

The background of the cover is a photograph of St. Basil's Cathedral in Moscow, Russia. The cathedral's colorful, onion-shaped domes and intricate facade are the central focus. In the foreground, several people are walking on a city street. A woman in a long, white fur coat is walking towards the camera, while other pedestrians are seen in motion. The lighting suggests a bright, sunny day.

American
Cinematographer
International Journal of Motion Picture Photography and Production Techniques

AUGUST 1974
ONE DOLLAR

SPECIAL ISSUE: FILM-MAKING IN THE SOVIET UNION

POST INVENTORY

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16mm CAMERAS

Auricon Super 1200, optical/magnetic, 3 magazines, viewfinder, optical and magnetic amplifier & carrying case	used	\$3600.00
Auricon 400' Conversion, w/finder, optical amplifier & carrying case	used	850.00
Auricon 400' Conversion, zoom door and optical amplifier	used	1100.00
Arriflex 16S, variable speed motor, 400' magazine & torque motor	used	3300.00
Bolex 16mm Pro, 12-120 zoom lens, 400' magazine, power pack, crystal sync & carrying case	new	7500.00
Eclair NPR Super 16 with 400' magazine no motor	used	6100.00
Eclair NPR 16mm 400' magazine, 12V constant speed motor, TV ground glass, Hi-Hat adapter, motor cable & carrying case	used	5500.00
Eclair ACL 16mm, 24 FPS crystal motor, 2-200' magazines, battery & pistol grip	used	5000.00
Milliken DBM 55 High Speed Camera 2 to 500 FPS variable speed, reflex viewing system, boresight, 12-120 Angenieux zoom lens w/finder	used	3650.00
Mitchell 16mm in blimp, motor, finder, 400' magazine, follow focus, 15, 25, 35 and 50mm Baltar lenses	used	4400.00
Arriflex 16mm Fiberglass blimp	new	2495.00
Arriflex 16mm Aluminum blimp	new	1500.00
Arriflex 16S Aluminum blimp	used	1200.00
Maurer 110V motor	used	25.00

35mm CAMERAS

Arriflex IIC with sync generator, 400' magazine, matte box, 16V constant speed motor, & carrying case	used	3950.00
Arriflex IIB 16V variable speed motor, matte box, 2-400' magazines, 3 lenses, battery pack	used	2000.00
Bell & Howell single lens Eyemo with 35, 50 & 75mm lenses	used	395.00
Bell & Howell Spider Eyemo body with magazine back and footage counter	used	350.00
Bell & Howell compact turret Eyemo with 1" speed Panthro lens	used	275.00
Bell & Howell compact turret Eyemo body	used	295.00
Bell & Howell compact turret Eyemo	used	275.00
Bell & Howell single lens Eyemo with 3 lenses & carrying case	used	350.00
Bell & Howell single lens Eyemo body only	used	125.00

Mitchell standard with AC/DC wild motor 1000' magazine, 40, 50, 75mm Cooke speed Panthro lenses	used	2100.00
Mitchell standard with 110V AC/DC motor 2-1000' magazines, matte box, 40, 50, 75, 100mm lenses & carrying case	used	2200.00
Mitchell standard with 12V motor, 110V motor, wide angle matte box, regular matte box, 2-1000' magazines, 4-400' magazines, viewfinder, 24, 30, 40, 50, 75, 100, 152mm lenses & all carrying cases	used	2500.00
Wall single system sound camera with amplifier, 4-400' magazines, 30, 50, 75, 100mm lenses & all carrying cases	used	475.00
Wall single system sound camera with amplifier, 4-400' magazines, 40, 50, 75mm lenses & all carrying cases	used	375.00
Akely audio camera with 2-1000' magazines amplifier & carrying cases, No galvo	used	300.00
Debie 35mm Hi Speed camera 200FPS	used	200.00
Bell & Howell Eyemo 12V motor	used	15.00
Bell & Howell 35mm x 400' magazines	used	20.00
Bell & Howell 35mm x 1000' magazines	used	50.00
Wall 35mm x 1000' magazines	used	30.00
Mitchell 35mm x 400' R35 inverted magazines	used	150.00

LENSES

9.5 to 57mm Angenieux zoom w/shade Eclair mount	new	1800.00
9.5 to 95mm Angenieux zoom "C" mount	new	2600.00
9.5 to 95mm Angenieux zoom Eclair mount	used	1600.00
12 to 120mm Angenieux zoom Eclair mount	used	800.00
12 to 120mm Angenieux zoom Arriflex mount	used	800.00
12 to 240mm Angenieux zoom "C" mount w/finder	used	2800.00
24 to 240mm Angenieux zoom BNC mount w/finder	used	900.00
25 to 100mm SOM Berthiot zoom	used	275.00
25 to 250mm Angenieux zoom neutral mount	new	4700.00
16mm T/2.4 Zeiss Distagon Arri mount	new	865.00
24mm F/2 Zeiss Distagon Arri mount	new	770.00
25mm F/2 Kinoptik Arri mount	used	150.00
25mm F/1.5 Schneider Xenon Arri mount	used	169.00
25mm F/2 Cooke Speed Panthro BNC mount	used	175.00
28mm F/2 Schneider Xenon Arri mount	used	150.00
35mm F/2 Cooke Speed Panthro BNC mount	used	135.00

