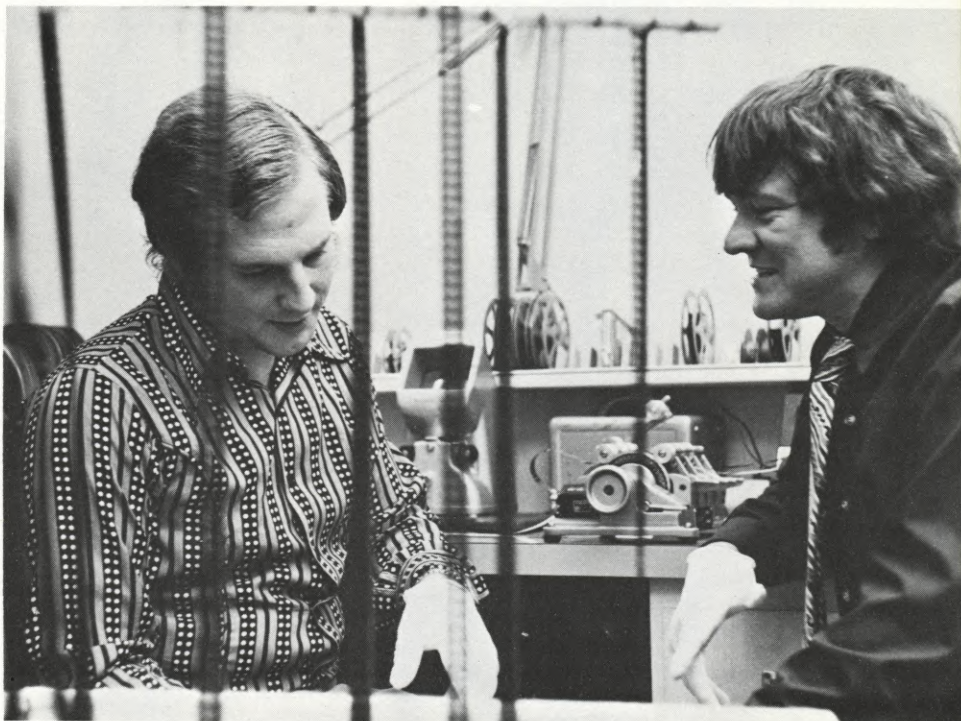


(LEFT) The bad guys meet a bad guy in a scene from "HIGH SIX O'CLOCK". (RIGHT) Low-key lighting used in barroom sequence for the same film, in a set constructed on the sound stage of KDFW-TV. Front-projection is often used to provide backgrounds that are not readily available in the area. KDFW-TV has three large screens that are used exclusively for process photography. The crew shoots both single-system and double-system sound, depending upon the demands of the individual project.

our life is far from simple. As a Director of Photography, I may handle film production for a client in the morning, and then go on location for the station promotions department in the afternoon.

As far as production is concerned, the process is pretty much the same for each project. After an idea is decided upon or a script received, a producer, a director, and Director of Photography get together for a rather lengthy pre-production session. Here, all the problems are worked out, and the necessary items discussed. Then a crew assignment is filled out and work orders distributed to the necessary departments, such as engineering for audio, printing for type-set title cards, or what have you.

We then move to principal photography. We shoot 16mm, on location or in the studio, depending on the requirements or budget. We have had much success with location filming, due to the



(ABOVE RIGHT) The author (left) and director Kerry Richards discuss the editing of a sequence. (BELOW LEFT) Richards and Colwell checking composition of scene for "THIS IS 4 COUNTRY" promotion. (RIGHT) Popular local actor Charles Haley (with beard) and thespians Joanne Dreyer and Jack Harrison in a scene from "THE CUT-UP", a promotion film illustrating the theme, "When it's time for a 4-News Report, everything stops". The spot was directed by the author and filmed on location in an actual operating theatre.





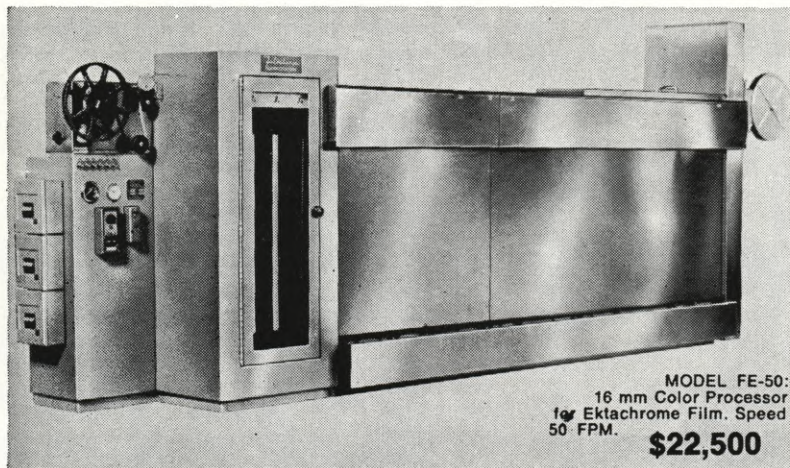
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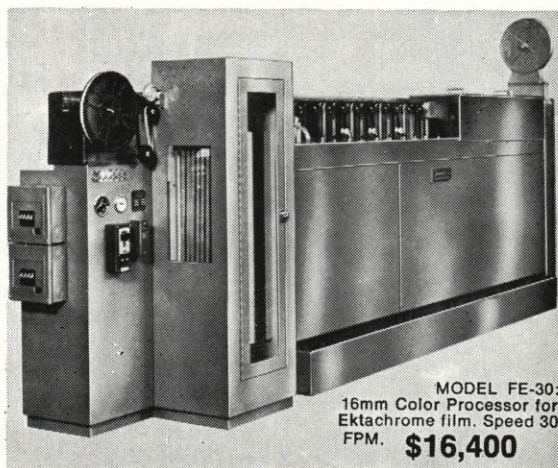
The Filmline Models FE-30 and FE-50 are fast, foolproof, troublefree and long-lasting. They turn out consistently superior work. The design is backed by Filmline's reputation as the world's leading manufacturer of film processors for the motion picture laboratory industry.

Now enjoy the benefits of professional equipment incorporating exclusive Filmline features that have paced the state-of-the-art in commercial, industrial and defense installations at a cost lower than processors offering less.

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16 mm Color Processor  
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50 FPM. **\$22,500**



MODEL FE-30:  
16mm Color Processor for  
Ektachrome film. Speed 30  
FPM. **\$16,400**

● **"FILMLINE OVERDRIVE FILM TRANSPORT SYSTEM"**

This marvel of engineering completely eliminates film breakage, pulled perforations, scratches and operator error. The film can be deliberately stalled in the machine without film breakage or significant change of film footage in solutions. The heart of any film processor is the drive system. No other film drive system such as sprocket drive, bottom drive or simple clutch drives with floating lower assemblies can give you the performance capability of the unique Filmline Overdrive Film Transport System.

● **"TORQUE MOTOR TAKE-UP"** gives you constant film take-up and does not impose any stress or strain on the film itself. Completely independent of the film transport system. This FILMLINE feature is usually found in professional commercial processors but is incorporated on the FE-30 and

FE-50 models as standard equipment. Don't settle for less!

● **"TEMP-GUARD"** positive temperature control system. Completely transistorized circuitry insures temperature control to well within processing tolerances. Temp-Guard controls temperatures accurately and without the problems of other systems of lesser sophistication.

● **"TURBO-FLOW"** impingement dryer. Shortens dry-to-dry time, improves film results, and carefully controls humidity content of your valuable (and sometimes rare) originals. Immediate projection capability is assured because the film dries flat without the usual curl associated with other film processors.

**"ZERO DOWN TIME"** The reputation of any film processor is only as good as its reliability. The

combination of the exclusive and special added Filmline features guarantees trouble-free operation with absolute minimum down-time and without continual operator adjustments. Recapture your original investment in 2 years on maintenance savings alone. Filmline's "Push the button and walk-away processing" allows inexperienced operators to turn out highest quality film.

● **"MATERIALS, CONSTRUCTION AND DESIGN"** All Filmline machines are constructed entirely of metal and tanks are type 316 stainless steel, heliarc welded to government specifications. The finest components available are used and rigid quality control standards are maintained. Compare Filmline features to other processors costing more money. Feature-by-feature, a careful evaluation will convince you that Filmline offers you more for your investment.

### Additional Features included in price of machine (Not as extras).

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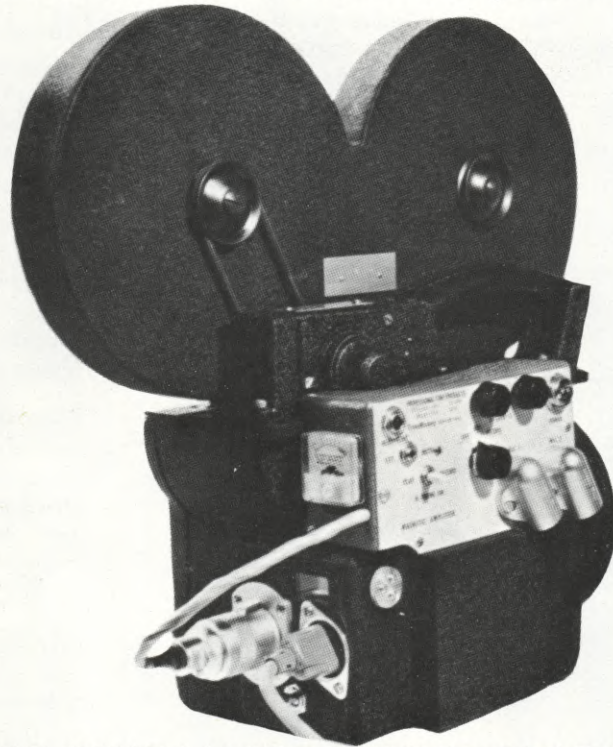
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Compare the above package, including zoom lens, with any other sound camera on the market today. You will find the price to be anywhere from \$1500. to \$3000. *less.*

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# A NEW GENERATION OF SUPER-8 CAMERAS

More versatile and sophisticated than ever, the new Nizo S-560 and S-800 cameras provide a world of creative options for serious Super-8 filmmakers

Since the introduction of the Super-8 format, we have been continually amazed at the degree of sophistication and versatility embodied in some of the high-quality cameras developed for this tiny format. Among the most versatile and sophisticated are two new Nizo cameras, the S-560 and S-800, recently introduced. These handsome machines feature an automatic built-in lap dissolve capability, variable speed shutter and built-in intervalometer, among other facilities.

The cameras' technical characteristics are as follows:

**Lens:** Schneider Variogon f/1.8 fully corrected and with brilliant color contrast.

**Zoom S-560:** 8 to 1, two speed, power, or manual. Zoom range: 7mm wide angle to 56mm telephoto (almost 4x magnification, equal to 190mm lens on

35mm camera). Power zoom time: approximately 5 seconds with "slow" speed, 3 seconds with "fast" zoom speed. Focus remains sharp throughout full zoom range.

**Zoom S-800:** 11.4 to 1, two speed, power, or manual. Zoom range: 7mm wide angle to 80mm telephoto (over 5x magnification, equal to 300mm lens on 35mm camera). Power zoom time: approximately 7 seconds with "slow" speed, 4 seconds with "fast" zoom speed. Accessory extension zooming arm included for assisting in zooming under manual operation.

**Lap Dissolve:** Automated lap dissolve and backwind. Screen time of dissolving scene fade-out, with simultaneous fade-in of the next scene is 3.5 seconds. Lap dissolve is started at any point in the filming by depressing a button on top of the camera. The amount of light reaching the film is automatically diminished

until the film is totally blank. At this moment the camera rewinds the film back to the start of the fade and locks the trigger. The fade-in is started by again depressing the button on the top of the camera and pressing the trigger. Light is now admitted to the film in gradually increasing amounts, double exposing the previously exposed film until normal exposure is reached. From then on, operation is in the regular fashion. Screen effect of a lap dissolve is to gradually superimpose one screen image on the next.

**Fade-In/Fade-Out:** Fade-in and fade-out (without lap dissolve) is available by use of the variable shutter lever. This operation diminishes or increases the amount of light reaching the film, and permits starting or ending a scene with a black screen.

**Filming Speeds:** 18, 24, 54 frames per second. 54 frames per second is instantly available by a button on the filming speed selector dial, providing slow motion override. Release of the button at once returns the filming speed to the set frames per second.

**Variable Shutter Speeds:** Normal operation is at conventional shutter speeds (18 frames, 1/43 second; 24 frames, 1/56 second; 54 frames, 1/128 second) however, for special situations and unique effects, the exposure time of each frame of film may be extended to exposures of 1/8 second to 1 minute. This capability in conjunction with manual selection of the f stop provides an exposure range heretofore unavailable on all but the most sophisticated professional 35mm motion picture cameras. Filming by moonlight or candlelight is now possible. For example: the camera may be adjusted for exposures of f/5.6 at 30 seconds, exposing each frame for 30 seconds. Shutter speeds of about one half normal are also available: i.e. 1/86 and 1/115 sec. with automatic exposure control, and 1/256 by manual control.

**Intervalometer:** Time lapse photography of 6 frames per second to 1 frame per minute at normal shutter speed. (This function parallels the variable shutter speed capability but operates at normal shutter exposure time). Built-in synchronization will fire electronic flash





units for every frame exposed when artificial lighting is required. PC outlet is provided. Flash synchronization also occurs with single frame operation for use in procedures like animation, surveillance, titling, etc.

**Artificial Light:** For indoor movie-light filming a Type A filter conversion control operates manually.

**Automatic Exposure Control:** Behind the lens, CdS cell monitors the light reaching the film and adjusts the camera for proper exposure. Automatic exposure is programmed for 18, 24, & 54 frames per second operation. The automatic exposure control system accommodates film of ASA 10 to 160. Films of other ASA ratings can be used with manual operation.

**Viewfinder:** A large split image range finder in the center of a clear field provides critical focusing. The entire viewfinder image focuses and enables rapid follow-focus. Visible in the viewfinder are: f-stop scale, film advancing and end of film signals, and battery condition test readings for both battery sets.

**Power Supplies:** Normal operation uses 2 wafer cells (PX13) and 6 penlight (AA) cells. We recommend the Alkaline type. However, for extended filming an AC adapter is available, as well as operation from the nickel cadmium power supply battery of Braun F810 electronic flash unit.

**Sound Synchronization:** There is a built-in pulse signal generator for one signal every frame or every 4th frame, for use with tape recorders having 2 sound heads. Cord with connection plug to camera available for individual adaptation to two-track recorders.

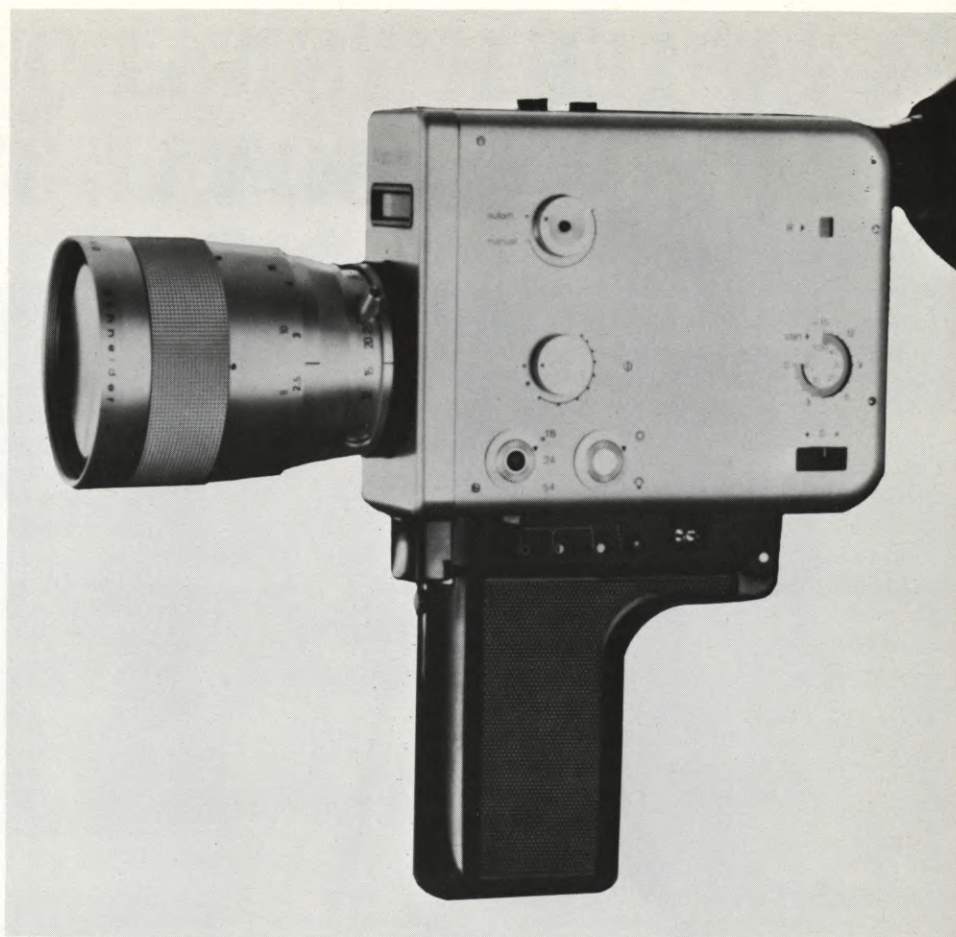
**Remote Operation:** Inter-connecting 30 foot electromagnetic cables provide continuous run or single frame for distances up to 300 feet.

**Other Features:** Folding handle with removable sealed battery case to reduce possibility of battery leakage to camera mechanism.

Built-on wrist strap • Focusing eyepiece with diopter correction • Automatic film footage counter • Cable release socket • Contoured eye cup • Lens cap • Sunshade

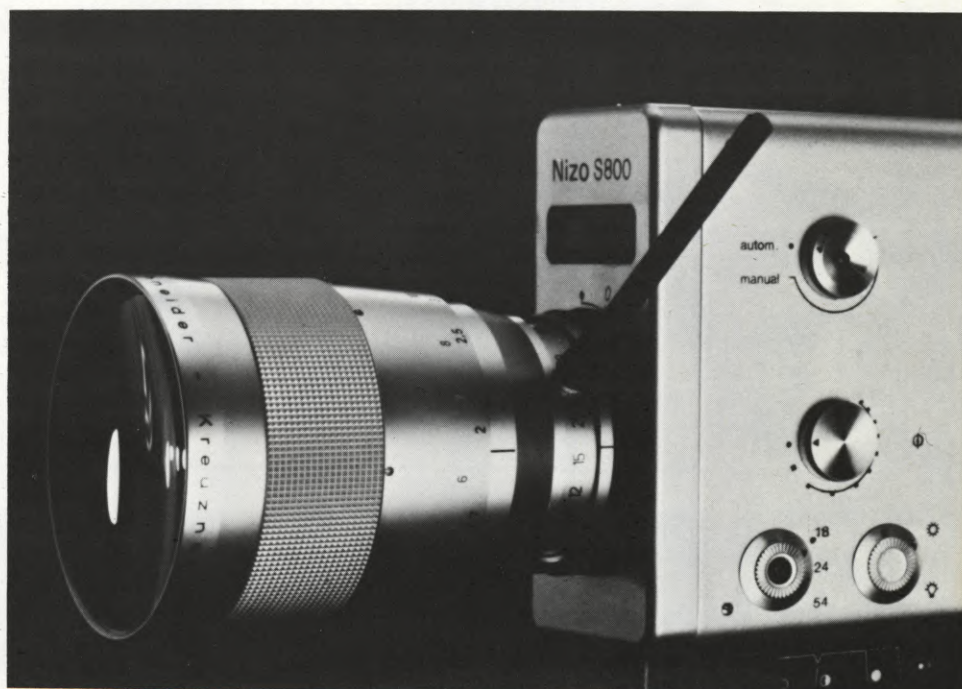
**Optional Accessories:** Leather holster case • Spare Battery Cases • Close-up lenses (3) • Cables for tape recorder • Cables for connection to Braun F-810 battery

For further information, contact: Braun North America, Photo Products Division, 55 Cambridge Parkway, Cambridge, MA 02142 ■



The new Nizo S-800, "top of the line" from Braun North America. Major difference between the two models concerns their respective lenses. The S-560 has an 8-to-1, two-speed, power or manual zoom, ranging from 7mm to 56mm. The S-800 has a 11.4-to-1, two-speed power or manual zoom, ranging from 7mm to 80mm. Both carry an exceptional guarantee which states: "If within two years from date of purchase a Nizo S-560 or S-800 movie camera fails to function because of defects in materials or workmanship and the unit is returned to an authorized service center, Braun North America will, at its option, repair or replace the unit without additional charge. Batteries, misuse or tampering excluded."

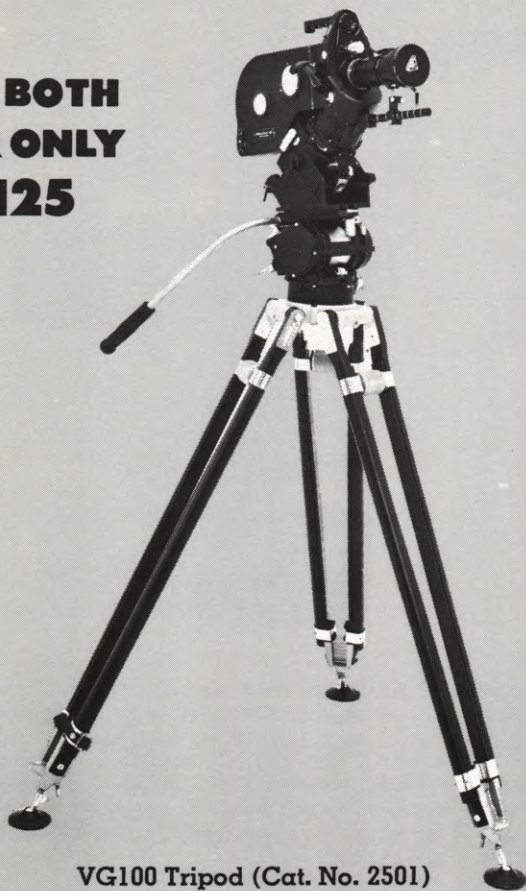
Despite their sophistication and professional features, the new Nizo cameras are very simple to operate and "clean", in that there are only a few controls and meters—all located on the same side of the camera. The two cameras embody the latest in technological advances—several of which were developed by Nizo and remain Nizo exclusives.





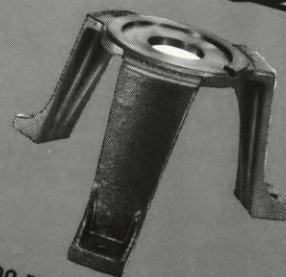
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VG100 Hi-Hat (Cat. No. 1125)

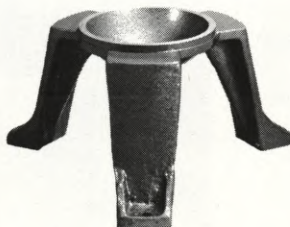
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# John Jay says - "It's the best all-around sports camera on the market by far!"

While filming the International Gelandesprung Championships at Alta, Utah for his feature production, "The World of Skiing," John Jay, John Jay Films, got some sensational footage of spills and aerial acrobatics on skis with the Photo-Sonics 1PD camera at 200 fps, despite a raging blizzard. The rugged camera was totally dependable, and light enough to shoot from moving skis.



This new camera, Model 1PD, designed to meet the more sophisticated requirements of documentation and sports, is a direct by-product of Photo-Sonics' 36-year record of meeting and exceeding the most rigid specifications for cine and high-speed motion picture photography.

#### Outstanding features include . . .

- Rugged construction
- Movement: 2 pulldown, 2 register pins.
- Speeds, 16 to 200 fps, to 500 fps optional.
- Continuous reflex viewing; image always correct. 360° rotation perpendicular to film plane, 360° rotation around viewer centerline.
- Interchangeable ground glasses.
- Clear gate; no spring loading of pressure plate against film.
- 200', 400' and 1200' daylight load magazines

- change in five seconds.
- Designed for use with Arri bayonet mount zoom lens.

#### Optional features:

- Speeds to 500 fps.
- Pistol grip/shoulder pad.
- Electrical switching between any 2 preset speeds.
- Time lapse.
- "Add-on" automatic exposure control.
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# NEIL ARMSTRONG AIR MUSEUM TELLS STORY OF MAN'S CONQUEST OF SPACE

Honoring the first human being to set foot on the lunar surface, unique museum in his hometown traces air and space travel from their earliest beginnings up to the present era

The post office box number is 1978. And everything else about the Neil A. Armstrong Air and Space Museum is equally futuristic. The new facility of Wapakoneta, Ohio, commemorates the home-town boy's historic walk on the moon.

From Interstate 75, approaching visitors see only a glittering white dome surrounded by verdant, rolling, landscaped earth. Inside the museum, an authentic balloon basket, airship, plane, and space-age hardware combine with multimedia effects to impart a capsulized visual history of the role Ohioans have played in getting mankind off the ground.

The most dramatic area by far is the Astro-Theater where viewers sit on carpeted risers beneath a 56-foot-wide dome to watch images float up, down, and sideways from two 16mm Kodak Analyst movie projectors and three Kodak Ektagraphic slide projectors.

Contributing to the illusion are stars projected on the dome's curve from a ball manufactured by Spitz Laboratories

of Chadds Ford, Pennsylvania. There is no narration, only a musical sound track that heightens the ethereal impression that one is venturing into space from a serene hillside.

Operated for the state by the non-profit Ohio Historical Society, the museum cost \$1 million. Half was granted by the Ohio Legislature, and a matching sum was donated by more than 2,500 individuals, companies, and corporations.

The formal opening on July 20, 1972—the third anniversary of Armstrong's lunar landing—was attended by the astronaut, along with Tricia Nixon Cox, who brought a moon rock for temporary display.

The museum attracted an average of 1,700 visitors for the first 10 days it was open, even though there were no announcement signs along Interstate 75 or other nearby highways. The number dropped off sharply after Labor Day but Curator Kathy Minkin reports that attendance still averages 200 to 300 visitors a day.

A typical stream of visitors strolls up the walk toward the distinctive dome of the Neil Armstrong Air and Space Museum at Wapakoneta, Ohio, the town where America's most famous astronaut was born and raised. The museum attracted an average of 1,700 visitors a day for the first 10 days it was open. Though attendance dropped off sharply after the Labor Day holiday, it still averages between 200 and 300 a day.



The beautiful cloud-shrouded Earth, as it appeared to the Apollo 11 astronauts, the first earthlings to view it from the moon.

The last is the figure envisioned by the architects, Freytag and Freytag of Sidney, Ohio, and Wapakoneta native Arthur Klipfel Jr. of Unihab, Inc., Cambridge, Massachusetts.

Klipfel was the official exhibits' designer. The audiovisual software—16mm motion picture film and 35mm slides—was produced by Ogilvie Films, Inc., of Cambridge, while the projectors and audio equipment were custom-adapted and installed by Ralke Company, Inc., of Los Angeles, California.

Admission to the museum is \$1 for adults, 50 cents for unaccompanied children, and there are special group rates. Touring school classes are admitted free.

The flavor of the museum is established even before visitors enter. As they drive into the parking lot—formerly a 13-acre corn field—they see a Douglas





F5D Skylancer, an experimental jet Navy Commander Armstrong flew for the National Aeronautics and Space Administration in the early 1960s. It is one of only two of the jets in existence.

Blue airport runway lights line the walkways inside the building. On the left, visitors enter the first of two main exhibit areas; to the right is the balloon basket used by Warren Rasor, a Daytonian who flew the device during the early 20th century. Exhibit cases near the balloon contain some of Rasor's instruments and a trophy from one of the several major races he won.

A feature of the main exhibit area is the Beech-crafted frame that Toledo native A. Roy Knabenshue rode in his motorcycle-engined airship, Toledo II. Kept aloft by a balloon, the ship was directed by a rudder, with its lift or descent controlled by his position on the open frame.

Primitive as it appears (not to mention dangerous), Toledo II was the first powered flying machine to appear over New York City. Following the 1905 flight, inventor Knabenshue made similar appearances over Columbus and Cleveland.

After studying the exhibits, visitors can look overhead for more information about early aviation. Rear-projected on a 6 x 8-foot screen, images from two Kodak Ektagraphic slide projectors depict that history. The walls behind the exhibits contain blowups of newspaper accounts from the time.

Another static exhibit in this area is a reconstruction of the Wright brothers' Model G Aeroboot. This painstaking, partial re-creation by woodworking craftsmen of the Ohio Historical Society features some authentic sheet-in body plates. Made in 1913, the first such flying boat was test-flown by Orville Wright from the Great Miami River near Dayton. A number of the aquatic biplanes were sold to the Navy and tested.

Beyond the Model G, standing on its tail in a specially constructed pit, is the 1946 Aeronca 7AC Champion Armstrong learned to fly at 16. A card notes that he was taught by Wapakoneta flier Aubrey Knudgard.

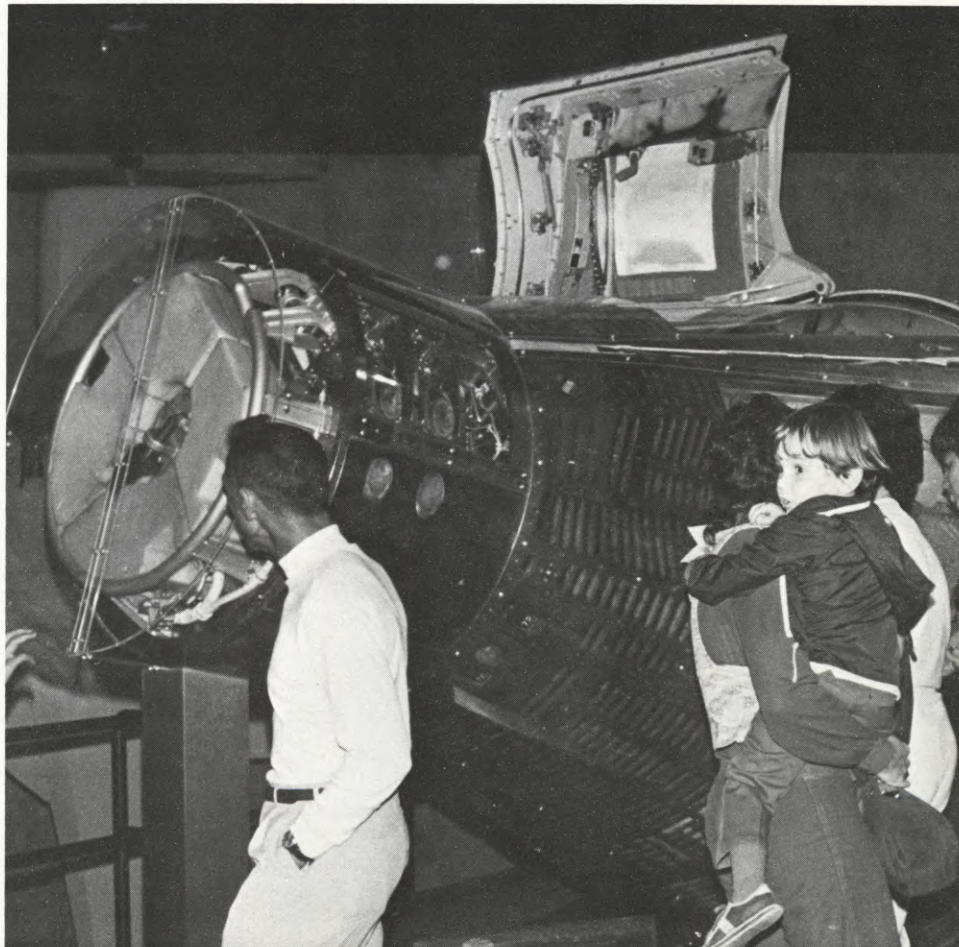
Emphasizing the distance mankind has traveled, a Jupiter rocket engine is displayed next to the Champion. As visitors pass the rocket en route to the ramp that leads to the upper-level exhibit area, they see a second 6 x 8-foot, overhead, rear-projected screen. A Kodak Analyst movie projector displays on the screen duplicated footage from newsreels and other filmed records of early flights.

The feature exhibit of the elevated  
**Continued on Page 190**



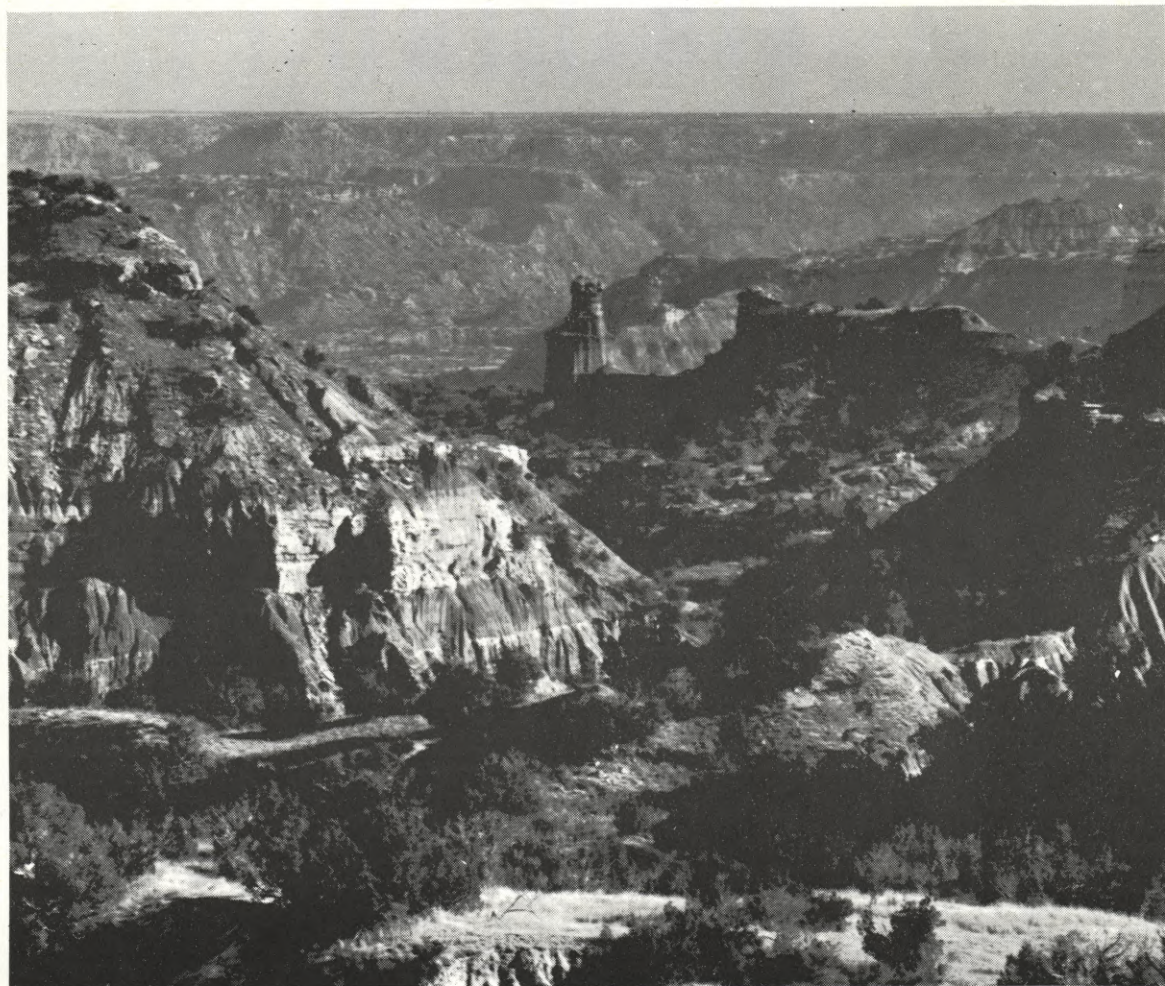
The crew of APOLLO 11, astronauts Neil A. Armstrong, Col. Michael Collins and Col. Edwin E. Aldrin, Jr. Shortly after their triumphant return from the moon, all three astronauts were awarded Honorary Membership in the American Society of Cinematographers in recognition of their magnificent photography and cinematography achieved for the first time in the unique and challenging lunar environment.

Visitors to the Neil Armstrong Air and Space Museum are intrigued by the Gemini 8 spacecraft in which Armstrong and David Scott orbited the earth for two days in the first space-docking mission in March, 1966. The most dramatic area of the museum is the Astro-Theater, where visitors sit on carpeted risers beneath a 56-foot-wide dome to watch images float up, down and sideways from two 16mm Kodak Analyst movie projectors and three Kodak Ektagraphic slide projectors.





# The unshot Grand Canyons...



## of Texas.

Admit it. When you think of Texas canyons, you picture a pass for heading 'em off in. Right?

Fact is, Texas has some real scene stealers. Like Palo Duro. McKittrick. Capote. You get a dozen choices.

You also get your pick of Royal Gorges. Santa Elena. Mariscal. Boquillas. All with purple velvet backdrops of High Sierras.

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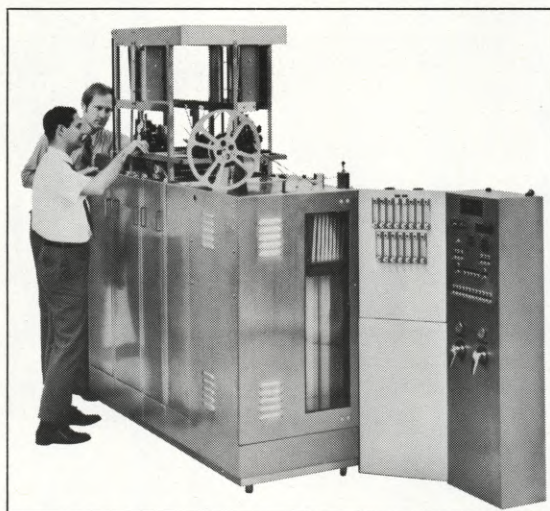


We build from basics to give you more features, more versatility, more field-proven dependability and more economy than any other processor.

# Jamieson Color Film Processors.

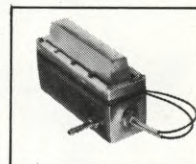
**Basic features of all Jamieson color film processors that give you the ultimate in reliability, simplicity, and high quality output.**

- Advanced design technology
- The industry's gentlest, most reliable film transport system
- Patented tube tanks of PVC
- Minimum chemistry requirements
- Precise temperature control
- High levels of induced turbulence
- Fully instrumented
- Automatically controlled
- Fast warm-up time
- Small sizes that save space
- Modular construction
- Stainless steel cabinets
- Color coded plumbing and wiring

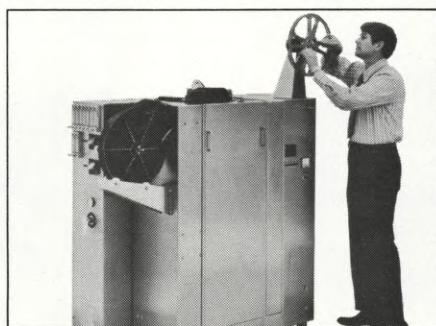


**Jamieson Mark IX, Model B.** Conducts ECO-3 and ME-4 for all 16mm, 8mm Ektachrome camera and print films at 65 to 75 f.p.m. Other models in the Mark IX series for Eastman Color and other processes in 16mm and 35mm.

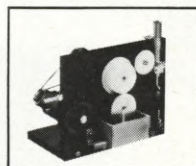
**There's a Jamieson color film processor in the size you want, for the process you want to conduct. For complete technical data and specifications on the Mark IX series, Mark IV series, and Compac models, write for our catalog on Jamieson Color Film Processors.**



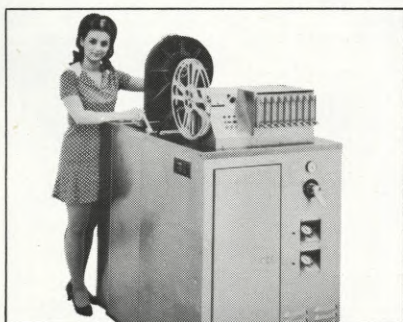
**Jamieson Ultra-High Velocity Pre-Dryer.** Utilizes capillary accelerators to produce high air velocity for surface moisture removal. Small size, easy mounting, small air volume, minimum heat input and low power consumption.



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**Jamieson's Vacuum Augmented Track Applicator\*.** Provides absolute film positioning, highest reliability through vacuum assisted contact at back-up roller. Gives maximum power for uniform film drive. Precision machined, micrometer adjustments, right- or left-hand operation.  
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**Jamieson Compac 16/8.** Conducts standard ME-4 at 20 f.p.m. Runs 16mm and 8mm interchangeably. Also available for 35mm/16mm. Other Compac models for B & W reversal and negative/positive.

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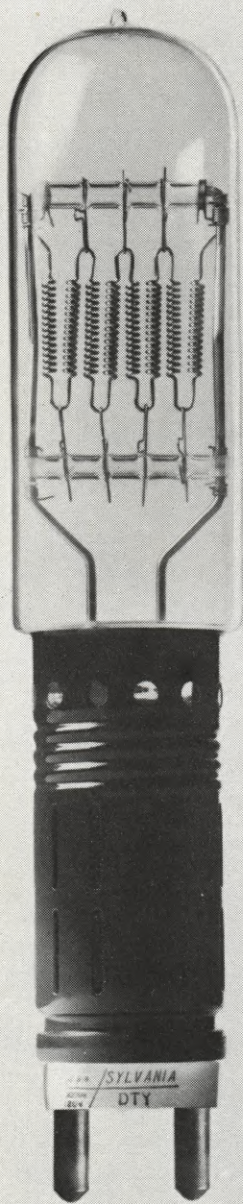


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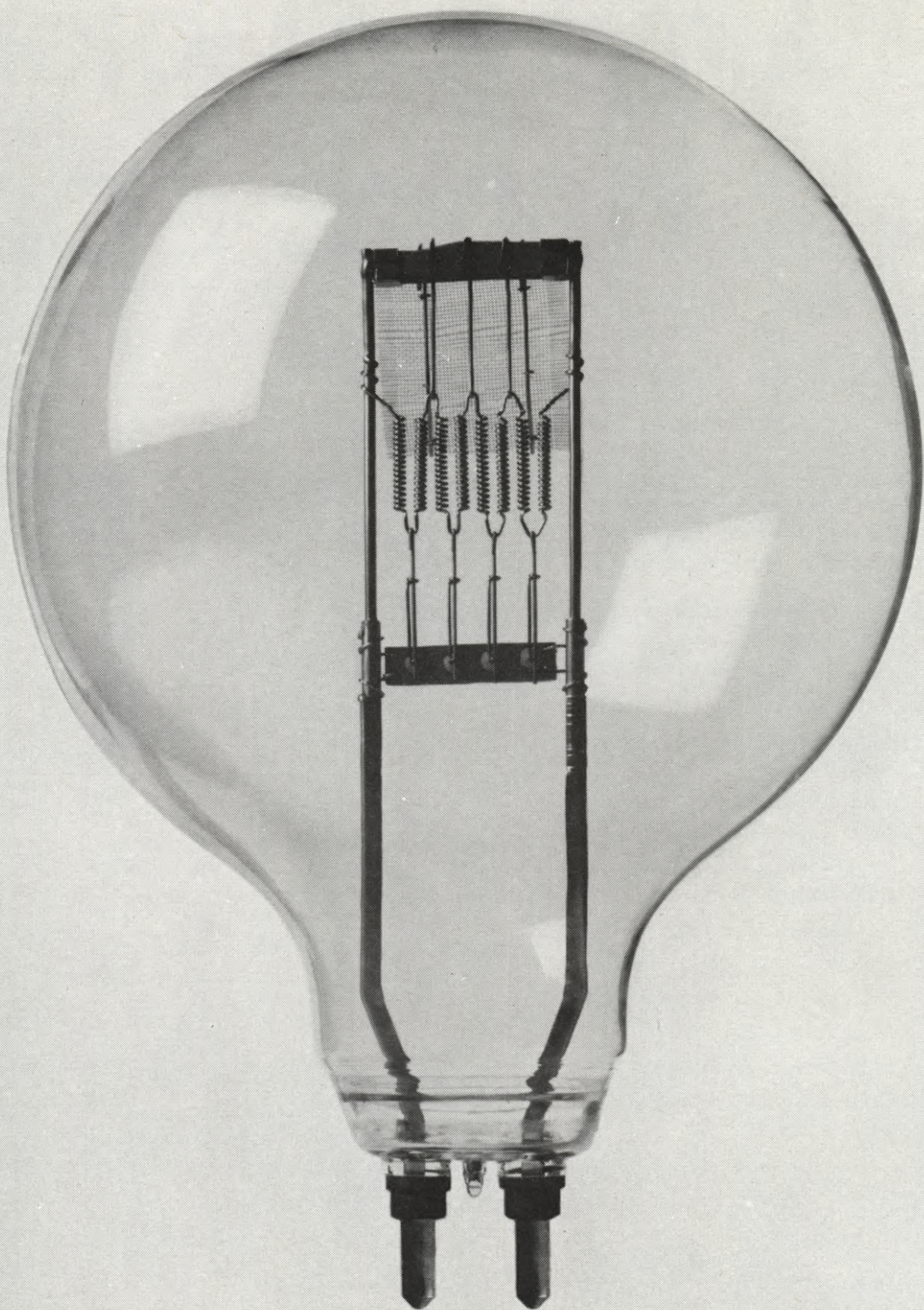
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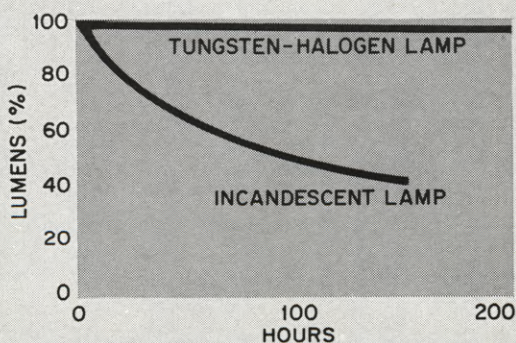




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10 KW INCANDESCENT LAMP.



**WE'VE CONQUERED THE DROOP.**

If you've ever watched those big, fat incandescents deteriorate, you know what a big, fat pain-in-the-neck that is. Their lumen output sinks and their color temperature drops, as the graph shows.

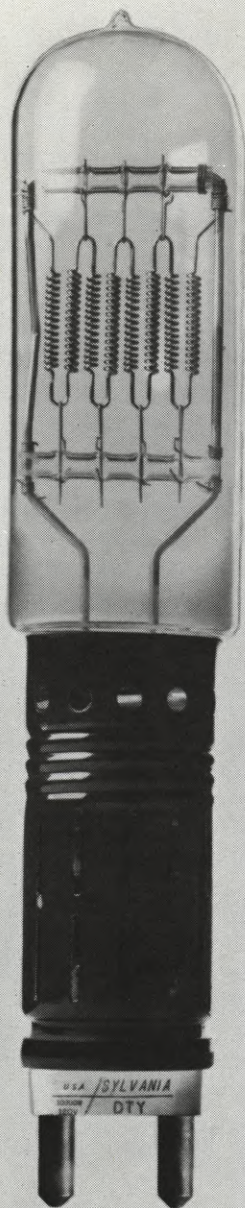
Now Sylvania tungsten-halogen lamps have come to the rescue.

They don't blacken with age, so light output and color temperature don't go into a slump.

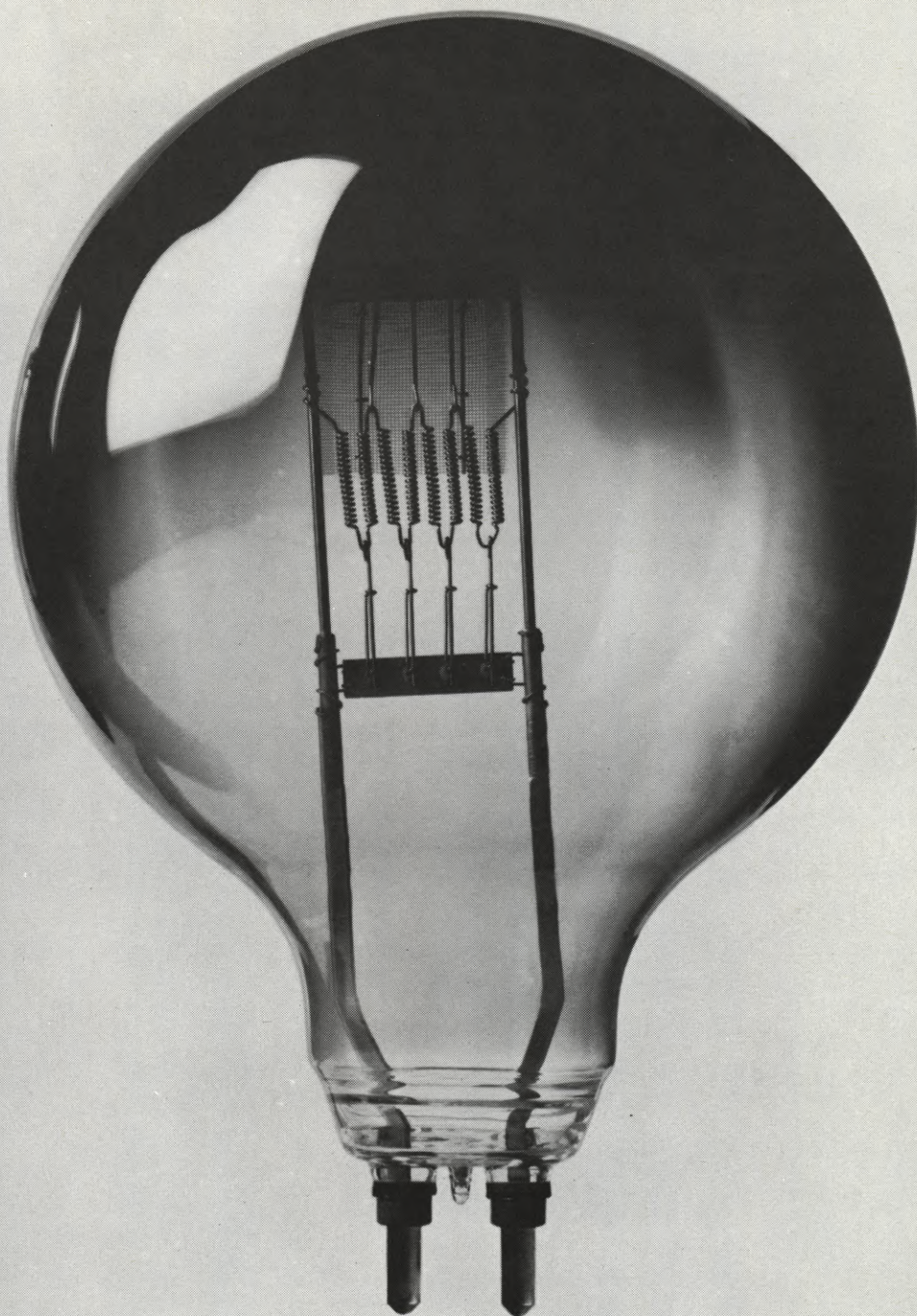
That means you don't have to keep



# 70 HOURS LATER.



10 KW TUNGSTEN-HALOGEN LAMP.



10 KW INCANDESCENT LAMP.

fiddling with the studio lights or camera settings. You get constant color rendition on color film and save money on print correction.

Tungsten-halogen lamps outlast the incandescents 2-to-1. (Or even 3-to-1, since you may have to throw away the blackened lamps before they conk out.)

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lamps that are easy to handle and store?

We've developed two complete lines of Sylvania tungsten-halogen lamps.

The first is a line of direct replacements. These lamps fit into the big, old sockets vacated by the big, fat incandescents.

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you've gotten rid of the old sockets and fixtures. They fit into entirely new, smaller, more efficient fixtures.

Ask us about both our lines. Right away.

Before another 70 hours go by.

*We'll be glad to send you an illustrated brochure on each line. For your copies, write: Sylvania Lighting Center, Danvers, Mass. 01923.*

**GTE SYLVANIA**



# ON TRANSPORTING A CAMERA FROM ONE ROOM TO ANOTHER

From-here-to-absurdity, tongue-in-cheek spoof only  
half jokes about certain film-makers who insist upon  
turning a simple problem into a big production number

By TIMOTHY WADE HUNTLEY

The Problem: We wanted to get the tripod and camera into the adjoining room. It seemed simple enough, but each time we tried to carry it through the door, the widely spread legs of the tripod jammed in the narrow opening, making it virtually impossible without actually removing the spreader and collapsing the legs into a narrower format. The camera was not very heavy, but it was delicate, and cameraman Bill Roberts decided not to fold the legs of the tripod while the camera was still mounted because, as he put it, "... the whole thing might just fall over and go..." So we were stuck.

Needless to say, wasted time can be very expensive when you have all the actors and the cameraman, assistant cameraman, sound man, boom man, gaffers and grips waiting idly by. However, things could have been worse. Fortunately we lost only one day's shooting. That night, Bill Roberts and Mike Haddley, our boom man, who knows a thing or two about heavy objects on the end of a pole, came up with a brilliant solution to the problem. "Why not," he suggested, "remove the

camera from the tripod and carry it separately through the door and then go back for the tripod?"

His theory was that it wouldn't matter if the legs were closed AS LONG AS THERE WAS NO CAMERA MOUNTED ON TOP. The reasoning is complex, but basically it harkens back to the old laws of physics, i.e.: the lower the center of gravity (CG), the more stable the balance. By removing the camera, the effective CG of the tripod is lowered 28%. (This varies with different cameras.) The CG point can be determined by balancing the camera and tripod using a substitute weight for the camera. We used hamburger, as the weight is clearly marked on the package, and also because it is easily adjusted, simply by adding or subtracting the appropriate amounts while watching the needle on the scale. Then, by placing the hamburger on the tripod head, and balancing the tripod lengthwise across a thin support like the back of a chair, the CG can be simply located. Note: The point where balance is at last achieved coincides with the CG. We put a piece of tape there and labeled it "CG-Bolex."

It is a good idea to mark one, two, or all three legs of the tripod, indicating the various CG points for all the different cameras in your collection. This can save hours of costly production time later on.

Knowing the CG's of the tripod with and without the camera is indispensable information when it comes time to position hands for lifting. However, it is not the entire solution, as we were quick to discover the next day on location after a sleepless night calculating CG's. "Where should we put the camera?" shouted Jim Walker, our grip, and George Ekard, our assistant cameraman, to the rest of us, Mark Carson, John Beggly, Harold Lossen, and Jane Walker, Jim's wife (who held slates and made out camera reports and generally made the location a little more pleasant just by being there) and myself, in the adjoining room.

"In here," I said. But, of course, when they brought the camera in, there was no suitable place to set it down. It was not very heavy, as previously indicated, but we considered it to be the most valuable single piece of equipment on the set, and certainly the most important, aside from the actors themselves.

"Set it down over here," John Beggly said, indicating a place on the floor, but we all vetoed his suggestion. Everyone felt that the floor was too near people's feet and therefore unsafe for anything as delicate and valuable as the camera.

"Well, we can't stand here all day holding it," said Jim Walker, and, although his pay was the lowest of anyone's there, standing opposite him, holding the other side of our Bolex was George Ekard, our assistant cameraman. The combined pay of these two men, computed over one day, made it economically unfeasible to have them standing there holding the camera even for just a few hours. We had to come up with something.

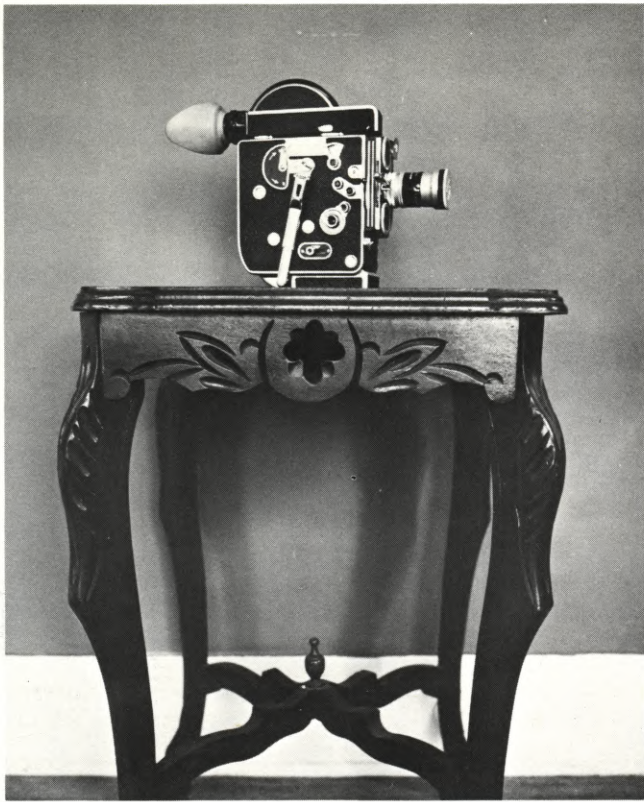
"Tell you what," said Bill Roberts, bleary-eyed after spending the whole night working out CG's, "set it over here." We all saw him pointing to a small end table which had been shoved

Continued on Page 209

Not really knowing which way to turn, tremulous film-maker Mike Haddley (right) and sturdy Grip, Jim Walker, search for a safe place to set the precious Bolex camera down. A picture just can't be made without the expertise of the hard-working Grip.



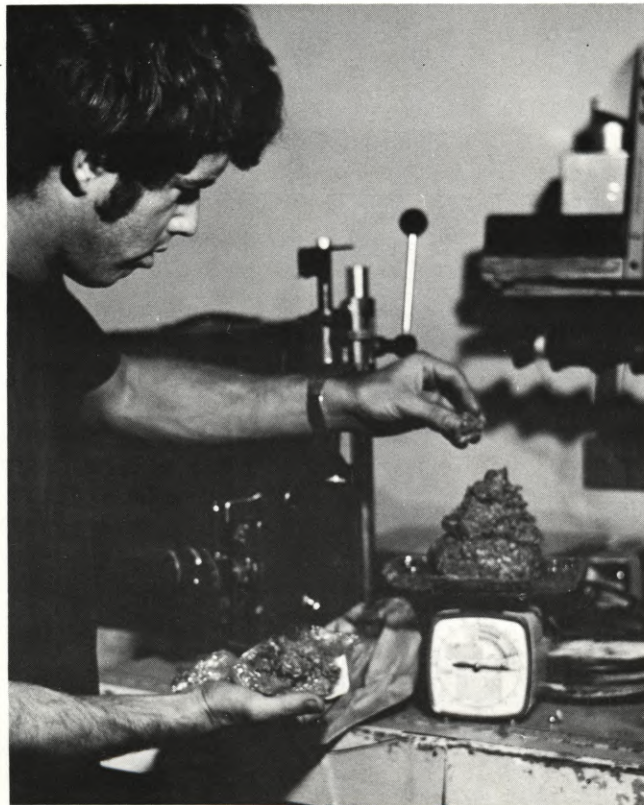




(LEFT) Problem of where to set the camera down was solved by placing it carefully on a trusty end table, which had been shoved in a cavalier fashion against the wall. Bolex is shown here standing boldly in its upright position, but it is recommended that it be set carefully on its side during normal "rest" periods. After all, the camera is the single most important piece of equipment on the set—aside from the actors themselves. (RIGHT) Members of the crew struggle to get tripod-mounted camera through the doorway. Brilliant final solution was to remove camera from tripod and carry it through separately.

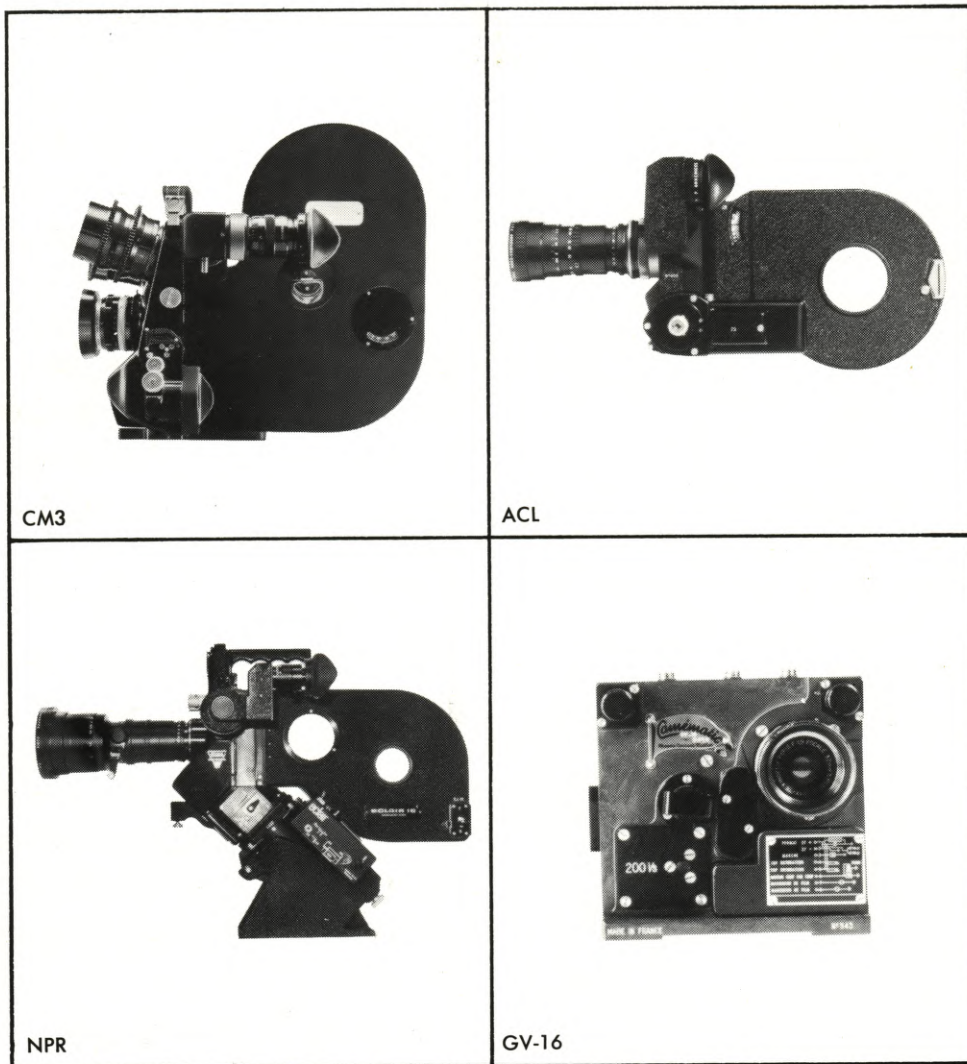


(LEFT) With utmost precision, Haddley weighs hamburger to be used as substitute weight for determining center of gravity (CG) of camera, when mounted on tripod. Hamburger proved to be ideal material for this purpose, because the weight is clearly marked on the package and it can be easily adjusted simply by adding or subtracting the appropriate amounts while watching the needle on the scale. (RIGHT) Bill Roberts points to CG (Center of Gravity) point of the tripod, with substitute weight (in hamburger) equaling the weight of the Bolex camera. The scientific method triumphs again!





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# PREPARATIONS GETTING UNDERWAY FOR AMERICAN BICENTENNIAL CELEBRATION

Emphasis on the arts in depicting America's past and way of life should offer opportunities for creative expression to film-makers

A preliminary edition of "Festival USA," a 32-page document describing one aspect of the approaching Bicentennial commemoration of our nation, has been released by the American Revolution Bicentennial Commission (ARBC).

Festival USA is one of three themes employed by the Commission to inspire involvement in the 200th Anniversary. It is a nationwide effort to share with other Americans and the people of the world the traditions, the culture, the hospitality and the character of the United States and its people.

The two other themes are Heritage '76, a nationwide summons to recall our heritage and to place it in its historical perspective; and Horizons '76, a nationwide challenge to every American, acting individually or with others, to undertake at least one principal project which manifests the pride, the priorities, and the hopes of his community.

Festival USA Chairman George Lang emphasized the preliminary nature of the document; that its purpose is to elicit new dimensions, directions and ideas for the program to be incorporated in the final version of the publication.

The ARBC was chartered by Congress (P.L. 89-491) to "plan, encourage, develop and coordinate" the commemoration of the 200th Anniversary of the founding of the Nation.

## INTRODUCTION

The American Revolution Bicentennial Commission was chartered by Congress (P.L. 89-491) to "plan, encourage, develop and coordinate" the commemoration of the 200th anniversary of the founding of the United States of America. In its 1970 Report to the President, the Commission set forth certain guidelines, goals and themes. The Commission stated that:

- ★ The Bicentennial should be national in scope with an appeal which would make every American and all friends of America eager to participate and to contribute.
- ★ The commemorative era should extend to 1987 which marks the 200th anniversary of the signing of the Constitution: the focal year of that era should be 1976.
- ★ The Bicentennial is a time to review and reaffirm the basic prin-

ciples on which the country was founded.

The goal of the Bicentennial commemoration is to forge a new national commitment—a new Spirit for '76—a spirit which vitalizes the ideals for which the Revolution was fought, a spirit which will unite the nation in purpose and in dedication to the advancement of human welfare as it moves into its third century.

The Commission also sees the commemoration as embracing three themes:

*Heritage '76*—A nationwide summons to recall our heritage and to place it in its historical perspective. Through Heritage '76 programs, all groups within our society are urged to reexamine our origins, our values, and the meaning of America—to take pride in our accomplishments and to dramatize our development.

*Horizons '76*—A nationwide challenge to every American, acting individually or with others, to undertake at least one principal project which manifests the pride, the priorities, and the hopes of his community. The Commission encourages every group, especially our youth and those young in spirit to pool their resources and their talents in a constructive effort to demonstrate concern for human welfare, happiness and freedom.

*Festival USA*—A nationwide effort to share with other Americans and the people of the world the traditions, the culture, the hospitality, and the character of the United States and its people.

## STATEMENT OF PURPOSE

The Bicentennial celebration is an opportunity to arouse in the people of the United States a renewed sense of community and confidence strong enough to embrace the diversity in origins and traditions which form the nation. What dimension does Festival USA offer to this opportunity?

Festival USA is a communion, a nationwide joining of hands, which finds its impetus in the pattern of the present. Yet, it is also a thanksgiving for our cultural pluralism and an affirmation of belief in a dynamic spirit that will continue to nurture our unfolding civilization. Festival USA then is a solemn and joyous celebration. It is a

Festival of people and the multiplicity of their ideas, their expressions, their interests which best convey the diversity of our culture, the warmth of our hospitality, the vitality of our society, the traditions we draw on and the traditions we create.

The United States has really always been people, millions of people residing in thousands of places, living hundreds of styles. On the occasion of her 200th anniversary, the United States is best experienced, best shared and best understood through her people. This is the essence of Festival USA. It is the people that we celebrate—not the institutions, not the deeds, not the events, however compelling; not the technological achievement, however striking; not the leaders or the giants, however worthy. These are found in other aspects of Bicentennial planning. Festival USA is firmly focused on people, all the people, we the people.

Festival USA is colorful for we are a variegated people.

It is creative for we are an ingenious people. It is vigorous for we are energetic. Above all, however, Festival USA is a living experience; vitality and interaction are its key attributes. To savour it, one cannot watch from afar.

There must be opportunities for face-to-face participation—to see, to sing, to touch, to dance, to discover, to explore, to get to know each other, to experience first hand. The continuing interchange and movement of people and their expressions are basic to all efforts in Festival USA.

## GUIDELINES FOR PROGRAMMING

To construct a program which will encourage an understanding and a celebration of the genesis and genius of our culture, certain fundamental guidelines can be enumerated.

First is to identify the traditions, both new and old, which convey and give life and identity to our multifaceted culture. "Culture" in this context should be construed in the broadest sense, embracing the ideas, interests, pastimes, skills, arts, customs, and expression of the people. Care should be given to seeking out those components of our culture which:

- Have their roots in other lands
- Are the singular creation of the

Continued on Page 220



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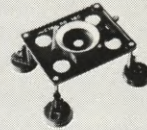
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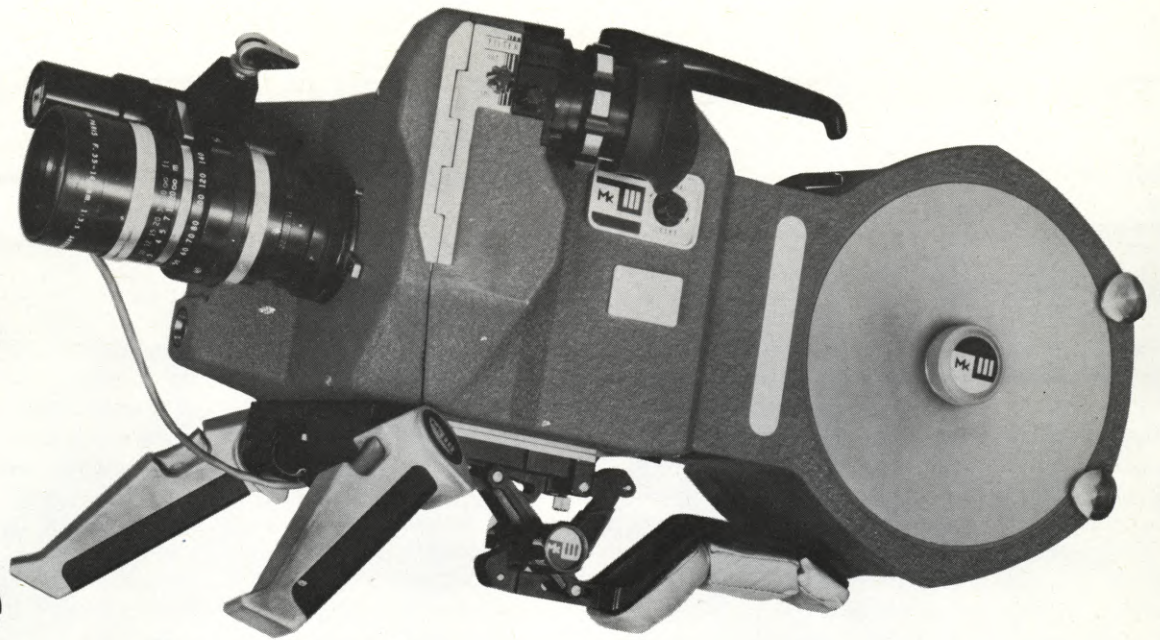
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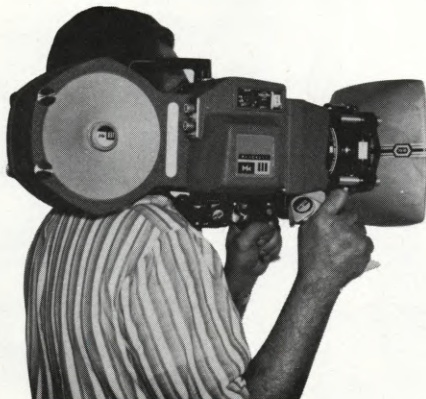
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# COMMUNITY COLLEGE PROVIDES PRACTICAL TRAINING GROUND FOR YOUNG FILM-MAKERS

By **RAYMOND J. WULF**

*Director, Sales Development, Motion Picture Markets  
Motion Picture and Education Markets Div., Eastman Kodak Company*

Los Angeles Valley College is typical of many small campuses throughout the United States which are now training students to work in the film arts

Los Angeles Valley College is located on a concrete campus, surrounded on all sides by middle-class homes typical of Southern California's San Fernando Valley. Near the center of the campus is the Theater Arts building. There it is probable that a number of future actresses, actors, stage managers and the like can be seen rubbing shoulders with the housewives, insurance salesmen and gas-pump jockeys taking courses at the community college. Beside the Theater Arts building is the Cinema building, constructed in 1969.

The students studying here appear to be little concerned with tradition. They

can't be. The film section's first AA degree earner, Tony Paley, is now a senior studying in the Radio and TV Department at nearby Cal State College in Northridge. During the past few years, the community college has proven to be a fertile spawning ground for young filmmakers, who are, in many ways, symbolic of a nationwide movement toward a broadening of the audio-visual communications medium.

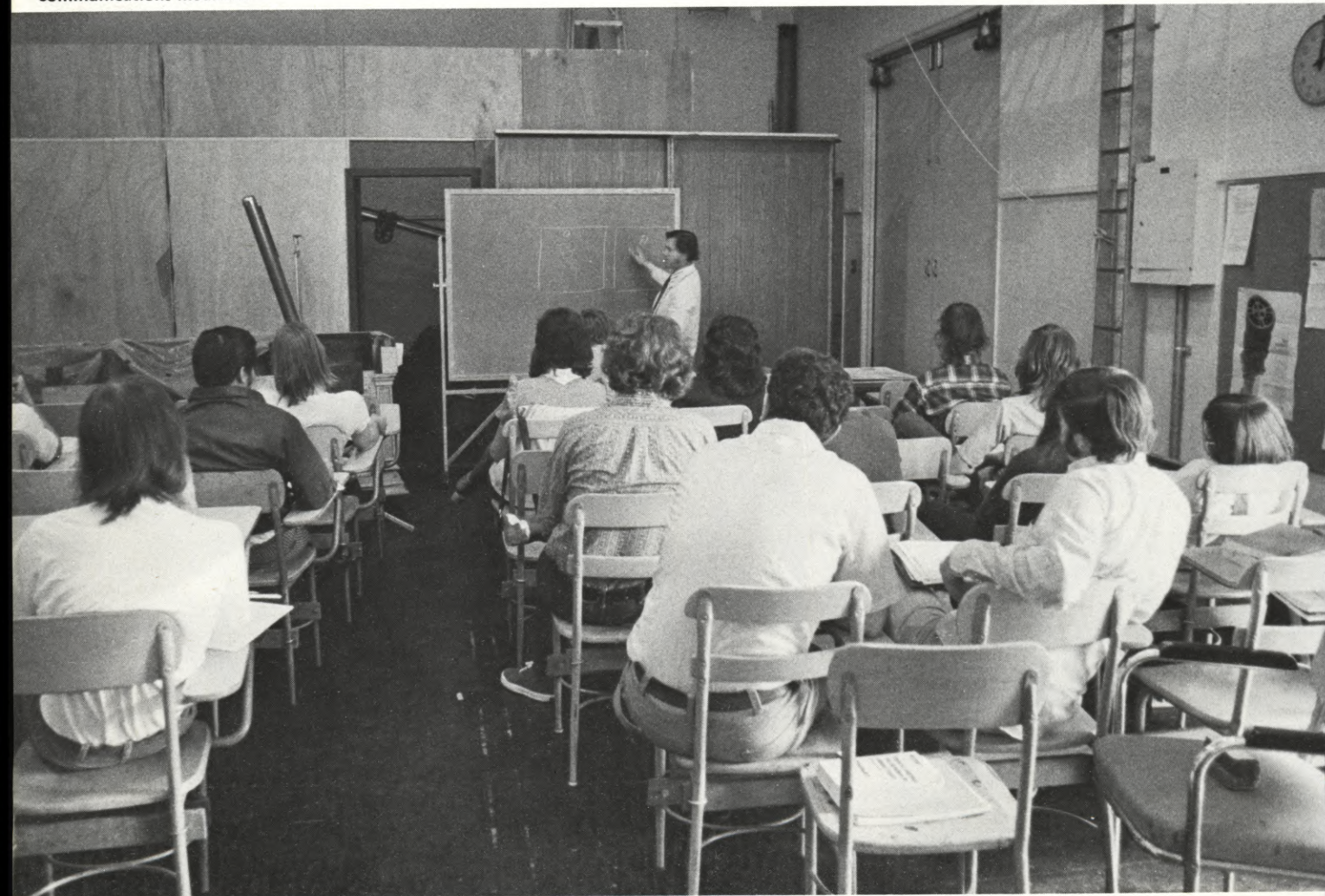
"It used to be that filmmaking was a comparatively old man's job; when I started in TV, everyone wanted to know how much experience you had," says Milton Timmons, who is now complet-

ing his PhD in audiovisual communications at the University of Southern California, in addition to heading up the film section at Valley College.

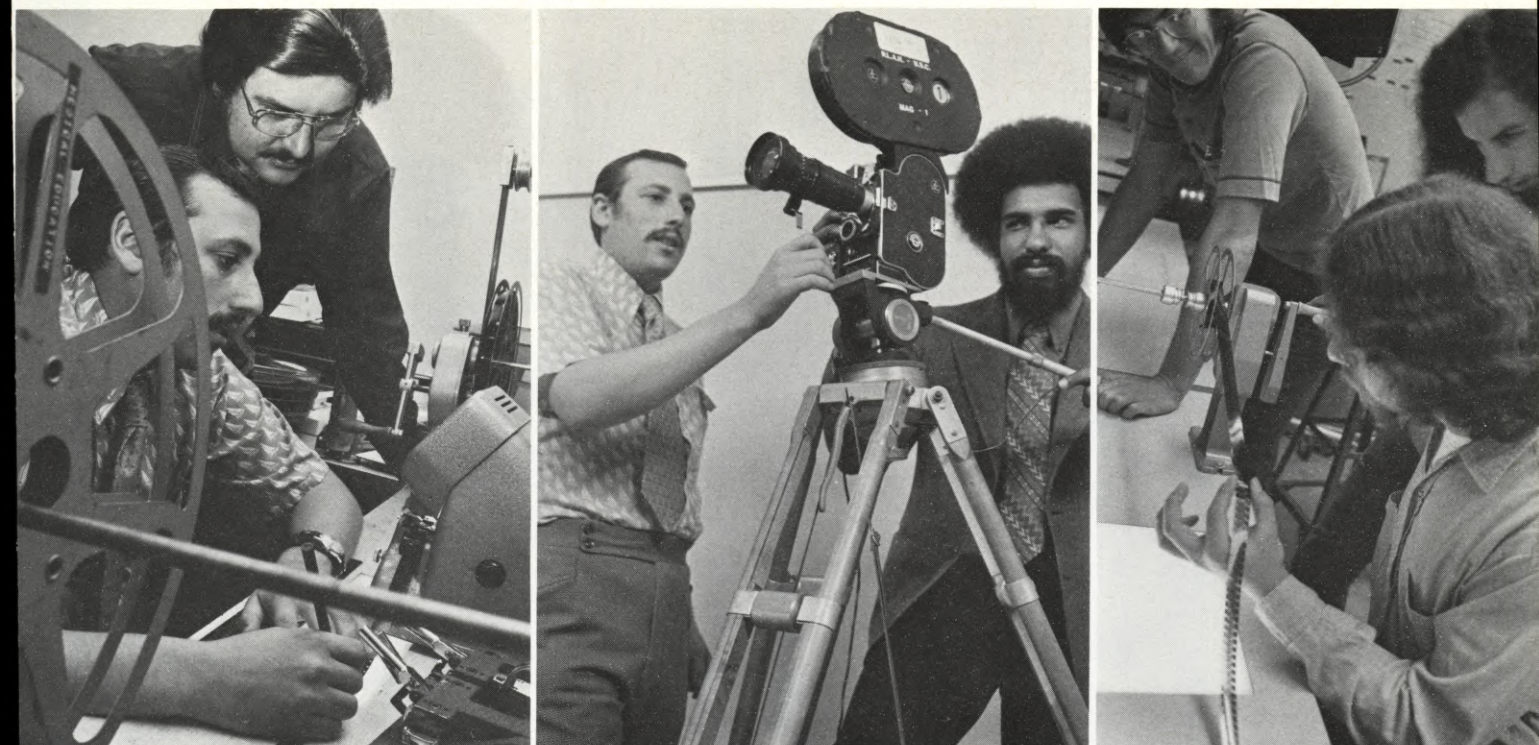
"Today, it isn't even strictly a man's business anymore," he adds, pointing to one of the film section's most promising students, Arlene Cody, who studied theater arts at the community college several years ago. After a brief but successful stage career, she decided to return to Valley College to learn how to make films.

The genesis for the film section, Timmons reports, was a grant under the provisions of the Federal Vocational

In classroom of Cinema Building (constructed in 1969) at Los Angeles Valley College, Cinema Dept. head Milton Timmons conducts orientation class for potential young film-makers. During the past few years, such community colleges have proved to be fertile spawning grounds for students wishing to work with film in one way or another. This is symbolic of a nationwide movement toward a broadening of the audio-visual communications medium.







(LEFT) Al Goldstein (left), a graduate of Los Angeles Valley College, checks some 16mm color footage with Steve Sampley, his supervisor in the Medical Photography Department of Rancho Los Amigos Hospital. (CENTER) Goldstein and Chuck Griner met at L.A. Valley College, where they worked together on student projects. Later they produced "THE NEXT STEP", a medical film which is selling all over the world. (RIGHT) Steve Cohen takes a close look at some film exposed as part of a regular class project, while several other students wait their turns.

Education Act, which provided for construction of the building as a combination classroom/sound stage and the purchase of 16mm film cameras and associated equipment.

The new program has dual objectives. One is to provide a stepping stone for talented young people like Paley, who plan to go on to four-year schools and advanced studies in communications. The other, and somewhat more pressing, objective is to prepare local people for careers in specialized segments of the filmmaking industry.

For example, there is Al Goldstein, a 24-year-old graduate of Valley College who is now employed as a medical photographer at Rancho Los Amigos Hospital in Los Angeles. Goldstein grew up in Newark, New Jersey.

"When I was real young, I used to follow a wedding photographer around with my Brownie camera. Whenever he took a picture, I would, too. Finally, he found a way for me to really help him," Goldstein recalls.

Prior to moving to Los Angeles in 1967, Goldstein's only experience with a movie camera occurred when he helped to film football games at his high school. His inclination was toward art, which is what he started out studying at Valley College.

"I took a class in advertising photography," says Goldstein, "and one thing just led to another."

Another student, Chuck Griner,

pointed Goldstein in the direction of medical photography. Griner, also 24 years old, is a native of Tuskegee, Alabama. He attended college at Tuskegee Institute for 2½ years. His introduction to photography was inspired by a mother with a penchant for snapping pictures of her youngster.

"I remember that I couldn't wait until I got old enough for my mother to trust me with that camera," Griner reminisces.

In high school, his mother gave him an 8mm camera, which he initially used to film sports. He came to Los Angeles in 1968 and registered at Valley College because it was close to his new home, and offered cinema classes.

While Griner still hasn't earned an AA degree, he has taken all of the film classes, some of them several times without credit just for the experience.

To receive an AA degree from Valley College with a major in filmmaking, a student has to produce—from scratch—a movie acceptable to Timmons. To do this, most students have to turn to their classmates for help. Al Goldstein and Chuck Griner, for example, handled the camera and lighting for Tony Paley's film.

"That's how I met Al," says Griner. "He was sitting next to me in class and one day he asked if I would work with him on a film. Later, when Rancho Los Amigos Hospital—where I was employed as a medical photographer—needed a

darkroom assistant, I recommended Al."

At the hospital, Griner's main job involved gait-analysis photography—taking movies of crippled persons for diagnostic purposes. However, he and Goldstein were also eager to begin applying their broader filmmaking skills.

Together with their supervisor at the hospital, Steve Sampley, who now also signs up for film classes at the community college, they went in search of someone who needed a movie. It wasn't long before they found a surgeon who had a little money to invest in a six-to-eight-minute film on the treatment of diabetic amputees.

"The problem," says Griner, "was a lot more serious than I had realized. There are more limb amputations caused by diabetes in this country than by combat in Vietnam. Unfortunately, the great majority of the victims lose a second limb within five years. Some of this is inevitable, but the surgeon we worked with believes that with proper care, an amputee can greatly improve his chances of remaining ambulatory."

The movie, *THE NEXT STEP*, produced by the three young filmmakers in association with the doctor, is designed to dramatize that belief, as well as to demonstrate proper techniques for care, Goldstein says. Instead of six to eight minutes, it runs 22 minutes, in color and sound, and it sells around the world for \$100 per print.





Medical photographer Chuck Griner works with the Los Angeles County-Martin Luther King Jr. General Hospital Medical Photography Section's new Magnasync/Moviola editing console. The 800-bed hospital for Watts residents was designed to become a training center for persons living in the community, as well as a medical school.

"We shot the entire film on Eastman Ektachrome commercial film 7252, some of it double-system sound—using an Eclair camera and Nagra recorder—but mostly with voice-over narration," says Goldstein, who did the principal camera work and editing. Griner doubled as director and assistant cameraman and Sampley produced the film and also operated the camera on occasion.

Last fall, Griner was hired as chief medical photographer by the L.A. County-Martin Luther King Jr. General

Hospital, even before construction was completed in the heart of Watts. The hospital, which will ultimately provide 800 beds for Watts area residents, was also designed to become an allied health job training center for minority persons living in the community, as well as a medical school.

Griner says he accepted the job partially for that reason. He sees filmmaking playing a vital role, both in the training of personnel for the hospital, and also for broader distribution. And, while he still speaks of someday going

back to school to earn his degree and of directing entertainment films, it is also obvious that his commitment to the topical challenge is powerfully motivated.

Even so, there are still ties to the community college where it all started. Al Goldstein, for example, spends most of his weekends working as a second cameraman for what is the most ambitious student project to date, a 45-minute television pilot.

The story revolves around an artist who loses his wife in an accident around the turn of the century and his struggle to maintain his sanity in the aftermath.

A student producer-director recruited production help from the department, but as the idea took hold, he dug even deeper into the bag of residual talent available in the city. He found an actors' workshop—all SAG members—which agreed to play the key roles in lieu of contracts if the film sold. He also raised around \$2,600 from backers who believed that there was some prospect of financial success.

In these circumstances, \$2,600 can go a lot further than one might expect. The talent on both sides of the camera required no initial outlay, since most of the production equipment and facilities were provided by the college or others, and the crew and cast proved to be excellent scavengers when it came to searching out locations.

A good deal of the filming was done on abandoned sets stored in Toluca Lake, California, by Columbia Pictures. Other locations were a photographer's studio, private homes and public beaches.

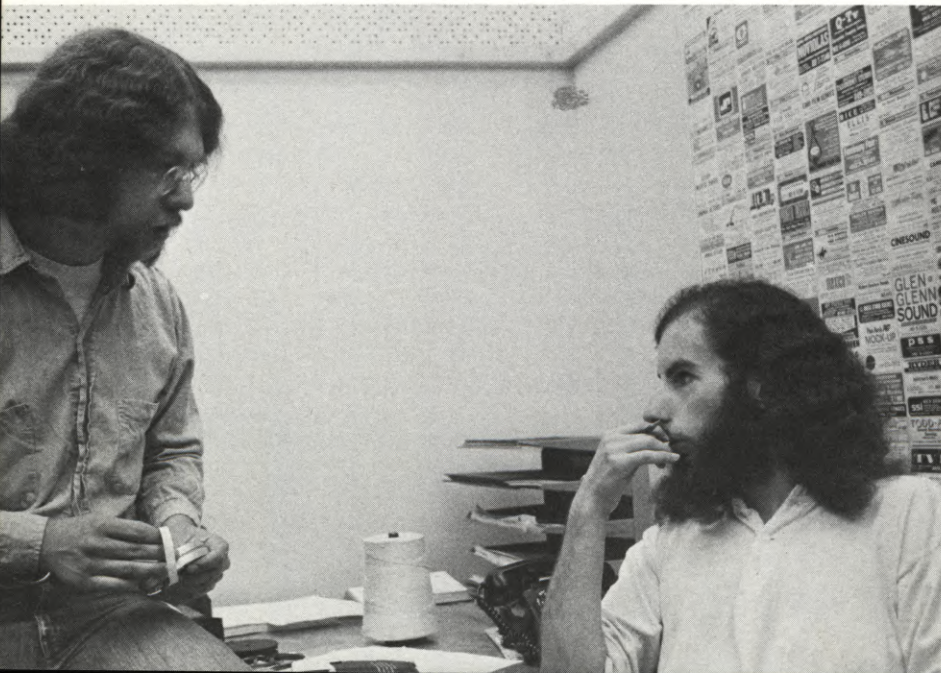
As the script was expanded to 45 minutes, a basic crew of 13 persons—although as many as 38 have been on the set at one time—became committed enough to pledge their weekends for most of the spring semester.

All filming was done in the 16mm format, using Ektachrome commercial film and double-system magnetic sound. With the exception of the introductory course, where Super-8 film is used to orient students to the medium, almost all production is done in this format, or with the "faster" Kodak Ektachrome EF film 7242 (tungsten).

"Our objective is to train students so they are ready to start working as professionals the day that they leave here. We want them to get used to working with color film with lights and filters. Also, we want them to know how to edit double-system sound. We feel that, if they can do these things, they are going to be ready to go to work," Timmons says.

Of course, not every student produc-

Steve Cohen (left) and Al Albert, Cinema students at Los Angeles Valley College, are collaborating on a film which the United Way hopes will involve more school-aged youngsters in their programs.





tion is aimed at Hollywood. Nor do their films typically cost anything approaching \$2,600. The first student project, for example, was Tony Paley's five-minute film entitled, "Scoring." Paley is a 22-year-old who says that he has known from childhood that he wanted a career in filmmaking.

His uncle, Gary Freund, is a film editor in Hollywood, and his best boyhood friend is Ed Begley, Jr., son of the Academy Award winning actor.

"Ed had a 16mm camera that his dad had given him, and we used to fool around with it all of the time, shooting little plays that we made up," says Paley.

"Scoring" started with an idea that a friend of his had for a film with a powerful message. Paley drafted the script and presented it to Milt Timmons. Then he started looking for help.

The story line is simple. A group of youths are seen in a living room pooling their resources. A purchase is arranged by telephone and the implications quickly appear to be obvious: This is going to be a story about narcotics.

The delivery is made and the contraband passes from hand to hand, hidden in a paper bag. Now, Paley cuts to the flashing red lights of two narcotics squad patrol cars. There is a raid. The contraband is seized.

In the paper bag is an oxygen tank labeled "For medical and scientific use only."

"Air pollution—how long?" is the closing message superimposed over the final frames of film.

The cost? A few hundred dollars, Paley estimates. The crew and cast were all from Valley College and the location was a friend's house. The Ford Motor Company loaned Paley the police cars and his research revealed that Los Angeles narcotics squad officers generally work in plainclothes.

The movie was shot in three nights on Ektachrome commercial film, double-system sound, using an Arriflex camera and a Nagra recorder. Channel 52, a community station in Los Angeles, has programmed the film two times, and several doctors are using prints at medical conventions, seminars and in classes.

While Paley's film is history, Timmons notes that the requirement is the crucible that separates the casual student from the potentially serious filmmaker. The orientation classes are always crowded, he says, but the falloff is considerable when theory is put aside in favor of practical filmmaking.

Yet, for some people, the bite of the film bug—no matter how demanding—is potent. Al Albert, for example, started taking film classes as a 20-year-old, two

years ago, because they were required prerequisites for advanced studies that he wished to do in sound recording. His original objective was to prepare for a career as a sound recording engineer.

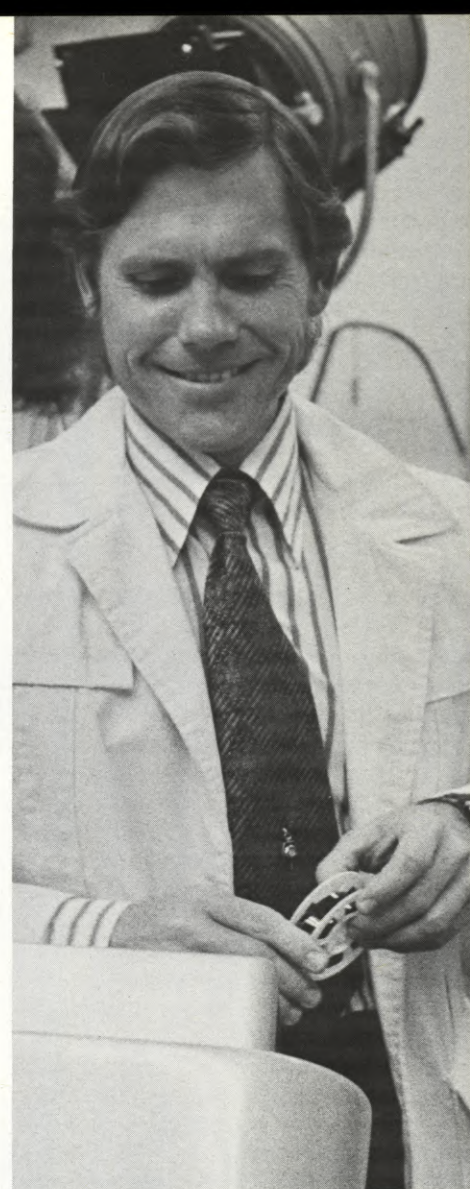
Steve Cohen, who is the same age, came to Valley College as a skilled amateur still photographer, hoping to prepare for a career as a free-lancer. One day last fall, the pair approached Timmons with an idea for a short film that would contrast the differences in life styles between healthy and deprived children. Timmons felt that the concept was too pat, and rejected it as a class project, but he urged Albert and Cohen to seek another sponsor.

A persistent search led them to the United Way office in Los Angeles where they struck a responsive chord. Impressed by the youngsters' enthusiasm and by the potential force of the medium, an official urged them to visit agencies serviced by the United Way and to learn for themselves how things really are.

Cohen and Albert came away from these visits impressed that the United Way was playing a vital role in the lives of some deprived children. Agency officials told them that, if they could modify their original concept, so that this point could be made as a seven-minute single-concept film produced exclusively for school-age children, they would sponsor the project.

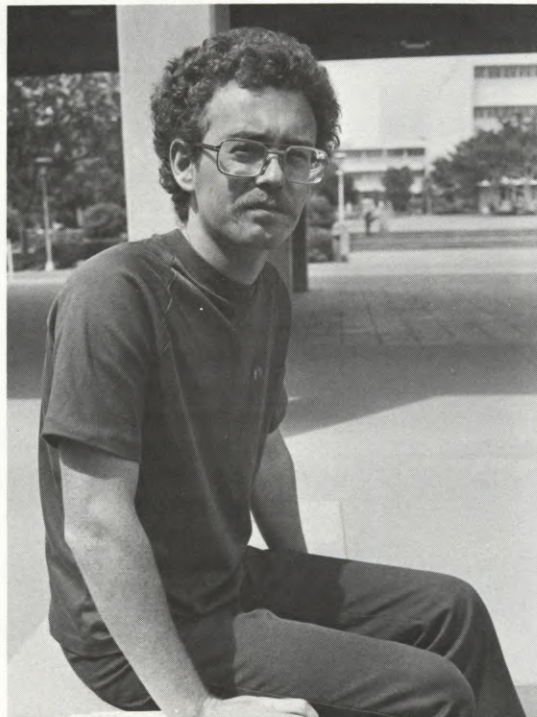
For the United Way, an official explained, this will be the means to an end: closing the information gap between the agency and school-age children.

For Cohen and Albert, however, the film could well be a beginning. ■



Milton Timmons, film section head at Los Angeles Valley College, appears happy with the student-edited footage he is watching on the Moviola.

(LEFT) Tony Paley, the first AA degree-earner to specialize in film-making at Los Angeles Valley College, is continuing his education, after which he plans to work as an editor in the entertainment film industry. (RIGHT) Arlene Cody, who had attended the College's Theatre Arts Department, returned after a short, successful stage career to study film-making.





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## FILMING "THE CIRCUS"

Continued from Page 149

of a two-man cherry-picker bucket, accompanied by the camera, lenses, batteries, assistant Shuler and myself. Another day he worked unassisted for two hours in a cage with a very large male lion named "John-John and his trainer. After making the shots, Priestley commented, "The only time I was worried was after I finished a shot, when the lion got out of the finder and I wasn't exactly sure of his whereabouts; as long as I was shooting and had him in the finder I knew I was safe." In defense of the lion it should be noted that "John-John" was more cooperative and less temperamental than some of the performers. He lasted for about a half dozen takes on each of his scenes, whereas the wire-walkers, for

example, made it very clear (their heavily French-accented English suddenly becoming very understandable) that we would get only one shot at each part of their act.

The many rigs used during the filming were ingeniously engineered on location by key grip Bob Ward. Ward devised a rig to hang the camera over the side of a cherry-picker bucket keeping it fully operable 60 feet in the air, and also created a rig for the high-wire act that positioned the lens 90 degrees vertically and dead center over the turning axis of the "sputnik," enabling us to film the act from directly beneath the wire. This allowed Priestley to pan with the action from the platform to the wire's center directly above him, spin the shot 180 degrees (keeping the performers centered in the finder) and pan again with the action back to the

platform. We also used a special dolly and track designed by Ward that made possible a series of long, very fast-moving dolly shots.

The lighting was set by Gaffer Bill Meyerhoff who placed banks of six and nine lights, on the arena catwalks as main lighting for most of the shots, augmented by 10,000-watt spot floods for fill, and random 64's to punch up highlights and create a glowing edge light on the performers' costumes.

One week after we completed filming, production manager Girolami and I made a trip to Hollywood to screen the dailies, discuss the special photographic effects with Lin Dunn and Don Weed of Film Effects and conduct a search for a film editor that led us to Todd Martin, President of Javelin Films. Martin did all the post-production work with me and contributed immeasurably to the film's continuity and flow.

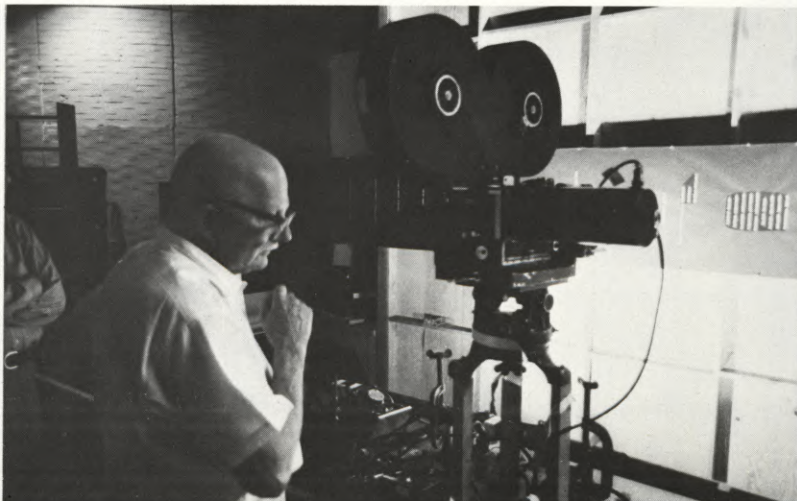
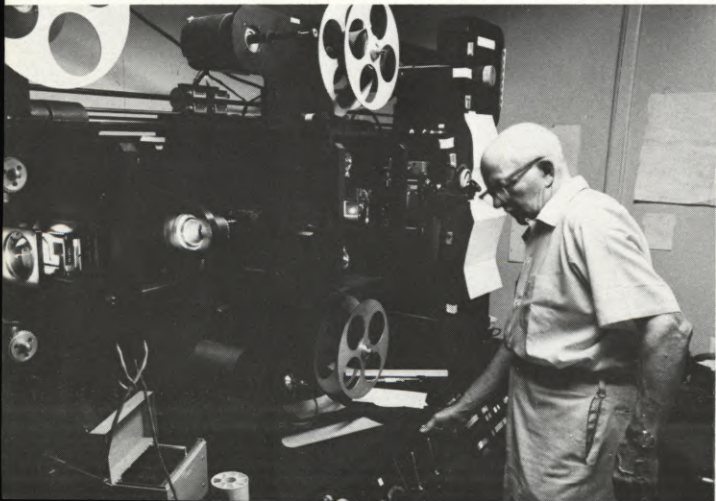
He began by looking for a piece of editing equipment that could be modified to turn the image upright in the viewing screen. An old projection Moviola turned out to be the answer. We removed the head and tilted it in a rig made of 2 x 4's so that the 8" x 10" screen was angled towards the viewer, presenting a right-side-up image. When it worked, it worked well, but on occasion it exhibited an incredible appetite for the 35mm squeezed dailies we were feeding it, often making its own perforations, accompanied by an unnerving crunching sound. We completed the first cut in a week and turned over the work print, (A, B & C rolls) along with a list of 62 optical effects to Film Effects of Hollywood.

In the four months of special effects production that followed, I am sure we pushed their know-how, equipment and, at times, patience to the limit. It should be noted that their conscientious contribution to the film from its inception through to its completion was of inestimable value to me as an individual newly confronted with the creation and

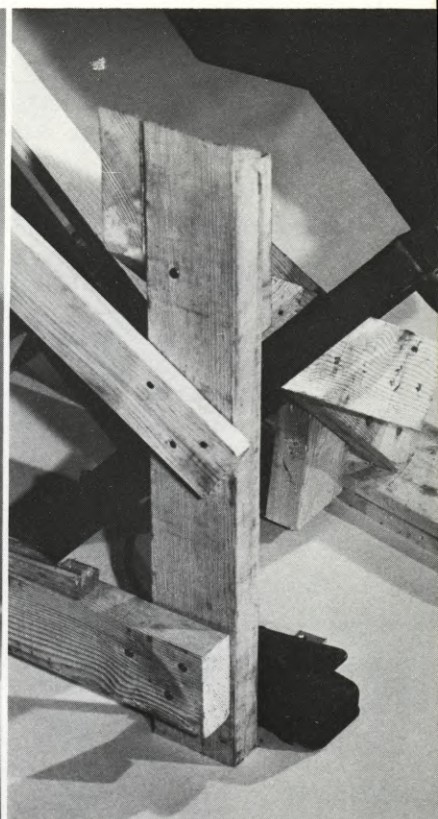
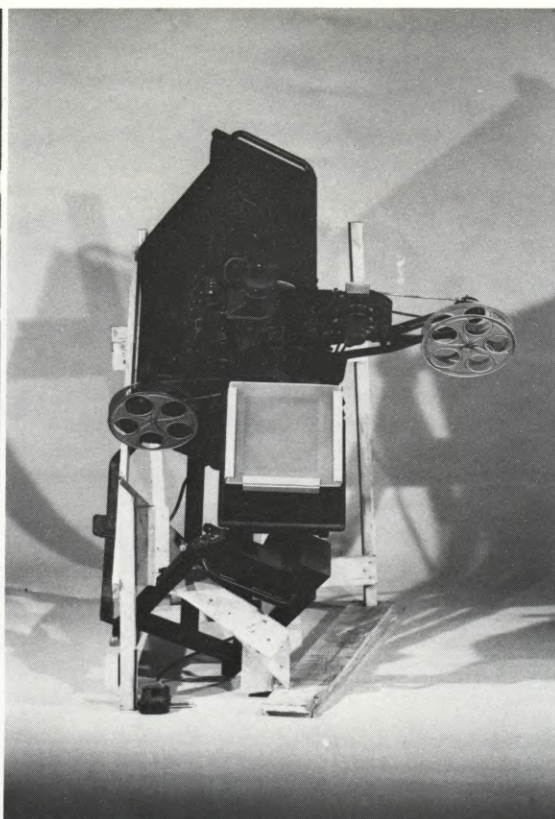


Composer Don Randi takes a break during recording of the film's score at Western Recorders in Hollywood. Randi's sprightly original music captures perfectly the merry tempo and excitement of the circus, adding extra impact to the film's effect on the audience.

(LEFT) Bill Reinhold, brought to the project by Film Effects of Hollywood to produce all of the special photographic effects for the film, is shown at work with one of the 70mm optical printers. (RIGHT) Reinhold shoots the end credits of the film, using a special rig designed and constructed by Film Effects. Liberal use of special photographic effects communicates the unique magic of the fantasy world that is the circus.







(LEFT) Film editor Todd Martin lines up 35mm anamorphic print-downs of the 70mm footage used in cutting. (CENTER) A modified old-style projection Moviola turned on its side solved the cutting problem, turning the image upright on the viewing screen. It worked well enough, but occasionally punched its own extra set of perforations in the 35mm squeezed dailies. (RIGHT) A close look at "precision detailing" of the 2" x 4" cradle which held the Moviola in position for vertical viewing.

direction of films and, of course, to the film itself, which depends so heavily on the special effects they produced to perfection.

The driving dynamic score was composed, arranged and conducted by Don Randi, whose prolific and inventive mind has matched the visual impact of the film with an experience in sound that is truly incredible. The impact of the music is made even more powerful by the programmed switching of speakers located throughout the "Projection Circus" environment, which moves the sound in three-dimensional patterns through the space.

In summary, this film is truly the result of the accumulated efforts and contributions of many, many talented people. A response by each of them to an exciting idea that needed their interest and talents to be realized. ■

## PHOTOGRAPHING THE SEARS CIRCUS

An interview with Director of Photography Jack Priestley

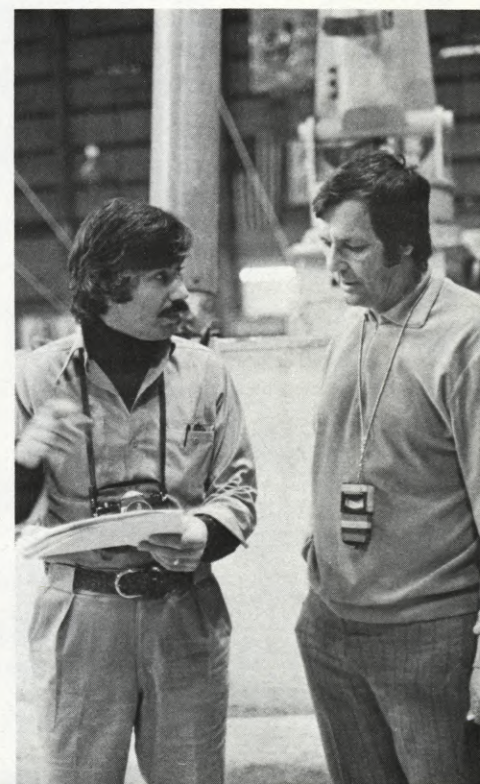
**QUESTION:** Can you tell me something about the special problems of photographing "CIRCUS"—especially those attendant to the use of the vertical 70mm format?

*PRIESTLEY: It was a strange kind of challenge. Greg Dinallo, the Director, approached me about shooting the project and he said the film was to be shot vertically for projection on a screen 14 feet wide and 30 feet high. This was not what you would call a normal format, so I went out to Hollywood to explore the possibilities of using either Panavision or Todd-AO. I found that by mounting the Todd-AO camera on its side, the proportions would fit the screen perfectly. The main problem was that with the camera on its side, the film would go only so far in the magazine and then buckle in the take-up. I remembered that back when I was shooting the old three-strip Cinerama we had the same problem in photographing the roller coaster sequence. At that time, Fred Waller, who was the inventor of Cinerama, came up with the idea of using brass flanges inside the magazines. The film rode easily on these flanges and the problem was solved. I told the "CIRCUS" company about the flanges and they tried it and it worked. The film ran straight through beautifully—no problem at all. I was suddenly a big hero with the company for suggesting it.*

**QUESTION:** What other differences did you encounter in the actual shooting of the action?

*PRIESTLEY: Well, we shot for a week inside the Commack Arena on Long Island—just spectacular circus acts: trapeze, high wire, spinning—all kinds of stuff—and it was a very interesting project. It's strange, very strange, to*  
Continued on Page 198

Dinallo and Priestley reviewing copies of the 8" x 10" shooting story boards that each key crew member worked with during the filming.





## NEIL ARMSTRONG MUSEUM

Continued from Page 169

gallery is the Gemini 8 spacecraft in which Armstrong and David Scott orbited the earth for the world's first space-docking mission in March, 1966. Perhaps the most remarkable thing about the capsule, because movies and television have familiarized Americans with the maze of instrumentation required for space flight, is its minuscule size. That two men occupied such a small area for two days is hard to

imagine.

Also in the gallery are Armstrong's backup space suit for the historic Apollo 11 mission, a model of the three-stage rocket, an air-pressure table designed to illustrate the principles of orbitry, and display cases containing memorabilia of the astronaut's childhood.

Included in the last are school books, a doorbell he made, drawings of aircraft, and a portion of a wind tunnel he constructed. These items were provided by Armstrong, now a professor of astronautical engineering at the University of Cincinnati, and by his parents, Mr. and

Mrs. Stephen Armstrong of Wapakoneta.

Leaving the static exhibit area, visitors enter a sound tunnel, where they hear transcripts of audio tapes made during space flights. This aural experience prepares them for their second audiovisual experience.

The latter features three closed-circuit television monitors with repeating sequences that depict the space age from initial training through views seen on flight missions. On a back wall is a third 6 x 8-foot, rear-projection screen. It first showed just a single image of the moon but now features a more dynamic 35mm-slide space show.

Visitors next enter an infinity cube. As they move across a bridge, red, green, and yellow lights beneath a catwalk are reflected on six mirrored surfaces ebbing and flowing by the electronic simulation of what can only be described as space music.

Then they are in the Astro-Theater. Taking their seats on the carpeted risers, visitors are momentarily entranced with the illusion that they actually are projected into space. During these brief moments, all sense of time is lost.

The only realities, seen against a star-studded sky, are the excerpts from 16mm NASA motion-picture film, 35mm slides provided by the same agency, and additional visuals created by the Educational Development Center, Inc., of Newton, Massachusetts, and Massachusetts General Hospital of Boston.

Most of the images are space scenes but interspersed with them are slides of human skin cells and microscopic views of blood vessels. There is no narration—only an eerie music track. The objective is to stimulate the strangeness of space travel.

Leaving the Astro-Theater, visitors stroll past ceiling-high windows that look out on a mini-garden. Then they enter a V-shape souvenir gift shop that serves as a "re-entry chamber." Suitable mementos are on sale.

"The Armstrong Museum will keep evolving," comments Miss Minkin. "When we opened, for example, the entry area featured an abstract mural of the rocket launch area at Cape Canaveral.

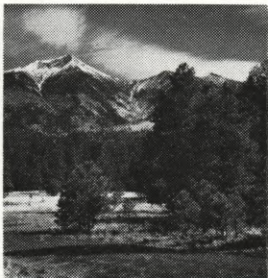
"The concept was good but the mural was never really completely successful. So we replaced it with enlargements of photographs taken during the Apollo 11 mission of the Armstrong and Aldrin Sea of Tranquility base.

"We want to provide visitors with a true educational experience that will be as dynamic as man's continuing exploration of space." ■

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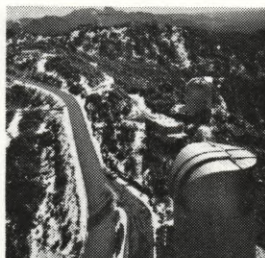
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## NEW HELICOPTER MOUNT

Continued from Page 202

Systems facility is now located adjacent to that of National Helicopters.

After initial field tests were completed, the Mark 10 was used on several commercials and movie features. Reports on its handling were solicited from users and their remarks analyzed. All reports were more than favorable and minor improvements were made, based upon requests received.

When all improvements had been finalized, additional mounts went into production, working for a formal release in December 1972.

Some of the exceptional features of the Mark 10 are:

The mount is designed to break down into three parts for transport in a specially-fitted shipping case. It can be installed in either side of a helicopter in a matter of minutes. A special locking-off device insures security of the mount when not in operation and can be used with ease in the air when changing a magazine.

All mount motors for camera, zoom, focus, etc., operate from two self-contained battery supplies located on the mount which also act as a partial counterbalance for the camera assembly.

The unique design of the Mark 10 mount enables it to shoot from angles not previously possible, including *STRAIGHT FORWARD*.

The Mark 10 mount not only isolates the camera from vibration, but the seat is also isolated from the aircraft floor, preventing any vibration from being transmitted through the body of the cameraman.

The entire mount is protected from rust and corrosion by anodization and plating. Operator seat belts are all aircraft-type. Specially-designed windshields are provided to prevent slip-stream buffeting, and the one wind-shield can be fitted to either side of the helicopter.

The Mark 10 will accept all spherical and anamorphic lenses.

Variable speed, zoom and focus controls can be pre-set for speeds ranging between 5-90 seconds.

Solid State electronics of the modular plug-in type can be replaced in the air if necessary.

Swing-out zoom and focus motors enable the cameraman to get at the lenses for manual adjustment, if necessary.

Variable friction controls can be used to dampen motion of forward pan and tilt axes.

An adjustable foot rest is provided

for operator comfort and security. This can easily be removed, if necessary, even in flight.

The Mark 10 mount is designed so that a variety of camera supports can be quickly plugged in, thereby making the system adaptable for most of the popular cameras now in use by the industry.

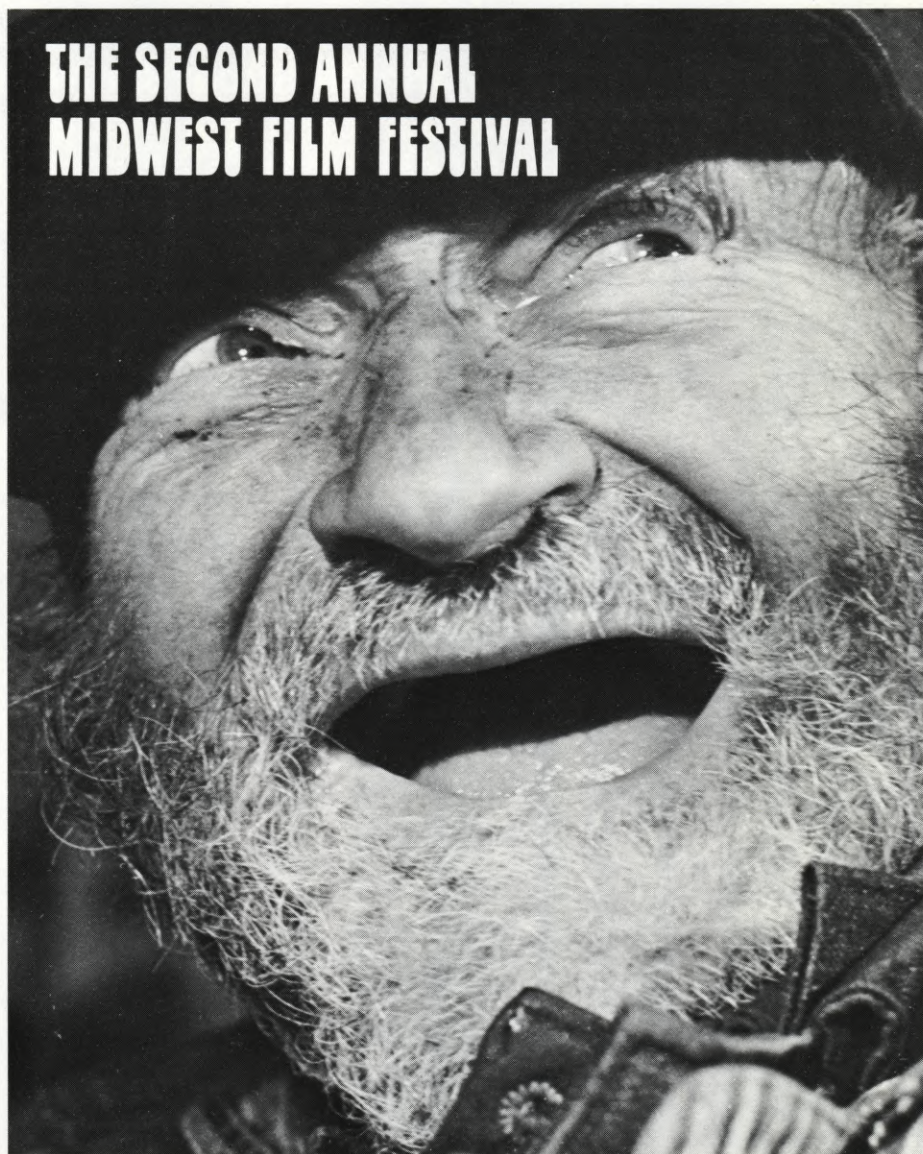
Complete camera crews are available if needed.

All daily and weekly rentals include camera, lenses, filters, windshield and specially-designed intercom—everything needed to get the shot. There is one price for all equipment, except the

helicopter—with no other extras.

Mounts can be obtained from Continental Camera Systems, Inc., 16800 Roscoe Boulevard, Van Nuys, California (213) 989-5222, on the West Coast; or Image Devices, in Miami (305) 754-4141. Mounts will be available from New York and other major cities in the United States and Europe early in 1973.

Continental plans to release its 16mm version, the Mark 15, shortly. It is also actively exploring putting a complete video tape system in a helicopter, and plans to have this available by June 1973. ■



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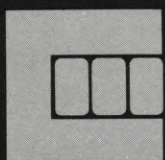
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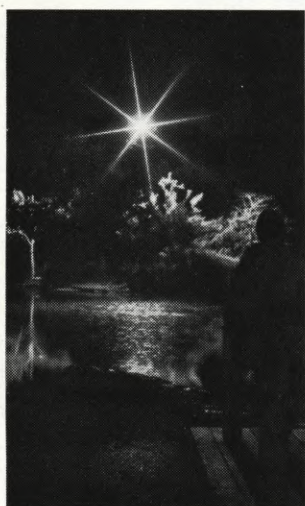


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## CINEMA WORKSHOP

Continued from Page 132

minimal and quickly reaches a safe equilibrium. In the case of the fast charge, temperature and pressure virtually run away until the cell is destroyed.

The simplest and safest way to charge a Ni-Cad is thus to use a C/10 or "overnight" charger. This type of charger is of extremely simple construction, is inexpensive and cannot possibly damage your battery. There are two points of caution. Firstly, use only a charger designed for a specific battery. *Never* use one brand or model charger on a different type or brand battery. An "overnight charger" for a 7 ah cell will totally destroy a 2 ah cell. Secondly, while a C/10 rate overcharge cannot really hurt the cell, it does slightly raise the temperature during overcharge. Ni-Cads will give maximum life when stored at room temperature or lower. Thus, it is a good idea to remove Ni-Cads from the C/10 charge, when convenient, assuming they have charged for a 14-hour minimum.

What about quick and fast charging? This is definitely possible and done quite frequently. However, it requires a

very complex charging system. Some method must be employed to monitor the state of charge of the cell and terminate the high charge current the instant the cell enters the overcharge region. Quick charge systems usually employ a pressure sensor that is manufactured into the cell, or a thermistor or thermocouple attached to the cell to monitor cell temperature. With such a system, the charger can sense the temperature or pressure rise and turn off the charger before either becomes excessive. Some fast charges employ a voltage cut-off. Voltage sensing has been quite delicate in the past. However, with new sensitive integrated circuits we may see a practical voltage-sensing fast charger in the near future. All of the above type fast chargers are far more complex, larger, heavier and more costly than the simple C/10 charger. In addition, the battery can only be discharged at a single voltage. That is, one cannot have a universal battery that is tapped at 8, 12 and 16 volts and be capable of a fast charge. Lastly, there is always the possibility that the cut-off mechanism may malfunction, allowing the high-charge current to continue into overcharge, destroying the battery.

It makes sense to employ a C/10, "overnight" charger. A fast charging system should be employed only when absolutely necessary. In any case, only charge a Ni-Cad with a charger specifically designed for that battery. Lastly, and most important, when in doubt—charge! If you are not sure of the state of charge of a battery—charge it. Whether using a C/10 charger or a fast charger, the battery cannot be damaged by overcharging. However, you can damage the battery by overdischarging a battery that was supposed to be 100% charged but in reality was one half discharged. ■

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many, many areas around Dallas that lend themselves to both contemporary or period photography. Places like Six Flags Over Texas that have ready-made "sets" at your disposal.

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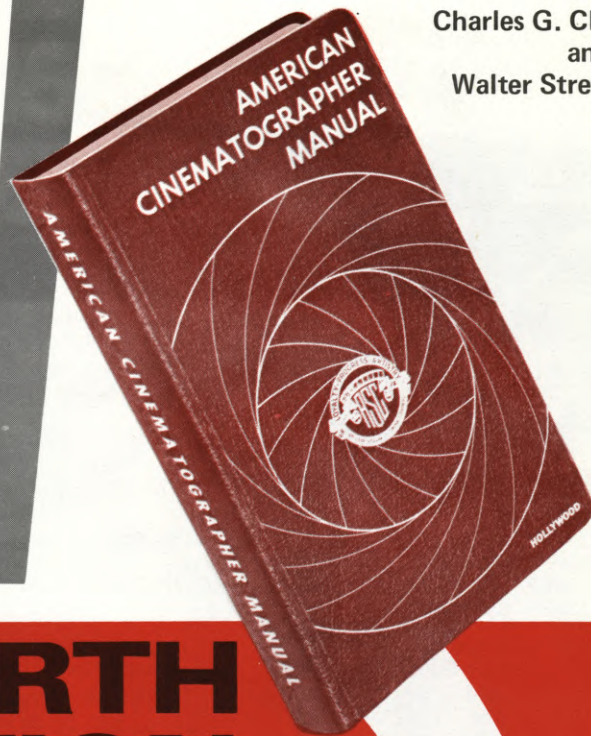
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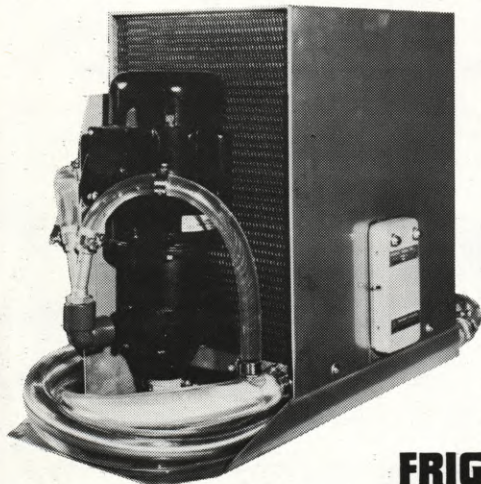
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## INDUSTRY ACTIVITIES

Continued from Page 130

Robert Fryer Productions, Metro-Goldwyn-Mayer; SNOOPY, COME HOME from "Snoopy, Come Home", Lee Mendelson Film Productions-Sopwith Productions, Cinema Center Films Presentation, National General; STRANGE ARE THE WAYS OF LOVE from "The Stepmother", Magic Eye of Hollywood Productions, Crown International; THEME FROM THE HEARTBREAK KID from "The Heartbreak Kid", a Palomar Pictures International Production, 20th Century-Fox.

## CINEMATOGRAPHER AND WIFE HONORED BY MOTION PICTURE AND TELEVISION FUND

A commemorative plaque honoring Lester and Rosalind Shorr will be affixed to a cottage at the Motion Picture Country House in Woodland Hills, it has been announced by Jack Staggs, executive director of the Motion Picture and Television Fund.

The plaque is in recognition of Shorr's contribution of \$17,500 to the Fund over a period of eight years since 1965.

Shorr, a cameraman, is a member of The American Society of Cinematographers and International Photographers Local 659.

## HUNGARIAN FILM SERIES SCHEDULED BY LOS ANGELES COUNTY MUSEUM OF ART

The Los Angeles County Museum of Art will present a film series in February titled "New Hungarian Cinema", with some of the best work produced by Hungarian film makers in recent years.

Beginning on February 16 and continuing Fridays and Saturdays through March 3, the Museum, in association with The American Film Institute, will present 16 films in the Leo S. Bing Theater. All of the films, with English subtitles, will have their American premieres at the Museum.

This film series will demonstrate the solid tradition of craftsmanship and the inventiveness of creative young writers and directors. The Hungarian film industry has contributed such outstanding talents as Alexander and Zoltan Korda, Michael Curtiz and Paul Fejos, and—in the last ten years—a number of new names who have achieved international fame: Miklós Jancsó, István Gaál, István Szabó and others, some of whom



are young enough to have their best work still ahead of them.

Though most of the films shown in this program were produced on a fraction of American film budgets, their technical quality is superb, according to David Shepard, who arranges film programs for the Museum on behalf of The American Film Institute.

The series will have nine features, including two romantic 19th century elegies, a sparkling comedy for young children, a moving portrait of an old lady, a provocative film on rebellious teenagers, three political autobiographies, and several cartoons and experimental shorts from the Béla Balázs Studio, a workshop of young directors that helped launch the careers of many established figures in Hungarian film making.

#### TV ACADEMY INVITES ENTRIES

The National Academy of Television Arts and Sciences is extending an invitation to every active craftsman in television to enter his own achievement for Emmy Award consideration. All craftsmen are eligible, whether or not they are Academy members. The requirements for entering are as follows:

1. Achievements must have been originally broadcast from March 13, 1972 through March 18, 1973.
2. Achievement must have been broadcast nationally so that it was available for viewing by 50% of the total potential United States television audience, or approximately 25 million households.
3. Only the individual who would receive the Emmy for his category is eligible to submit his achievement.
4. Deadline for receipt of entry cards is 10 AM, March 21, 1973.

To obtain a list of the categories and a Craft Entry Card, please contact:

Ms. Laya Gelff, Manager, National Awards

The National Academy of Television Arts and Sciences

291 South La Cienega Boulevard, Suite 200

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Continued on Page 200

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## FILMING "THE CIRCUS"

Continued from Page 189

*operate with your field up and down instead of across. You can't see your top line or your bottom line, and that makes it very hard to frame. Your eyes keep rolling around until you think they're going to pop out of your head.*

**QUESTION:** What would you say was your most difficult sequence to film?

*PRIESTLEY: I don't know about difficult, but the hairiest one was when they asked me to go inside the cage with the lion and a trainer and photograph the lion jumping through a fire hoop. I felt fine as long as I could see the lion in the reflex finder, but once I lost him I got worried because I didn't know where he was. Everybody thought I was crazy to do it at all, but it worked out fine.*

**QUESTION:** Did you use the hand-held model of the Todd-AO camera in the cage?

*PRIESTLEY: Yes, but their hand-held camera is not all that light. They call it the "All-purpose" model and it's a very nice camera. I'd like to shoot a feature with it someday, but it's actually very hard to hand-hold, because it's quite heavy.*

**QUESTION:** What size magazine did you use on the camera?

*PRIESTLEY: We had to use a 1000-foot magazine, which meant that we had to have a special bracket built in California to support the magazine. This rig became so heavy we had to mount it on a big heavy-duty O'Connor head. It's quite a thing to see. It really is!*

**QUESTION:** What about the arena that you worked in—any special problems?

*PRIESTLEY: The Commack Arena worked out quite well as a location, because we didn't want to fight the daylight coming in. The Long Island engagement is the only time this particular circus works indoors. Anywhere else they perform under a tent. We caught them at the only period during the year when they come in from outside.*

**QUESTION:** What about the lighting inside that arena?

*PRIESTLEY: That was a problem, because we couldn't show any background. They wanted the background to go black. Also, we could only shoot in*

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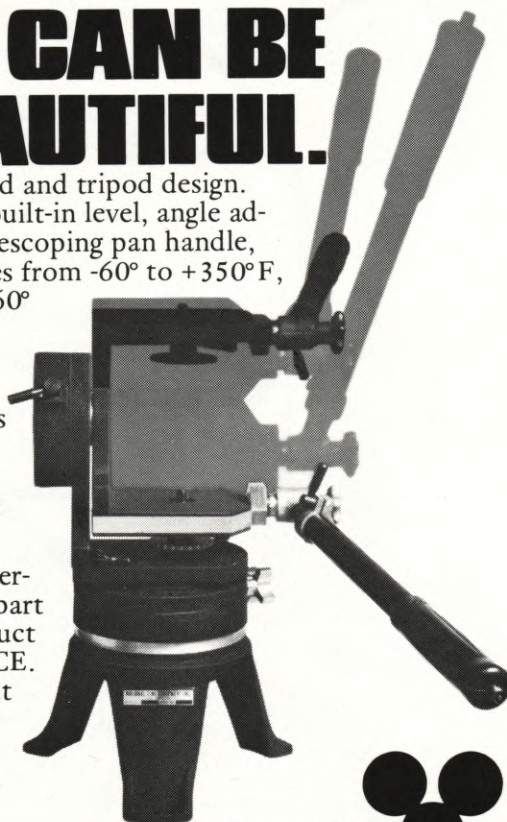
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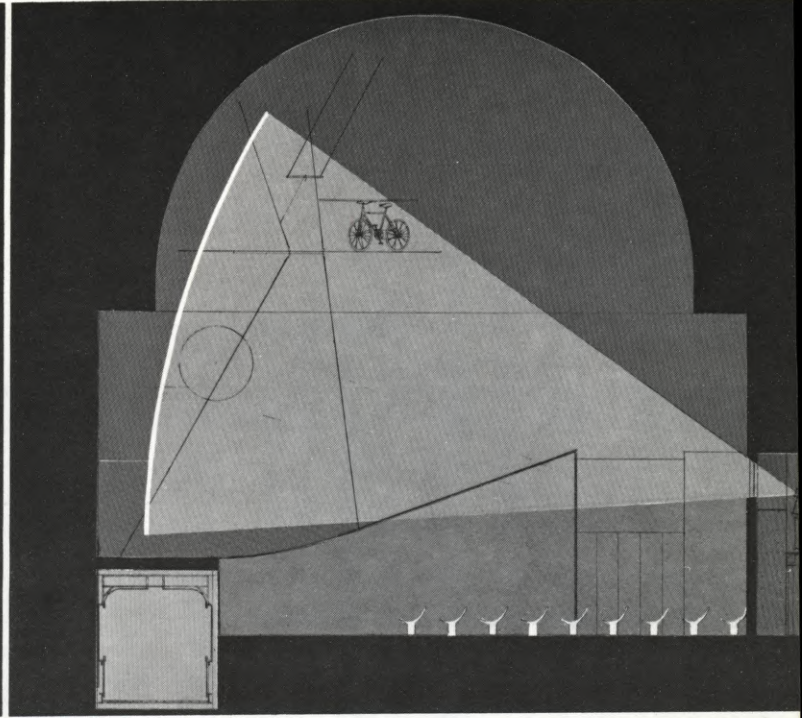
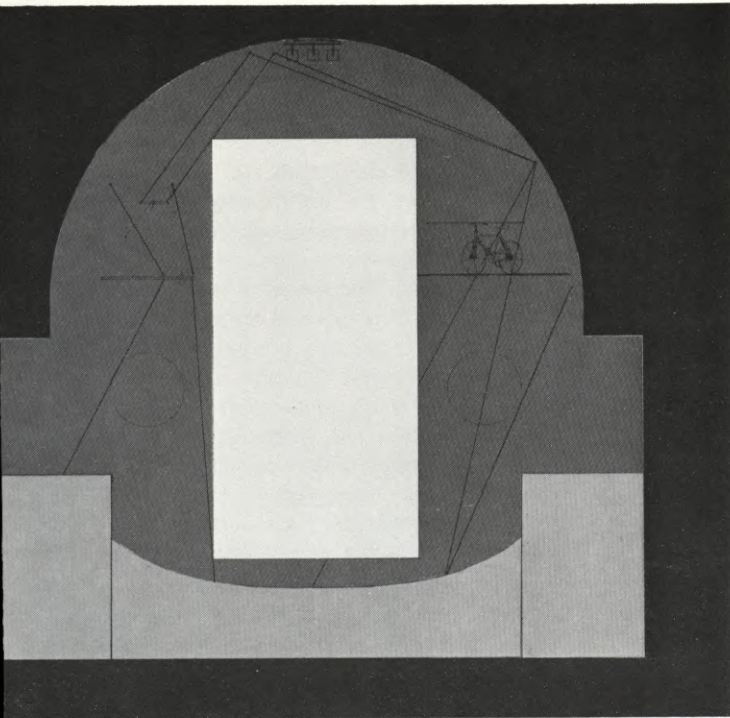


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(LEFT) Schematic showing audience's view of the 30-foot-high projection screen and surrounding circus rigging and paraphernalia that make up the "projection circus" inside the Museum. (RIGHT) Schematic side view of the screen, bench seating and projection throw configuration. (BELOW RIGHT) Overhead schematic of the projection circus seating plan, which accommodates 125 people. Impact of Don Randi's dynamic musical score is made even more powerful by the programmed switching of speakers throughout the projection circus environment, which moves the sound in three-dimensional patterns through space.

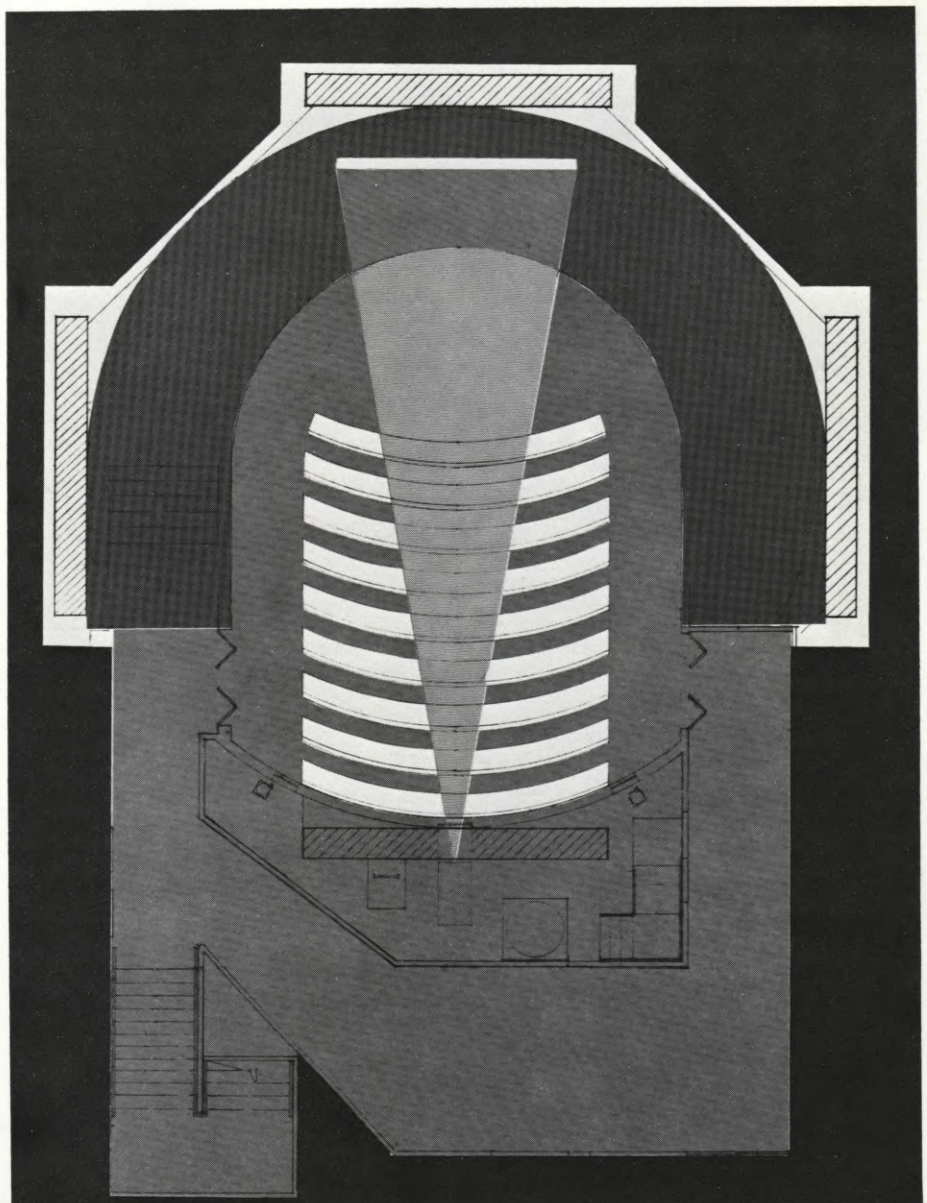
*the morning—or else during the first performance, but without disturbing the acts themselves. I couldn't blast the performers with a lot of light while they were performing because the people in the audience wouldn't have liked it. That's why it took so long to shoot that nine-and-a-half minutes of cut film. We did an awful lot of filming in the morning. Then the actual performance would go on at two in the afternoon. We'd have to wrap before five, because another show would go on then. So we shot most of the stuff that we had to light specially in the mornings.*

**QUESTION:** What kinds of lighting units did you use?

*PRIESTLEY: Well, I needed a lot of light, so we used quite a few nine-lighters and PAR-64's and 10K's and 5K's. It was a tremendous lighting job, but we used a short crew and worked like hell. I had a very good gaffer, Willy Meyerhoff. He really hustles!*

**QUESTION:** It seemed to me, when I viewed the film, that at times you were right up on the trapeze with the camera. How did you get that effect?

*PRIESTLEY: We rented a special rig. I forget what they call it, but it's very much like a cherry-picker and it allowed us to go up about 70 feet. Getting that*  
Continued on Page 206





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## INDUSTRY ACTIVITIES

Continued from Page 197

conceived and developed in that era. Motion pictures are probably the greatest contribution of the 1900's to the world of art—the art form which most faithfully reflects the emotions of the 20th century man, his craftsmanship, his creativity, his industry and ingenuity. In order to provide continuity and breadth in its annual presentations, the Jacksonville Arts Festival, to be held April 5-8, 1973, includes the Jacksonville Film Festival, thereby hoping to encourage individual appreciation and expression in cinema art.

### CONDITIONS:

1. Films must be submitted on 16-mm optical sound or silent film; however, they may originally have been on another gauge.

2. Films with magnetic tracks will not be accepted for screening.

3. Films must be shipped in professional boxes with straps. Return shipping label must be enclosed with film. Cans, reels and leaders must be labeled.

4. There is an \$8.00 entry fee to cover transit and return insurance and postage. (Filmmakers who stipulate special return-handling must send certified checks or money orders for the exact amount of the postage IN ADDITION TO THE \$8.00 ENTRY FEE.)

5. Films must have been completed since January, 1972. All films, together with completed entry forms and fees, must be postmarked no later than midnight, February 15, 1973. Films will be returned within one week following the Festival.

6. Prize money will be sent directly to the filmmaker, rather than the distributor or company, unless the filmmaker instructs otherwise in writing.

7. Unless expressly prohibited by the filmmaker, films or portions thereof may be used for prefestival publicity and promotional purposes.

8. Films thought to be of excessive length (over 30 minutes) for the expediency and quality of either the judging or showing will be eliminated in order to grant fair consideration to all entrants.

9. A purpose statement must accompany the entry form. This statement should be a synopsis of the objectives the filmmaker sought to achieve with this film. The statement should also suggest the category into which the filmmaker feels the film would best fit.

10. Filmmakers are encouraged to include three production stills (5x7 or 8x10) with entries for possible publication nationally or locally.





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**CATEGORIES:**

The Pre-Screening Committee will classify the films into the categories listed below, relying heavily on the suggestions offered by the filmmaker in his purpose statement.

1. Abstract or Fantasy
2. Animation
3. Business and Industrial
4. Children's Films
5. Documentary
6. Entertainment

**JUDGING:**

Judges will be filmmakers, educators, film programmers or coordinators, as will the Pre-screening Committee. Films will be viewed from a technical, practical and historical standpoint and judged on the quality of the production in all aspects.

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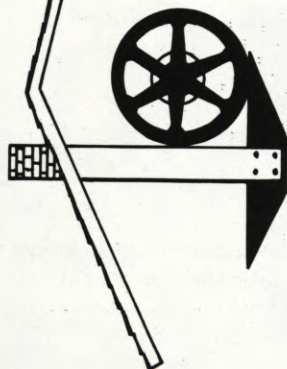
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Continental Camera Systems, formed in January 1972, discussed with several of the world's leading cameramen what

they would want in an aerial camera mount. Realizing that aerial camera mounts were not new to the industry, they designed the Mark 10 to accommodate features desired by the cameramen that would benefit them in getting superior shots. The cameramen asked for certain features not currently available in existing mounts, and also demanded a mount that could be marketed at a reasonable price.

With these objectives in mind, a consultant was hired to advise on the mount's design and manufacture. Incorporated into the design was the ability to remove the vibrationless seat and use the mounting arm on a tripod or Hi-Hat

for tracking or sound stage purposes.

After designs, drawings, and countless hours of machine work were accomplished, the first prototype was flown in August of 1972. At this time a working agreement was entered into with National Helicopters' president, Dick Hart. Realizing that Continental Camera Systems had a superior mount, National Helicopters agreed to make available their experienced movie pilots and helicopters to provide customers with a one-stop service that would include a wide range of helicopters and movie pilots, along with Continental's mounts and cameras. The Continental Camera  
**Continued on Page 191**

## CHARACTERISTICS OF THE CONTINENTAL CAMERA SYSTEMS 35mm MARK 10 HELICOPTER MOUNT

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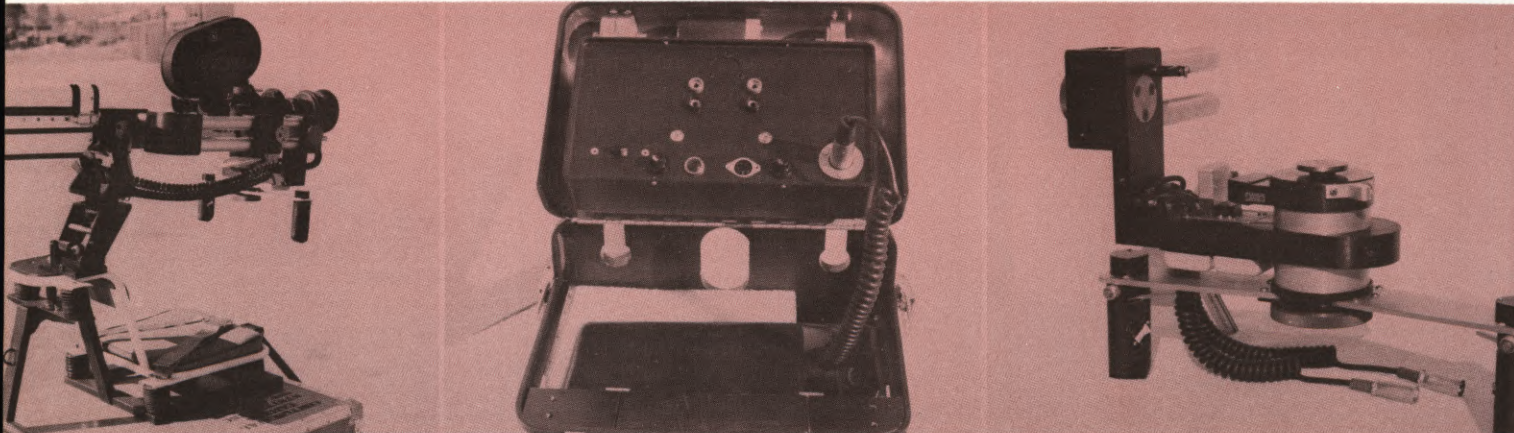
Self-contained rechargeable Ni-Cad batteries.

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(LEFT) Rear view of Continental Camera Systems' new Mark 10 helicopter mount. Arm can be fitted to left or right side. (CENTER) Shown in open position, camera counterbalance case also contains all camera, zoom and focus batteries. They are self-contained and rechargeable without having to be removed from counterbalance case. (RIGHT) Removable front-end assembly shown here is for Arriflex 16mm and 35mm cameras. Additional units are available to accept Eclair 16mm, Bolex Pro 16, and other popular cameras.

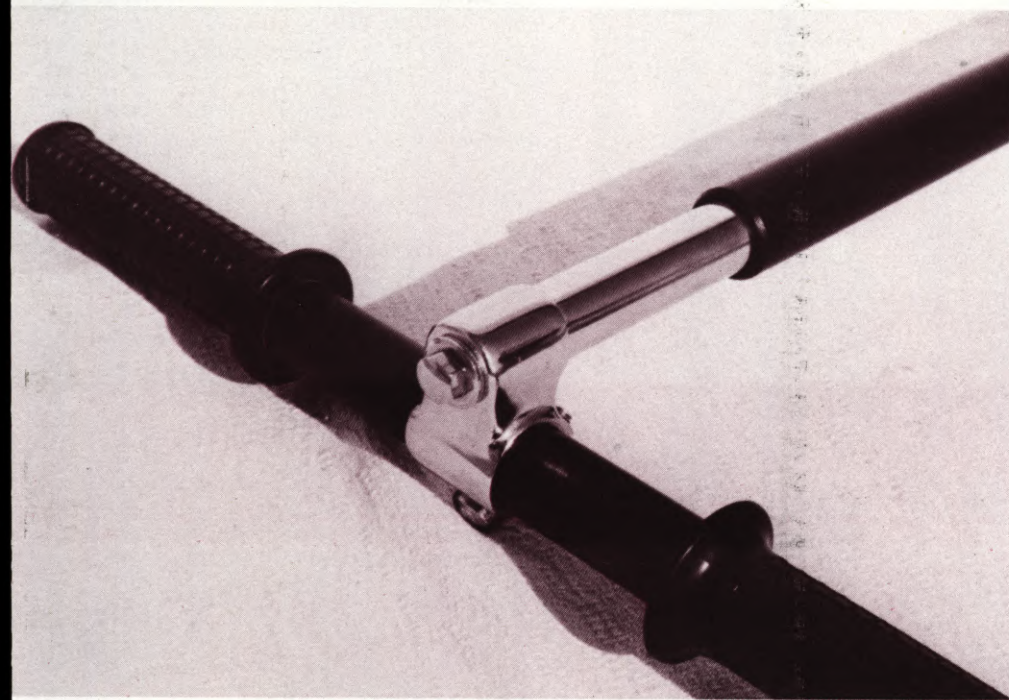
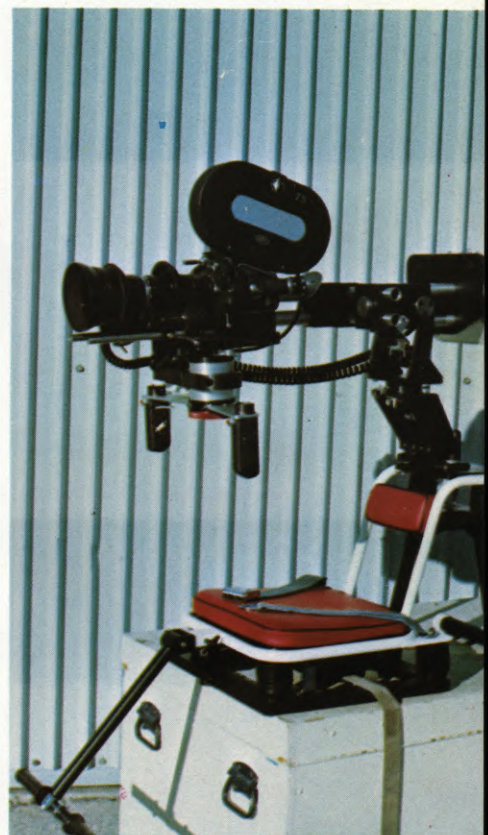




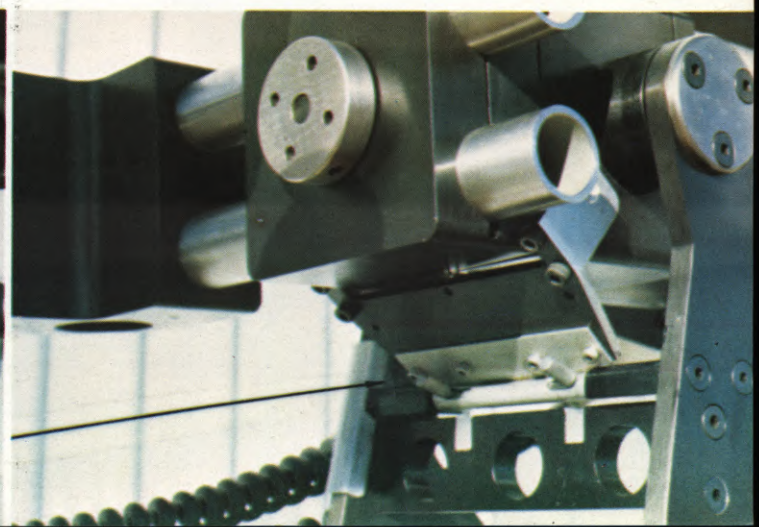
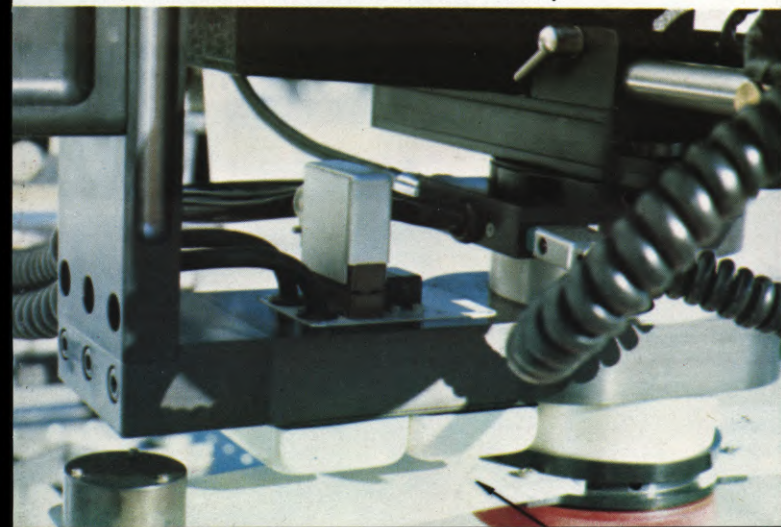


(LEFT) American Cinematographer Editor takes off in helicopter for practical test of Continental Camera Systems 35mm Mark 10 Helicopter Mount. With zoom-lensed 35mm Arriflex camera mounted, he tried all types of filming maneuvers, winding up the test by holding in closeup passengers on a fast-travelling train. (RIGHT) The mount's lens support system, showing lens and control motors securely attached to iris rods. Either motor may be easily disengaged from drive gear by simply releasing motor clamp screw and swinging unit out of the way.

(RIGHT) Continental Camera Systems Mark 10 Camera Mount has been designed to accept a wide variety of cameras. It includes features specifically requested by cameramen which are not currently available in existing mounts. The Continental Mount breaks down into three parts for transport in specially-fitted shipping case on which it is resting in photograph. (BELOW) The mount's adjustable foot rest affords the cameraman an added measure of security, safety and control.



(LEFT) Completely demountable solid state electronics for lens control (indicated by arrow) are easily replaced or interchanged. (RIGHT) Simple lock (indicated by arrow) quickly secures pitch and roll axis during magazine changes or mount assembly. Lock snaps out of the way when disengaged. All mount motors for camera, zoom, focus, etc., operate from two self-contained battery supplies located on the mount, which also act as partial counterbalance for the camera assembly.







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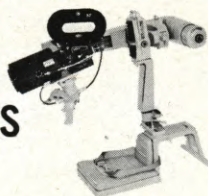
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## KODAK'S NORWOOD SIMMONS RETIRES; FROTHINGHAM, CONLEY NAMED TO NEW POSITIONS

Dr. Norwood L. Simmons, assistant vice-president and general manager of Kodak's motion picture and education markets division (MP&EM), has retired as of January 1, 1973.

Anthony Frothingham, Director, marketing administrative services, was named to succeed Simmons as general manager of the division. Effective as of that date, Frothingham became assistant general manager of MP&EM. Hall Conley, director, special marketing promotions, has replaced Frothingham as director, marketing administrative services.

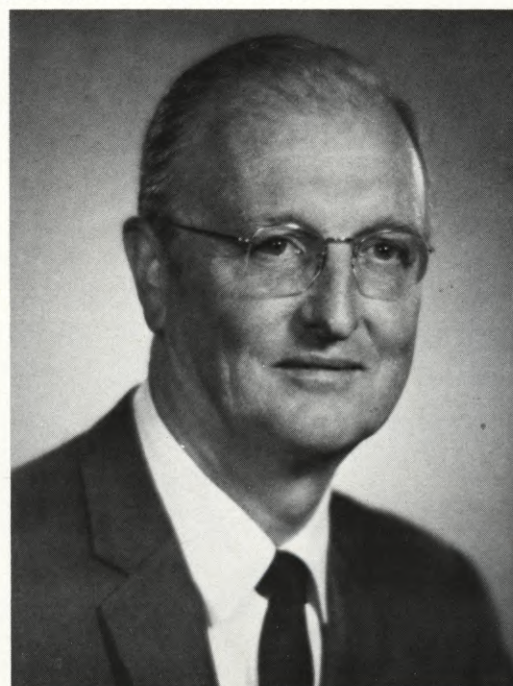
These announcements were made by Van B. Phillips, vice-president and general manager, marketing, U.S. and Canadian Photographic Division.

Simmons, of 795 Allens Creek Rd., Pittsford, N.Y., joined Kodak in 1937 at the Kodak Park Division. For the next four years he was associated with the company's film manufacturing operations.

In 1941 he moved to the West Coast division of the motion picture film department in Hollywood, Calif. He became chief engineer of the division in 1954, assistant manager in 1958, and manager in 1960. In 1964 he was appointed general manager of the West Coast division.

Simmons returned to the East as general manager of the Northeastern

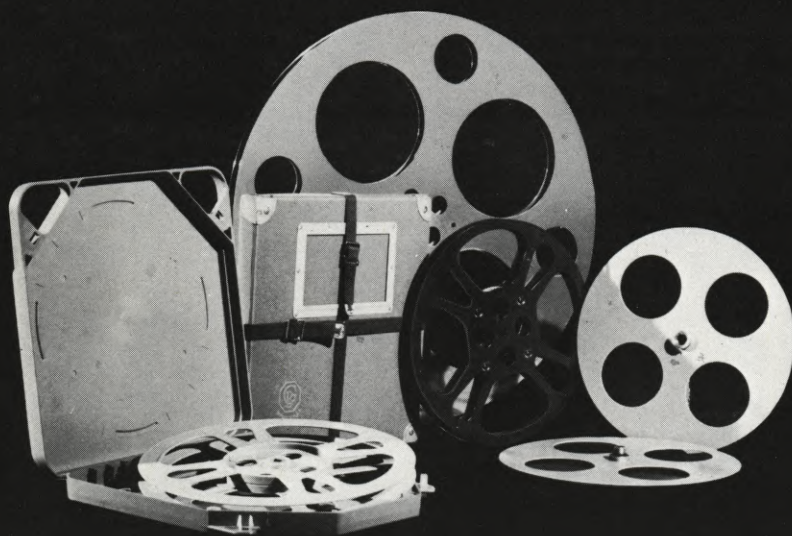
Dr. Norwood L. Simmons has retired after 35 years of dedicated service with the Eastman Kodak Company. His many friends in the motion picture industry wish him well.



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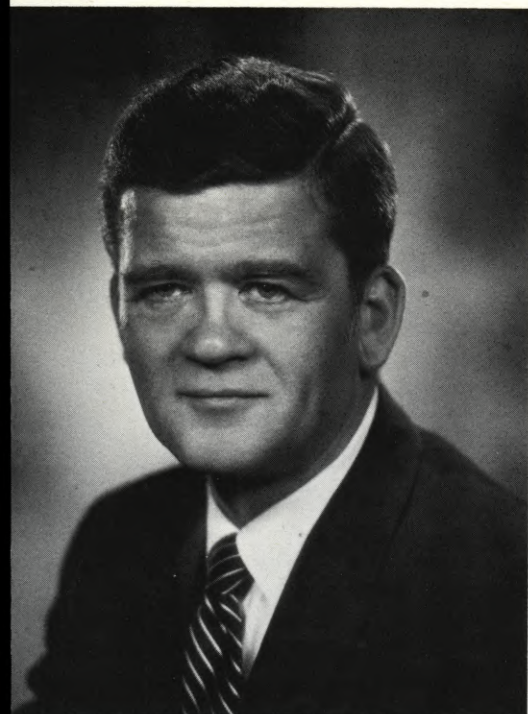
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Anthony Frothingham, former Director, marketing administrative services, has been named to succeed Dr. Simmons as assistant vice president and general manager of Kodak's motion picture and education markets division.

sales division in January, 1965, and one month later was appointed director of marketing, New York City region. He was named manager of product planning for the motion picture and education markets division in 1966 and was promoted to general manager of the division and elected assistant vice-president in 1969.

A native of Washington, N.C., Simmons holds three degrees in chemistry: a B.S. from the University of North Carolina, an M.S. from California Institute of Technology, and a Ph.D. from the University of North Carolina.

Simmons is a Fellow member and past president of the Society of Motion Picture and Television Engineers, Associate Member of the American Society of Cinematographers and the Academy of Motion Picture Arts and Sciences, member of the Society of Photographic Scientists and Engineers and a Fellow of the British Kinematograph Society.

He is also a member of Phi Beta Kappa, honorary scholastic fraternity, Sigma Xi, honorary scientific fraternity, and Alpha Chi Sigma, professional chemical fraternity.

Frothingham, of 91 Fairview Crescent, Irondequoit, N.Y., began his Kodak career in 1948 in the training department, and after a year's stay in the office management department became a member of the management staff in 1949.

Continued on Page 218

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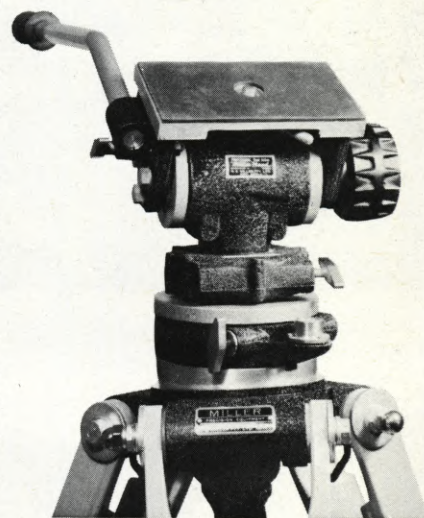
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The "F" Head will support medium weight 16mm cameras up to 15 lbs. and the LP-2, Professional Fluid Head will support up to 30 lbs. Both are available with or without the Slip-Pan unit.

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## FILMING "THE CIRCUS"

Continued from Page 199

contraption into the arena was a problem to start with, and once we got it inside we couldn't turn it around because there were a lot of rings, wires and other suspended equipment. We finally had to take some of it down so that we could get above the aerial act and suspend the camera on a high-hat platform to shoot straight down on them. We did that with this cherry-picker rig. When you set the camera on its side right at the base of the ladder, the wirewalkers would go up and you could hold the bottom of the pole and the top all in one shot. It was fantastic.

**QUESTION:** A shot like that requires a considerable depth of field. What stop were you shooting at?

**PRIESTLEY:** I tried to shoot at about *F/5.6*—which meant that I really had to pour the light on. That's why I had all those big lamps—so that I could hold the depth of field. Even so, I had to push the stuff in development one stop.

**QUESTION:** You didn't use any arc lights, did you?

**PRIESTLEY:** No. I can't recall when I last used an arc. I don't even remember if I've ever used one. Some cameramen like them. I think they're a lot of work. You pump them around and put them on Molevators. You've got to have a man on each one and you're always putting gels on them or pulling them off. I like the Mini-Brutes much better. They're lighter and you can get just as much out of them.

**QUESTION:** Have you ever used xenon lights?

**PRIESTLEY:** Yes, but I don't like them. I used two of them once for a test and never used them again. They're good for closeups, but they fall off tremendously. They don't carry at all. I had a lot of trouble with them. They run on 35 volts and I don't know what the story is, but they're always flickering. Of course, it was pretty early when I tried them and they were very new. Maybe they're coming out with better ones now. Actually, on the "CIRCUS" picture, I used less light than I did in shooting the "NAKED CITY" series in black and white, the reason being that we didn't force the development in those days.

**QUESTION:** If I recall correctly, "NAKED CITY" was one of the first series to be shot entirely on actual locations—interiors and all—isn't that right?

**PRIESTLEY:** Yes. I don't think there's an alley or rundown street in New York that I haven't shot in. "NAKED CITY" was strictly bridges and tunnels and rooftops and alleyways and God-knows-what. After that, even the "CIRCUS" picture didn't seem too difficult. ■

## SPECIAL EFFECTS FOR "CIRCUS" BY DON WEED

When Lin Dunn and I first received a telephone call from Greg Dinallo in Chicago regarding the Sears Circus project, we were amazed at the information they wanted over the telephone.

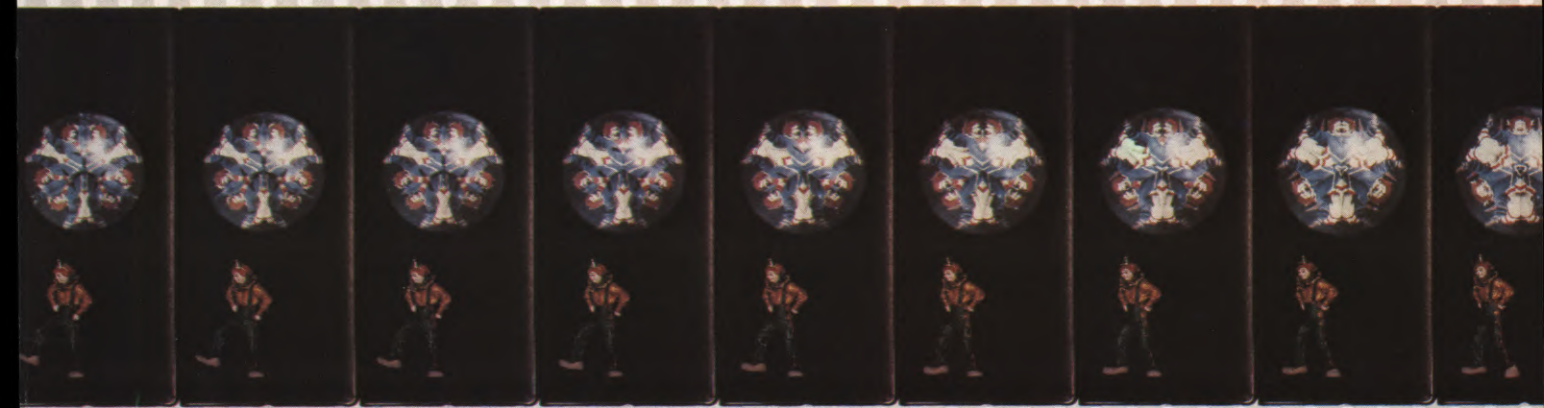
The concept of a vertical "high-screen" format in place of the conventional wide-screen seemed to be a psychologically sound device for the presentation of an innovative circus film. Mounting 65mm cameras on their side was simple enough, but the complex optical effects involved in the odd-ball format did seem to pose some possible

Final version of the Sears Circus film consists of almost wall-to-wall special effects. Some of the most striking of these were achieved in very simple ways. (TOP) Double positive frames of lion jumping through hoop were alternated with double frames of the negative image. (BOTTOM) To achieve strange mirror effect, scene was first printed straight. Then negative was flipped, so that same scene could be superimposed backwards.

WESTMAN







(TOP) The film opens with silent footage of an old-time circus, shot in the 1.33 format. Then, by means of an optical printer effect, the scene rapidly expands into an abstract image that fills the vertical frame. (BOTTOM) an extremely complex effect was created by shooting scene of the clown by himself. Then six images of him were then composited into a kaleidoscopic ball which, by means of optical printer magic, was made to bounce in the air in response to his actions.



Director of Photography Priestley (UPPER LEFT) experimented with various ways to shoot the lion inside the cage. He first tried suspending the camera from an overhead rig (ABOVE CENTER AND RIGHT), but found that this floating camera did not afford him sufficient control. He finally achieved what he wanted by mounting the camera on an Elemack dolly (BELOW).





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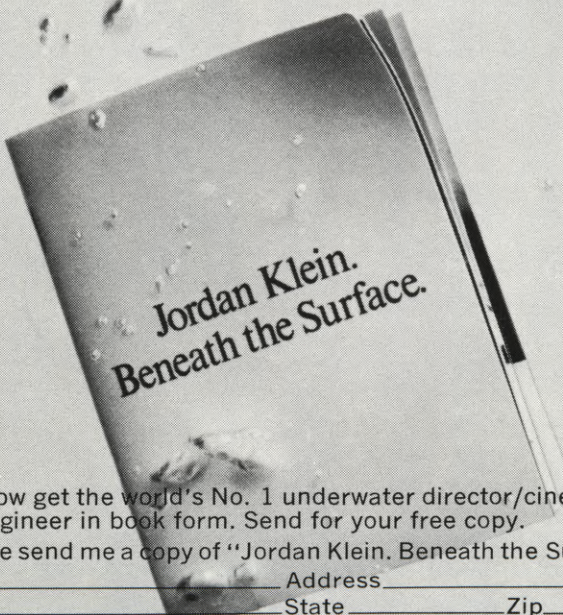
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future problems... and Greg wanted ball-park estimates of unit prices "off the top of our heads"! Then and there, we gave him our best "educated guess".

Then came storyboard conferences with Greg and Director of Photography Jack Priestley, an old pro who was certainly a very welcome addition to the team.

Film Effects' optical printers, of our own design, are primarily intended to cope with the unusual formats, multi-panel and multi-pass requirements of the current state of the art. Aerial image heads, interchangeable 35-65m capabilities, extra-long beds and our own machine shop were able to meet the needs for special slit-scan setups, soft-blend mattes to accomplish multi-pass composites that might more normally be done by a self-matting process, such as blue-screen. That, and some more... with printer operator Bill Reinhold at the helm... did the job.

Which brings us to the use of the optical printer as a creative tool of film-making. Here is a case where the principal photography had been expertly completed with future optical effects in mind as satisfactorily as time and circumstances permitted, and now film editing by Todd Martin and Greg Dinallo brought its demands to the optical printer.

Special effects were "tried on for size", then re-done to new timing and concepts altered in the light of first trials. A dazzling aerial pirouette was optically superimposed and blended with a strobe effect. It didn't "play", was redesigned without the strobe effect, sent back to the optical printer and emerged as a first-rate shot. Another complicated optical effect involved a group of clowns. First of all, the clowns were optically composited as a kaleidoscopic vignette-in-action matted to a ball-like circle which materializes "out of thin air". Another clown jumps up to capture it. Time after time, the ball just eludes his grasp. The production of this effect required optical printer animation frame-by-frame, timing the movement of the ball to match the action of the clown, which was, of course, photographed as a separate scene.

All this, and much more like it, goes on without benefit of any trick photography, blue-screen or otherwise, or special mechanical effects. The work is accomplished by using very flexible optical printer facilities and technical expertise as creative tools of modern, innovative film-making.

That's one way to tell it like it isn't.

Now the job is completed and all that remains is for Film Effects to convert one of its optical printers to



handle the special release print format . . . sets of three frames of 16mm projected vertically . . . so that 16mm color internegative can be reduced from the 65mm optical internegative. (Release prints will then be "standard" 16mm continuous prints.)

Here we go again! Now the 65mm projector head must be mounted on the optical printer in a position 90 degrees opposed to the 16mm camera . . . which must be converted to handle the 3-frame pulldown. New mounts, new drive linkage, new cam, modified precision movements.

Considerable thinking and planning are required if the single-use printer set-up is not to exceed reasonable costs . . . and Film Effects' Technical Director, Cecil Love, seems to have come up with a satisfactory solution to the problem.

All this points up the changing technical requirements of motion pictures, emphasizes the new demands of the creative non-theatrical film producer and the influence of the so-called "leisure time" world which, more and more, is using motion pictures to add scope, excitement and the feeling of audience participation to their live-action presentations.

It also reminds us that there's always something new under the motion picture sun . . . even after more years in the business than most of us care to remember. ■

## TRANSPORTING A CAMERA

Continued from Page 174

over against the wall to make room for the rest of us. It had nothing on it, affording an ideal place to set the camera.

It was an antique, with substantial oak legs, and cross braces, also oak. It was very sturdy and satisfactory for the job. Nowadays we take that table with us on all locations, but for production companies which are forced by circumstances to subsist on a low budget, there are many less expensive end tables and even coffee tables available in out of the way stores which, though less attractive than ours, can be adequate.

"What really counts," says Bill Roberts, "is that it's really sturdy." He recommends that prospective buyers look underneath and carefully check the under-bracing before purchasing any table intended for use as a temporary camera rest.

It is surprising how simple, easy, and economical it is for a tripod to be moved, once the CG's have been located, and once the camera has been disengaged and put in a safe place. ■

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## "FILM/TAPE HORIZONS"

Continued from Page 151

any original footage.

A large number of optical effects were programmed from a video disc recorder. This device instantaneously provided such actions as slow motion, freeze frames, reverses, speeded-up movement, animation and programmed dissolves. Several scenes in the "Horizons" presentation required such effects as split-screens, wipes, colorizations and mattes. We routed these scenes through a control room switcher—where we could experiment until we got the effects we wanted.

As the automatic programmer assembled the videotape, we made changes and additions on the spot. We did not have to wait for film answer prints.

Electronic editing turns the assembly process into an extension of the creative experience. It is a great feeling for an editor to watch his work come to life with each entry into the programmer. An editor can mold his material while his creative juices are still flowing. This immediacy and involvement are impossi-

(LEFT) Myriad special effects are available if the film/tape post-production is routed through a control room switcher such as the one shown. Film director Phil Squyres and Stanford Agency producer Ken Heckman plan electronic matting for commercial. (CENTER) Assistant videotape supervisor Lloyd Rodgers programs HS-200 computerized video disc recorder for special effects. (RIGHT) Richard Carlson fills an order from advertising agency producer Mike Walman for both two-inch and one-half-inch videotape copies of commercials originally filmed in 16mm.

WFAA Productions  
RA-4000  
Assembly Information

#4

Production # F-262  
Title Union National Airport  
Total Length :30  
Preliminary Final X

Date 3/10/72  
Editor Dash  
VT Programmer Sheldahl  
Reel #: Wild 35 Master 36

Scene #	A-Roll	Dissolve	B-Roll	Scene Length	Description	Running Time
#1	NO.09.29.15 XO.09.31.17	BLACK 167f1			Audio Begins 001.19.14 ext us	<del>5:08</del> 5:07.29
#2		32	NO.11.31.01 XO.11.35.08		low angle	5:14:08
#3	NO.17.34.26 XO.17.34.16	86			tilt up from floor	5:18:28
#4		8	NO.16.40.04 XO.16.45.16		tracking	

Completed preliminary edit sheet shows entrance and exit cues—plus dissolve lengths and other assembly information.





ble with film printing. And if in the cold gray light of another dawn, the editor decides to make further changes, then all he needs to do is revise the program and have the material re-assembled.

I suppose that by now most people realize at least some of the advantages of 16mm film/tape post-production. While avoiding the expense, relative inflexibility and maintenance requirements of electronic photography, for example, a producer also avoids the waiting for—and expenses of—optical printing and additional chemical processing steps.

Special effects in our Atlanta Film Festival presentation—which would have required hours or days to obtain through an optical film printer—were integrated into the master footage at the touch of a button—and at a cost of a



(ABOVE RIGHT) Chief Program Production Director Bob Lovelady and videotape operator Lonnie Shields check cassette copies of "FILM/TAPE HORIZONS" that are being made available to university film production workshops. (BELOW LEFT) Editing in film/tape production may be done with either helical-scan VTRs or with more sophisticated devices such as the CMX-600. Film director Jack Smith is shown selecting precise edit points for a frame-accurate workprint. (RIGHT) The completed program is given to a videotape operator for quick, automated assembly. Film producer Lee Minard and engineer (r) Mike Castaneda are shown discussing a film/tape program prior to the information being entered into the random access programmer.



few hundred dollars instead of a few thousand!

And as for picture sharpness, some electronic 16mm effects—such as splits, wipes and mattes—are crisper than the same effects optically printed onto 35mm film—and then shown upon a television screen. There is nothing sharper on TV than an effect with an electronic "edge."

In addition, the use of original footage insures optimum image steadiness. Once film has been transferred to videotape, the master footage will never discolor, streak, get scratched or dirty. Plus, unlike either 16mm or 35mm film, a large number of videotape generations may be made without appreciable loss of picture quality.

Therefore, to the question "16mm for Television?"—which CFI President

Sid Solow asked in the September 1972 *AMERICAN CINEMATOGRAPHER*—the answer from a film/tape producer is an emphatic "YES!" The type of electronic film production unveiled at the Atlanta Film Festival this year successfully counters most of the traditional objections against 16mm film. By using a wider variety of film stocks without chemical duplication of the film image and by using frame-accurate, electronic time-code editing, 16mm televised film can look damn near as good as 35mm televised film—and on a budget that looks a helluva lot better!

If one can distribute totally on videotape—and objections to that limitation are becoming less pronounced with the ascendancy of videotape as the prime playback medium for network, local, cable and cassette television—then one

can produce a network television show in 16mm with an image quality which is competitive with that of shows produced in 35mm.

Our hope at WFAA Productions is that the phenomenal savings in time, significant savings in money and increased efficiency of 16mm film/tape production will enable regional production centers such as Dallas to provide network-quality programs and "made-for-television" motion picture production.

In any event, the type of electronic 16mm production demonstrated in the 1972 Atlanta Film Festival's "Film/Tape Horizons" presentation most definitely expands the opportunities for creative artists to use both film and videotape for communicating more effectively . . . more imaginatively. ■



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## MCA DISCO-VISION

Continued from Page 153

available. DISCO-VISION is a product of MCA Inc.'s research and development in the field of low-cost, high-density audio-video information recording and storage.

### GENERAL INFORMATION:

The DISCO-VISION playback unit is attached to the VHF antenna input terminals of any standard home television receiver and may be tuned to a channel which is not used for regular television programming. There is no pick-up stylus. The playback unit employs an optical system with a non-physical contact, low-powered helium-neon laser read-out which picks up the images and relays them electronically to the TV screen.

### THE DISC:

The 12-inch diameter DISCO-VISION disc is made of plastic sheet, typically mylar, is .010-inch thick, and provides full color/black-and-white, high resolution pictures for a minimum of 20 minutes and a maximum of 40 minutes playing time per side.

The disc, which closely resembles an ordinary long-playing phonograph record, is pressed in essentially the same way and is virtually indestructible, thus providing easy distribution by mail. It is metallized to permit handling with no more care than that required of regular phonograph records. It has its own plastic tray container so that the disc can be inserted into the changer without physical contact. This tray is 12-1/2 inches x 12-1/2 inches x 1/4 inch. The disc is recorded on one side only.

The program material appears on the disc in the form of a spiral running from the outer diameter of the disc inward with a pitch of 80 microinches per revolution. Density is 12,500 tracks per radial inch. The disc revolves at a rate of 30 revolutions per second and is played back by a laser beam. This beam is electronically steered to follow the recorded information spiral without making contact with the information track itself. The non-physical contact playback system eliminates record wear and provides an unlimited disc-playing life with proper user handling.

### THE DISC ALBUM:

DISCO-VISION discs will be housed in a plastic changer-compatible tray enclosed in a cardboard sleeve container. These albums will be available in several versions, typical of which are: 12-1/2 inches square and 3/8 inch thick for single discs, and 12-1/2 inches



square and 3/4 inch thick, holding five discs capable of 200 minutes of playing time. Recording on only one side of the disc allows play of the complete album without an interruption to turn over the stack.

The single and multiple disc albums are designed to sell for suggested list prices of \$1.99 to \$9.95 each depending on content, length and subject.

#### PLAYER UNITS:

The DISCO-VISION multiple-disc player/changer is a covered unit of metal construction with walnut grain finish and smoked plastic cover. It permits the user to stack up to 10 discs for a playing time up to 6-2/3 hours and can play pre-recorded information source material in either color or black-and-white to an unlimited number of standard television receivers or monitors simultaneously when fed by an appropriate distribution amplifier. There are six push-button controls on the front of the machine which are accessible with the lid closed. The dimensions are 22-3/4 inches wide x 18 inches deep x 11 inches high and the weight of the unit is less than 50 lbs. It is expected to retail for under \$500.00.

The unit's capability is such that at the touch of a control the action can be "frozen" and held or repeated over and over again or short sequences can easily be selected and played at will. There is also a single-disc player with dimensions of 16-3/4 inches x 18 inches x 8-1/2 inches, weighing less than 40 lbs. Its design is similar to that of the multiple-player unit, and it is expected to retail under \$400.00.

#### PLAYING THE ALBUM:

The DISCO-VISION multiple-disc album will be placed on the player/changer and discs automatically loaded onto the player turntable, played in sequence and returned to the album. It is slot-loaded with the flexible disc on its tray, inserted, played automatically and ejected in its tray. The change time from record to record is approximately four seconds.

Smaller albums and/or single discs may be loaded and played in any combination or order and may be added to the unplayed stack and withdrawn from the played stack at any time.

#### TECHNICAL DATA:

The DISCO-VISION format is standard NTSC, 525 lines, 60 fields. The disc drive speed is 1,800 RPM, and there are more than 300 lines of horizontal color resolution. Audio and video signal-to-noise ratios are each greater than 40 decibels. Two channels of audio are

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Since the laser playback beam is electronically steered to follow the information track, it may be programmed to read the same track innumerable times, providing stop action or freeze frame, with no wear imposed on the re-read information track, and with precise selection of the information to be re-traced. The laser light reflected from the information track of the disc provides the information for the audio and video program as well as for maintaining the laser beam on the track.

**FILM TRANSFER:**

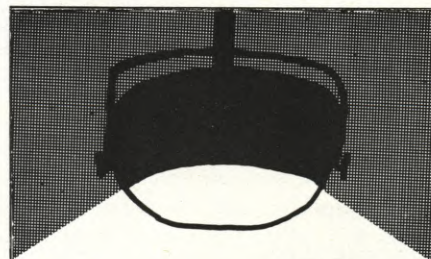
Motion picture film may be fed directly into the DISCO-VISION mastering machine from a film chain or may be transferred to professional magnetic video tape which is then played into the disc mastering unit. Mastering from tape, film or live sources is accomplished in a real time process using laser and electro-optical modulation techniques for full bandwidth and fidelity. The disc is subsequently processed to produce a nickel-plated stamper from which replica discs are produced.

**DISC REPLICATION:**

The recorded program material is reproduced on DISCO-VISION discs by a variety of processes. Stamping or embossing sheet mylar is typical, using heat and pressure to deform the surface of thermoplastic sheet material. The plastic is metallized to allow handling for playing on single-disc player models. Replicating cost is less than 40¢ per disc (not including cost of program material).

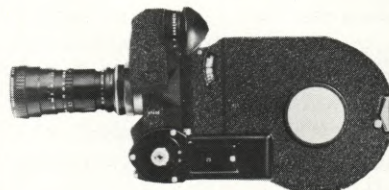
**INFORMATION STORAGE:**

The DISCO-VISION disc has the highest information density ever achieved on any medium. It is capable of storing approximately 40 billion bits per 12-inch disc. Random (fast) access to stored information is permitted by radial traversing of disc. The random access capability is accomplished automatically by use of the "in" and "out" mode control push button of the player



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unit. The rate of reading recorded information is greater than 30 million bits per second with the capacity to show in excess of 35,000 slides per disc.

The system permits, in addition to random access, program speed-up, slow-down, stills, reverse, or picture-by-picture replay.

**PROPRIETARY RIGHTS:**

MCA DISCO-VISION has what it believes to be truly inventive solutions to the problems of recording sight and sound information on a disc, replicating the disc and playing back the replicas. The company is confident it has made several "breakthroughs" in video player and video disc technology which give it substantial competitive advantages. The master disc and the apparatus that will be used to produce it is one of these breakthroughs. Its techniques for taking that master and producing "stampers" therefrom and the techniques for maintaining the high information density in pressing the final record are also significant breakthroughs for which patent protection will be sought.

MCA DISCO-VISION's playback system also includes certain special components. An example is a playback head system to automatically maintain the head-to-disc spacing and avoid scraping without the need to electrically servo or adjust this spacing. These component elements are protectible. In addition, the company has its own specially developed and unique tooling which is involved both in processing the initial laser-produced master through to the final disc replication stage and the specialized tooling relating to the alignment and optimization of the player equipment. The company also has some innovative electronic techniques for coping with many problems associated with storing information on a disc. These techniques and tooling will give DISCO-VISION cost advantages over competitive systems.

MCA DISCO-VISION researchers have developed several options from which to choose a complete system. The company has inventions related to each of the options. For example, since the company has a choice between a rigid replica disc and a relatively flexible replica disc, it also has pick-up heads designed to work with each.

Similarly, if the final disc is to be opaque only in the non-information areas, the company has patents to cover such a disc, and several methods of making it. If, on the other hand, the entire disc surface has the same degree of transparency or reflectivity, the company expects to be able to protect that disc as well.



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To retain these advantages, MCA DISCO-VISION, INC. has established certain information disclosure parameters in the proprietary areas beyond which the company does not find it prudent to elaborate publicly at this point in time.

However, it can be disclosed that the company holds six issued patents. Several additional applications for patent are currently pending. Still other inventions have been disclosed, applications for which are currently in preparation. Those patents, along with the company's other proprietary rights, establish conclusively that MCA DISCO-VISION, INC. has created a video disc system from start to finish, from the making of a master to the playback of a replica disc.

A great deal of sophisticated engineering technology and dedicated work of talented scientists have produced the MCA DISCO-VISION system. To the extent these breakthroughs can be protected by the United States' patent system, they have been or will be so protected. To the extent that the company will be able to maintain trade secrets on the non-patentable items, the company will rely on that protection as well.

### SPECIAL FEATURES:

Special features and capabilities of the MCA DISCO-VISION system include:

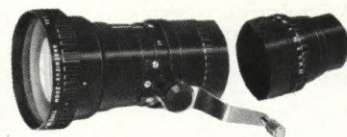
1. *Low-cost replicated disc*—under 40¢ per disc (not including cost of program material).
2. *Extremely high density information storage*—approximately 40 billion bits per 12-inch disc.
3. *Ability to freeze frame*—or repetitively read out a selected information track.
4. *Random access to stored information*—by radial traversing of disc.
5. *High rate of reading recorded information*—greater than 30 million bits per second.
6. *Search out*—fast forward switch.
7. *Digital Counter.*
8. *Frame crawl feature.*

Several applications are suggested by these features and capabilities, described briefly as follows:

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Tens of thousands of single tracks of printed-page facsimiles may be stored on a single 12-inch disc. Large numbers of books or catalogs could be stored on records where many copies of each are required for wide distribution. Read-out would be accomplished by a player that continuously scans the selected track or

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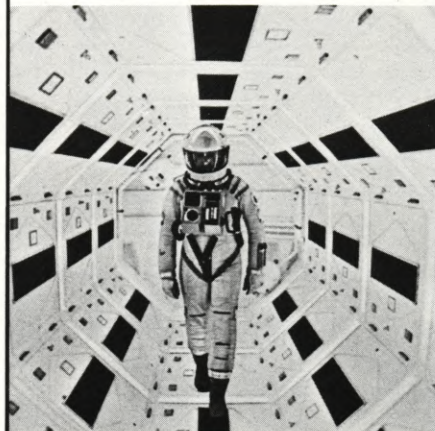
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**TEACHING MACHINES:**

Audio-visual educational material could be presented on a standard TV receiver using the DISCO-VISION system. The video disc has the ability to store multiple-answer material which can be selected at will. When this is used in conjunction with minimal data processing equipment, educational question-and-answer routines employing this "branching" and "sub-routine" capability could continuously feed back a program of appropriate audio-visual material predicated upon the students' response to initial presentations.

**CREDIT CARD VERIFICATIONS:**

The inexpensive nature of the replicated disc and the ability to store substantial amounts of information on a small disc provide an inexpensive mailable storage medium which could be distributed in quantity (on a weekly basis for example). The disc would contain up-to-date credit information which would be locally accessible in a matter of seconds using inexpensive office-installed machines. For example, more than 400 million nine-digit numbers (such as Social Security number) could be stored on a single 12-inch disc, with three-fold redundancy for accuracy.

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## DR. SIMMONS RETIRES

Continued from Page 205

In 1951 he began a long term of international responsibilities as a member of the graphic arts sales department at Kodak-Pathe, Paris, France. He returned to the U.S. for motion picture training in 1952 and rejoined Kodak-Pathe six months later as a member of its professional motion picture sales department.

Frothingham was transferred to the Paris offices of Kodak's international division in 1955. He was assigned to the international division in Rochester and appointed assistant manager for Europe in 1957. He was named manager of the European area in 1958 and became assistant general manager of the international markets division in 1962.

Frothingham served as chairman of the European Marketing Committee from 1964 to 1969 and was named to the Operations Committee-Europe upon its formation in 1969. Following the creation of the international photographic division in 1969, he became director of marketing of the division and was named chairman of the Inter-company Marketing Committee in 1970.

Frothingham was appointed to the marketing management staff, U.S. and Canadian Photographic Division in 1971 and named director, marketing adminis-

**Hall Conley, Director, special marketing promotions, has succeeded Frothingham as Director, Kodak marketing administrative services.**



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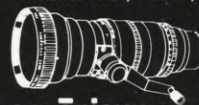
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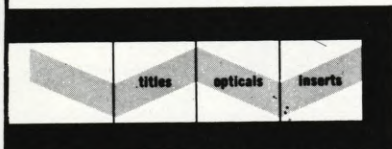
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trative services in 1972.

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ham graduated summa cum laude from  
Dartmouth College with a B.A. degree  
in business administration. He was a  
Rufus Choate Scholar and a member of  
Phi Beta Kappa.

Conley, of 9 Pittsford Manor Lane,  
Pittsford, N.Y., joined Kodak as a sales  
trainee in 1937. Two years later, he was  
assigned a sales territory in the Pacific  
Northern sales division. After comple-  
tion of military service in 1946, Conley  
over the years held increasingly respon-  
sible positions including assistant to the  
manager, Pacific Northern sales division;  
sales supervisor of the Pacific Northern  
and Southern sales divisions, and sales  
manager of the Pacific Northern sales  
division.

In 1963 he was transferred to the  
Distribution Center in Rochester as as-  
sistant manager of distribution. He was  
named marketing director of the East-  
ern region in 1966 and was appointed  
director, special marketing promotions  
in 1969.

Conley, a native of Andrews, N.C.,  
holds a B.S. degree in commerce from  
the University of North Carolina.

His professional affiliations include  
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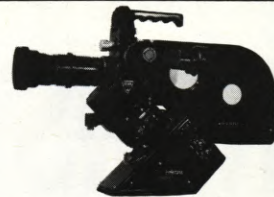
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## AMERICAN BICENTENNIAL

Continued from Page 179

- American experience
- Are emerging forms
- Are of universal interest and our common legacy

The traditions so identified must then be highlighted and dramatized. To insure their availability, it may be particularly necessary to:

- Reinforce those customs which are central to the American experience
- Give sustenance to emerging traditions which speak of today's concerns
- Maximize the use of all resources and facilities in the community

The final thrust of the program is to offer to all our citizens and visitors from abroad an opportunity to share and understand the vibrancy and the diverse expressions of our culture and to provide forums in which to:

- Compare and contrast
- Honor the individual
- Discover the common
- Explore the linkages
- Create the customs of Century III

The noted historian and former Commissioner, Dr. Daniel Boorstin, proposed a series of emphases for the Bicentennial. Included were:

*"Community*—To help us feel that all earlier Americans are the ancestors of all of us. To find the ties which hold all Americans together. To discover that our Bicentennial belongs not only to the United States, but to the people of the world. To remind us of the share of many nations in the building of our nation and for the need for a continuing sense of the common human adventure.

*"Totality*—To seek the whole meaning—the whole meaning—of the American experience for all Americans of all ages, all regions, all races, and all religions.

*"Continuity*—To strengthen our ties to the best in our past and to help discover the best in our future."

Festival USA embraces these emphases as guidelines for its program and recommends their thoughtful incorporation in the development of all Festival USA programs.

### THE ARTS

The arts in any culture provide both the most direct and the most intimate view of the people of that culture. The artist is their spokesman, their interpreter and the art forms serve as a mode to give expression to the basic concerns and joys common to human experience.

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Tours, exchanges, performances, exhibits, opportunities to sing and dance together, should all be thoughtfully developed to enhance man's understanding both of his unique place and his common bonds.

In developing a greater appreciation of our own culture and a sense of the interlocking of that culture with the cultures of the world, special emphasis should be placed on insuring that the arts reach into the lives of all our people. Thus widening audiences, personal participation and a permanent strengthening of the arts are key goals of the Bicentennial Arts program.

### MAJOR PROGRAMS

The following list of projects represents those which have been identified to date as warranting the special attention and efforts of the Commission.

*American Multi-Ethnic Folklore Company (Working Title)*—Most of the countries of the world are able to share aspects of their cultural heritage with the people of other nations through tours of their folkloric companies who perform native dance and song. Not so the United States, which has no company to demonstrate the artistic expressions of our diverse cultural heritage. Such a national company drawing on the folk arts of every strain of our population would be a singular and fitting project for the Bicentennial.

*American Arts Training School*—Many of the traditions which have contributed richly to the cultural growth of the nation are dying out. In many cases knowledge of the intricacies and the skills needed remain only in the hands and hearts and minds of our elder citizens. A training school is needed to insure that these traditions are preserved and can be handed down to future generations. The school will also support the continued existence of the Multi-ethnic Folklore Company.

*Art Fellowships*—In an effort to afford the artist an opportunity to bring his genius to bear on the Bicentennial Fellowships will be awarded to individuals. There will be two aspects to the program:

1. Bicentennial New Creativity Fellowships will be awarded to young artists to develop a particular painting, poem, play, piece of literature or musical score in connection with the Bicentennial. These new works of art will then be part of

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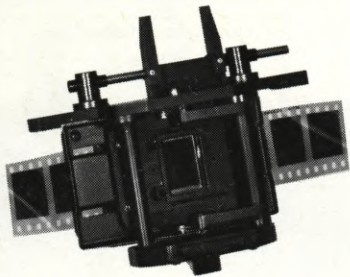


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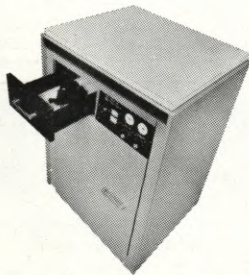


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public exhibitions and programs commemorating the Bicentennial.

2. Distinguished Artist Workshop Program—Grants will be made to enable professionals in the arts to spend a month with local arts groups in a program of technical assistance, offering training program workshops, expertise, advice and criticism.

We are aware of the complexity and pitfalls inherent in awarding such grants. Methods of awarding the grants and administering this program will be announced in the summer of 1973.

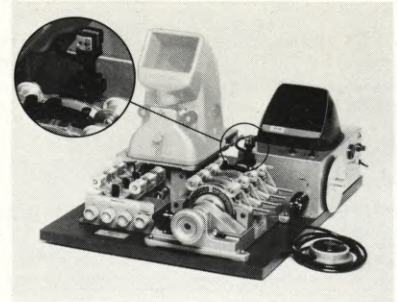
*Invitation USA*—During 1975 a special and a personal invitation will be extended to the people of other nations by the artists and craftsmen of our culture travelling abroad. This live introduction to the diversity of our culture will serve as a preview of the Bicentennial year activities and as a stimulus to international participation. While the details of the project are yet to be worked out it is our intent that the program involve individual artists, amateurs, privately sponsored groups and those sent abroad under the aegis of the Department of State.

*Artist-in-Residence Program*—This ongoing government program sponsored by the National Endowment for the Arts and the Office of Education provides an opportunity to put the creative talent of America in touch with our young who are the artists and audiences of the future. This project enables artists to work in the schools to inspire and educate our students. All efforts on the State, local, and national level should be increased to extend the impact of this program. In those areas where this particular program is not in operation, the community itself should not be deterred. Rather through after-school classes, assembly programs, workshops and performances it should seek to vitalize the relationship of our artists and our young people.

### SUGGESTIONS

The following list of projects has been selected from the many ideas received from various sources including members of the Committee and Advisory Panels, the State Commissions and organizations, individuals and groups from across the nation. They are presented here both as possible projects and as a stimulus to the generation of further ideas.

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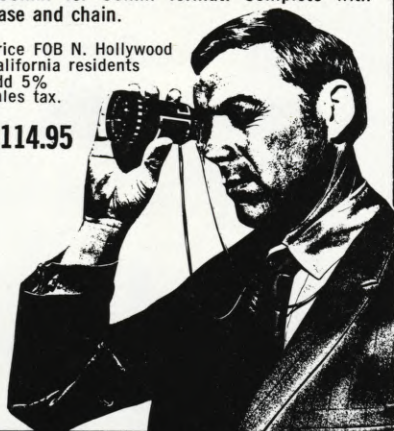
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1. Theaters can be encouraged to establish a Bicentennial Year policy in which all productions would have one performance a week that was free to the public.
2. A survey of a community can uncover many unused or underutilized sites in which performances can take place. Local government and industry can be especially imaginative in identifying such places. For instance: What about empty store-fronts becoming free studios for artists? What happens in the lobbies of major office buildings and Federal buildings at night? Could there be performances in school facilities on weekends and evenings? Are our parks and school yards fully utilized? What about loading docks which are often natural man-made stages?
3. America is rich in the works of its own playwrights and for the Bicentennial these plays should be the focus of the 1976 theater season.

In similar fashion works by American composers can comprise the programs of orchestras, chamber music groups, chorales, choruses, bands, folk groups.

American film should be featured, American crafts highlighted. The work of our architects should be clearly identified. The work of our painters and sculptors should be the subject of retrospective exhibits.

4. An international film festival has been proposed. A nation would be invited to send their "best" full length film to the United States for a series of festivals in cities throughout the United States in 1976.
5. Each State and community can undertake a search for photos depicting the life in the State from the invention of photography to the present. The photos can be exhibited first in the State and then circulated on a national tour.
6. A community, a state, an organization, or a group can invite an artist to their town. Artists from all disciplines and from all nations can participate and under the sponsorship of the community, the artist, while here, can create a work which would stand as a permanent reminder of the Bicentennial commemoration.

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ples of projects being undertaken by groups, organizations and Government agencies in honor of the Bicentennial. Those projects which have been accorded official recognition by the Commission are indicated by \*.

*Guidebook Series*—Travel in Europe is much enriched by the availability of guides such as those in the Michelein and Baedeker series. In honor of the Bicentennial, the Commission seeks to stimulate the publication of a guide to the culture of each State. The traveller then will have the opportunity to identify and understand the richness of this country as expressed through its architecture, arts, historical and archeological sites, museums, galleries, parks and universities.

\**Showboat*—The Eugene O'Neill Theater Center, the New York City Center and the South Street Seaport are developing a project called Showboat which could well serve as a model for cities other than New York. A restored and converted Showboat housing an operating theater/classroom complex will serve as a center for children's theater. The Showboat will also provide a needed focal point and a home for the over 120 community and ethnic theater companies in the five boroughs of Manhattan. As the Showboat moves from pier to pier each community at which the Showboat will dock will be able to enjoy the richness of cultural expression.

*A Summer Circuit Festival* and series of exchange performances beginning July 4, 1976, and extending into a second season in 1977 which is the Bicentennial of the Battle of Saratoga, has been proposed by Lincoln Kirstein. An ad hoc committee has been formed both here (headed by John Hay Whitney, former Ambassador to the Court of St. James) and in England (headed by the Earl of Harewood, Director of Sadlers' Wells Opera Company). The project will be carried out with private funds and will operate through a loosely drawn performing arts alliance including Tanglewood, Wolftrap, Robin Hood Dell, the Garden State Festival, the Saratoga Performing Arts Festival ancillary to the performances will be exhibits of painting and sculpture. The possibility of enlarging the circuit and including more foreign nations will be explored.

*Afro-American Music Bicentennial Hall of Fame*—A group in Ohio has incorporated and is developing an

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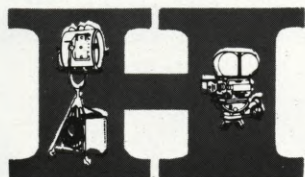


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Afro-American Music Bicentennial Hall of Fame, whose permanent location has not yet been determined. Plans call for annual inductions, collections of artifacts, works, and recordings, and a conservatory for scholars, students, musicians and instructors who want in some way to specialize in the field of Gospel, Rhythm and Blues, and Jazz. Their purpose is to help the perpetuation of the rich and colorful musical endowments made to Western Civilization by Afro-Americans.

*Bicentennial Inventory of American Painting*—The Smithsonian Institution is soliciting community assistance in its nationwide search to compile a Bicentennial Inventory of American Paintings executed before 1914. The response to this search has been impressive and some long lost treasures have been found.

*\*Bicentennial Photography Contest*—A Bicentennial Photography Contest sponsored by *LIFE* magazine focuses on the theme "A Declaration of Interdependence." Winners are to be announced in 1973 and a series of exhibits of the pictures is also proposed.

*A New Opera*—Under the co-sponsorship of the Texas Bicentennial Commission, the Houston Grand Opera Association and the Texas Fine Arts Commission, a new opera based on the American experience and created by an American composer will be commissioned and premiered in Houston in 1976.

**IF YOU HAVE AN IDEA, A SUGGESTION OR A PROJECT . . .**

1. Determine if the idea or project is particularly appropriate for your State or locality. If so, write directly to your State Bicentennial Commission.
2. If you have an idea which should be considered across the nation, send it to Commission headquarters.
3. If you have a project for which you seek Official Recognition by the ARBC, first write to Commission headquarters and briefly describe your program. A copy of the Criteria will be sent to you and the staff will provide advice on the preparation of your submission.

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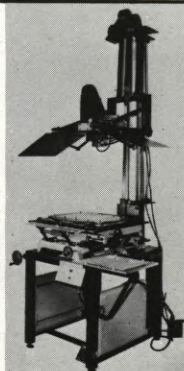
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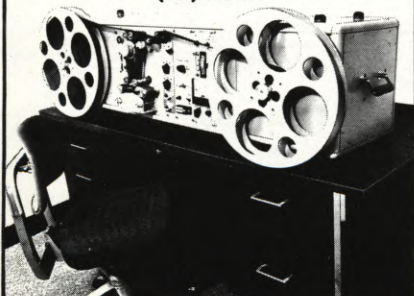
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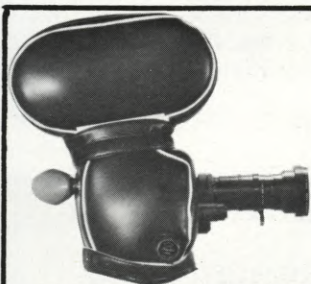
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Continued from Page 124

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Delivery is 90 to 120 days. For more information and prices, write or call ITT Electron Tube Division, 7635 Plantation Road, Roanoke, Virginia 24019. Telephone (703) 366-7601.

### ALAN GORDON ENTERPRISES ACQUIRES PHOTO ASSETS OF MORSE INSTRUMENT CO.; TO MANUFACTURE MORSE PRINTERS AND PROCESSORS

Alan Gordon Enterprises Inc. of North Hollywood, Calif., has acquired the photographic assets of Morse Instrument Co., including drawings, tooling and rights to manufacture and sell the Morse A-11B, A-18 and M-21 (military version A-14A) vacuum-platen, argon-lamp contact printers and the 9½" x 250' M-10 (military B-5A) film and paper processor.

AGE Inc. also purchased the complete line of Morse aerial roll film rewinds and film spools.

According to Don Sahlein, AGE Inc. senior vice president, the company is now in production of the products. Wholesale distribution will be handled by Sidney Bugelhoff, director of AGE Inc. Aerial Sales Division. Bugelhoff says that at present, no major changes in pricing policy are anticipated. Dealer and distribution channels currently remain as established by Morse but will be subject to review and revision. Current roster of distributors includes Interphoto, Kalt, Cinefot, Technigraphics and Rutherford. According to Bugelhoff, additional distributorships will be granted to qualified firms.

Sales to U.S. government agencies will be handled by Robert Kuhagen, government contracts administrator for the Gordon firm.

Alan Gordon Enterprises will continue to supply spare parts and components for equipment previously sold by Morse and now in users' hands.

Morse Instruments Co. was begun in prewar days as a specialized manufacturer of photographic laboratory equipment for government and industry

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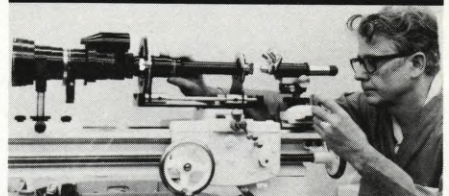
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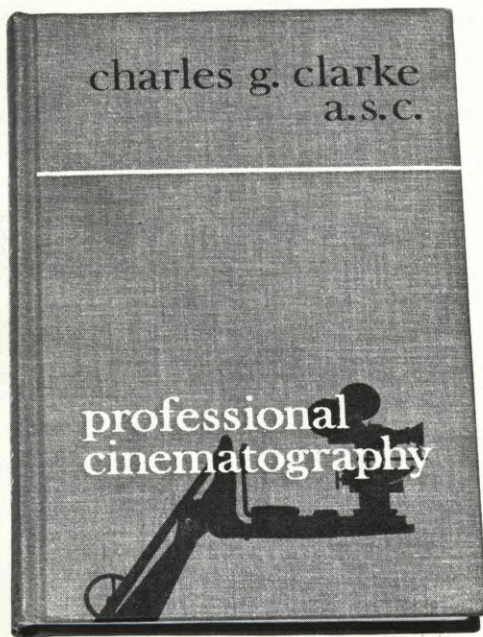
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ABOUT THE AUTHOR: Charles G. Clarke, ASC, a top Director of Photography at 20th Century-Fox for many years, and an ASC member, taught Advanced Cinematography at the University of California at Los Angeles, where he recognized a need for practical professional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

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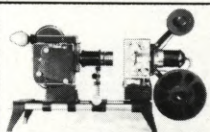
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dub down to one or two channels, and play back the final sound track in perfect synchronization with the pictures.

In addition, the MM-1000 when equipped with the film lock will start, stop, and reverse in perfect synchronization with sprocketed equipment and will return to sync from a stop.

It is designed for use in musicals, television specials, commercials and other filmed productions where quality sound is vital, according to A. A. Sroka, marketing manager, audio-video systems division.

"Performers and musical groups who have used multichannel recorders in recording sessions have long been interested in applying the same techniques to film making," said Sroka. "This is possible for the first time with the new film lock coupled with the MM-1000."

The system locks an MM-1000 multichannel recorder to an interlocked film chain of projectors and sprocketed recorders. It consists of a tachometer coupled to a projector which produces 100 pulses per film frame. The pulses are compared with a prerecorded control track on the MM-1000 to maintain synchronization.

The film lock system is mounted on an MM-1000 under the electronic channel controls for ease of operation. Controls on the film lock rack permit raising or lowering the original sound track a half tone for special sound effects. In addition, the recording on the MM-1000 may be moved a preset number of frames ahead or behind the film in sync. Additional MM-1000s may be locked into one tachometer.

Price of the film lock accessory for the MM-1000 is \$7,500. Units are available for immediate delivery.

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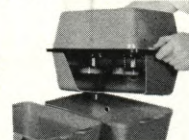
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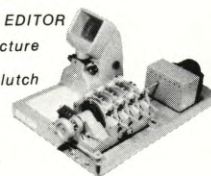
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## NEW PORTABLE TV CONSOLE BY CONCORD COMMUNICATIONS SYSTEMS

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The new unit can handle five simultaneous video inputs. Each of three 5-1/2" monitor screens can be switched to any input. And in addition to the previously described special effects provided by the unit, a preview circuit permits the operator to see a special effect on one of the monitor screens before it is added to the program.

A crystal-controlled 2:1 synchronization generator has five vertical and horizontal outputs, to synchronize up to five video cameras. There is also provision for external EIA synchronization for production of a composite video signal for cable or broadcast applications.

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Model PTC-15 has compact styling, with a low profile that gives an unobstructed view of performers in the room. Width is only 20-1/2 inches, height 13-1/4 inches, depth 27 inches. The console can be put on a table or shelf, or can be supported free-standing with an optional console base, Model CB-15, available from Concord Communications Systems. In addition, an optional, matching extension console with three monitoring screens enlarges the application to full studio video service.

Further information on this equipment may be had by contacting: Concord Communications Systems, 40 Smith Street, Farmingdale, N.Y. 11735



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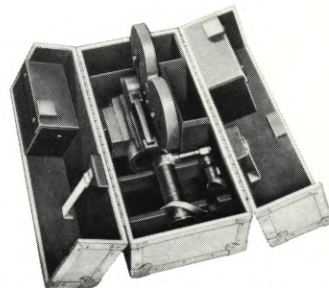
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“Frezzi-DC-Cordless”™ weight: 14 lbs.	“Frezzi-AC-Cordless”™ weight: 16 lbs.
<b>ACCURACY: Dead Sync in 1200 feet of 16mm</b>	
<p><b>Running time:</b> 8 to 10 400-ft. mags per charge. Quick-change plug-in battery.</p> <p><b>Electronics:</b> Crystal-controlled phase lock loop/proven all-temp. reliable DC motor. 2 year guarantee.</p> <p><b>Operates from</b> internal rechargeable nickel-cadmium battery, or external battery of standard voltage (12 to 16 volts DC), or car lighter socket, or battery-charger/converter connected to AC line.</p>	<p><b>Running time:</b> 6 to 8 400-ft. mags per charge. Quick-change plug-in battery.</p> <p><b>Electronics:</b> Crystal-controlled precision AC inverter drives standard conversion AC synchronous voltage-regulated motor for maximum life &amp; reliability under all weather conditions.</p> <p><b>Operates from</b> internal rechargeable silver-zinc battery or external battery (8 to 12 volts DC), or directly from AC line.</p>



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For information, prices, location of your nearest dealer, or for fast reliable service, write or phone James J. Crawford, Vice-President Engineering.

(Your present conversion can be made “Frezzi-Cordless”™ by FREZZOLINI; for details write, phone Mr. Crawford)

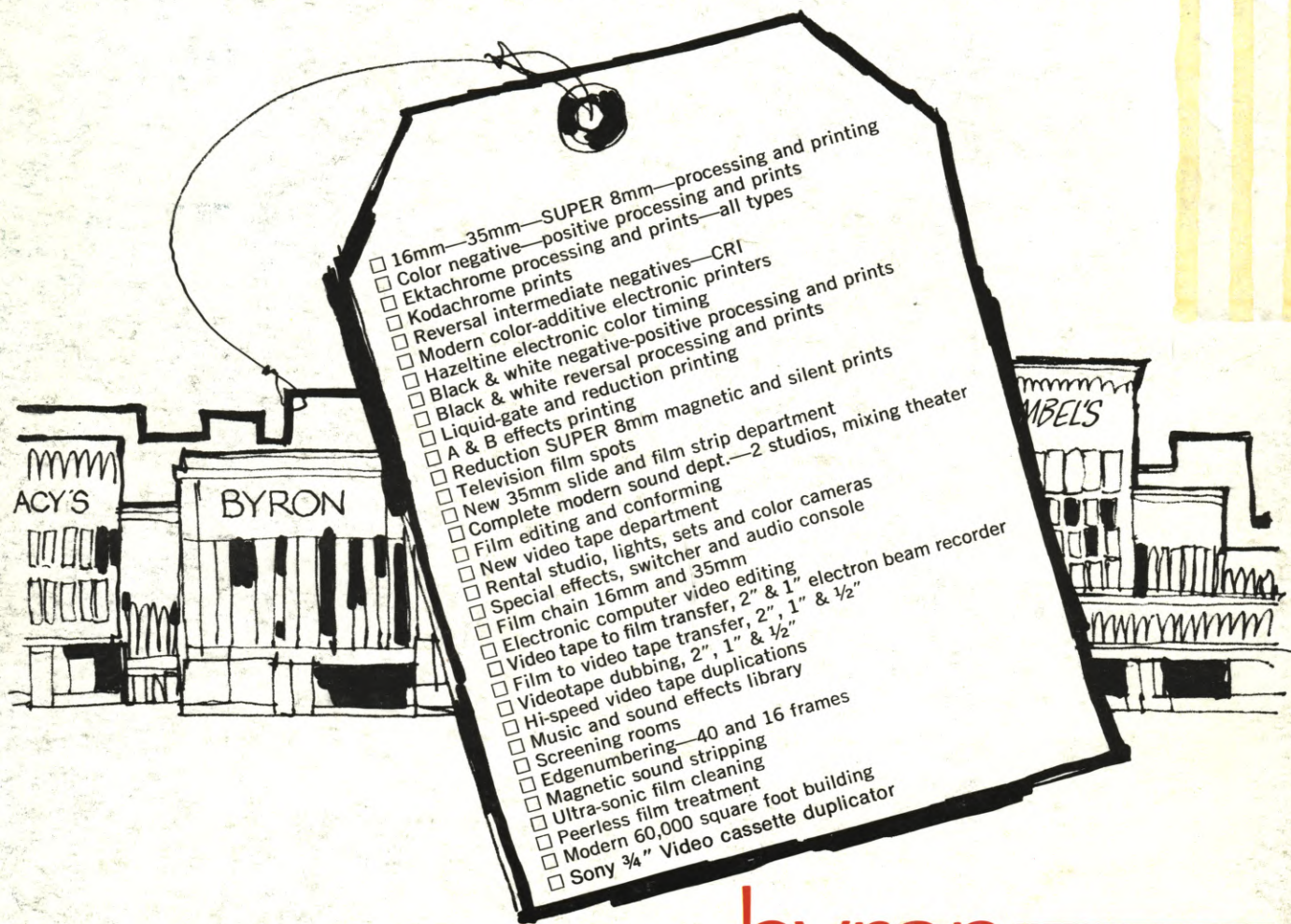
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