35mm F/2 Schneider Xenon Arri mount	used	199.50
40mm F/2.3 Baltar BNC mount	used	150.00
50mm F/2 Cooke Speed Panthro BNC mount	used	175.00
50mm F/2 Rodenstock Heligon Arri mount	used	175.00
50mm F/2 Zeiss Planar Arri mount	new	560.00
50mm F/1.5 Angenieux "C" mount	used	179.50
50mm F/2.3 Astro Pan Tachar BNC mount	used	125.00
75mm F/2 Cooke Speed Panthro BNC mount	used	315.00
75mm F/2.3 Astro Pan Tachar BNC mount	used	125.00
75mm F/2.3 Baltar BNC mount	used	99.50
75mm F/2.3 Astro Berlin Mitchell mount	used	49.95
75mm F/2 Schneider Xenon Arri mount	used	150.00
75mm F/2 Kinoptik Arri mount	new	269.00
75mm F/2 Schneider Xenon Arri mount	used	150.00
75mm F/2 Cooke Speed Panthro Arri mount	used	460.00
85mm F/2 Zeiss Planar Arri mount	new	600.00
100mm F/2.3 Baltar BNC mount	used	150.00
100mm F/2.3 Baltar Mitchell mount	used	150.00
100mm F/2.3 Astro Pan Tachar BNC mount	used	135.00
100mm F/2 Cooke Deep Field Panthro BNC mount	used	175.00
100mm F/2.6 Cooke Kinetel Neutral mount	new	198.00
100mm F/2.5 Cooke Deep Field Panthro Mitchell mount	used	175.00
100mm F/2 Schneider Cine Xenon Arri mount	new	860.00
100mm F/2.5 Angenieux "C" mount	used	49.50
150mm F/4.5 Cooke Telekinic BNC mount	used	165.00
200mm F/4.5 SOM Berthiot Arri mount	used	79.50
216mm F/5.6 Cooke Telekinic BNC mount	used	175.00
250mm F/4.5 Wollensak Mitchell mount	new	89.50

This is not a complete listing of our Lens Inventory. We have many more in BNC, Mitchell, Arriflex and Wall mounts.

TRIPODS & MOUNTING EQUIPMENT

Akely Baby legs	used	25.00
Akely Hi-Hat	used	15.00
Akely Gyro Head w/tripod	used	80.00
Arriflex Friction Head on board	used	125.00
Arriflex Friction Head & Tripod	used	95.00
Cinekad shoulder brace	used	10.00
Houston Fearless Panoram Dolly 5 wheel	used	400.00
Mitchell Baby legs w/triangle	used	33.00
Mitchell standard tripod	used	95.00
Mitchell Friction Head	used	200.00
Mitchell Friction Head on board	used	225.00
Pro Jr. Gyro Head w/standard legs	used	300.00
Pro Jr. Gyro Hi-Hat on board	used	25.00
Vinten Gyro Head w/ball on Hi-Hat	used	70.00

EDITING EQUIPMENT

Bell & Howell 35mm foot splicer complete	used	450.00
Bell & Howell 35mm foot splicer (one splice plate missing)	used	250.00
Moviola UD20CS w/separate magnetic head	used	2050.00
Moviola UL20CS w/separate magnetic head	used	2200.00
Moviola D20 complete w/footage counter	new	1650.00

LIGHTING

Bardwell, McAllister 2KW Head w/cable	used	35.00
Bardwell, McAllister 5KW Head w/cable	used	50.00
Mole Richardson 750 watt spot head	used	25.00
Mole Richardson 3KW Cyc Strip Lite	used	56.00
Groverlite Senior Heads two in case	used	50.00
Colortran LQF-10-30 head in case	used	50.00
Colortran 1KW Softlite w/lamp	used	100.00
Colortran Grover Lite Kit includes 2 heads, 2 stands, 1 booster transformer	used	150.00
Colortran LQF-10 1KW Focusing Head	used	38.00

Prices subject to change without notice.

Hundreds of additional items available at huge savings — write, wire or phone for quotations / satisfaction guaranteed or money refunded within 10 days of purchase / add sales tax where applicable — shipping charges additional / all equipment subject to prior sale / trades accepted.



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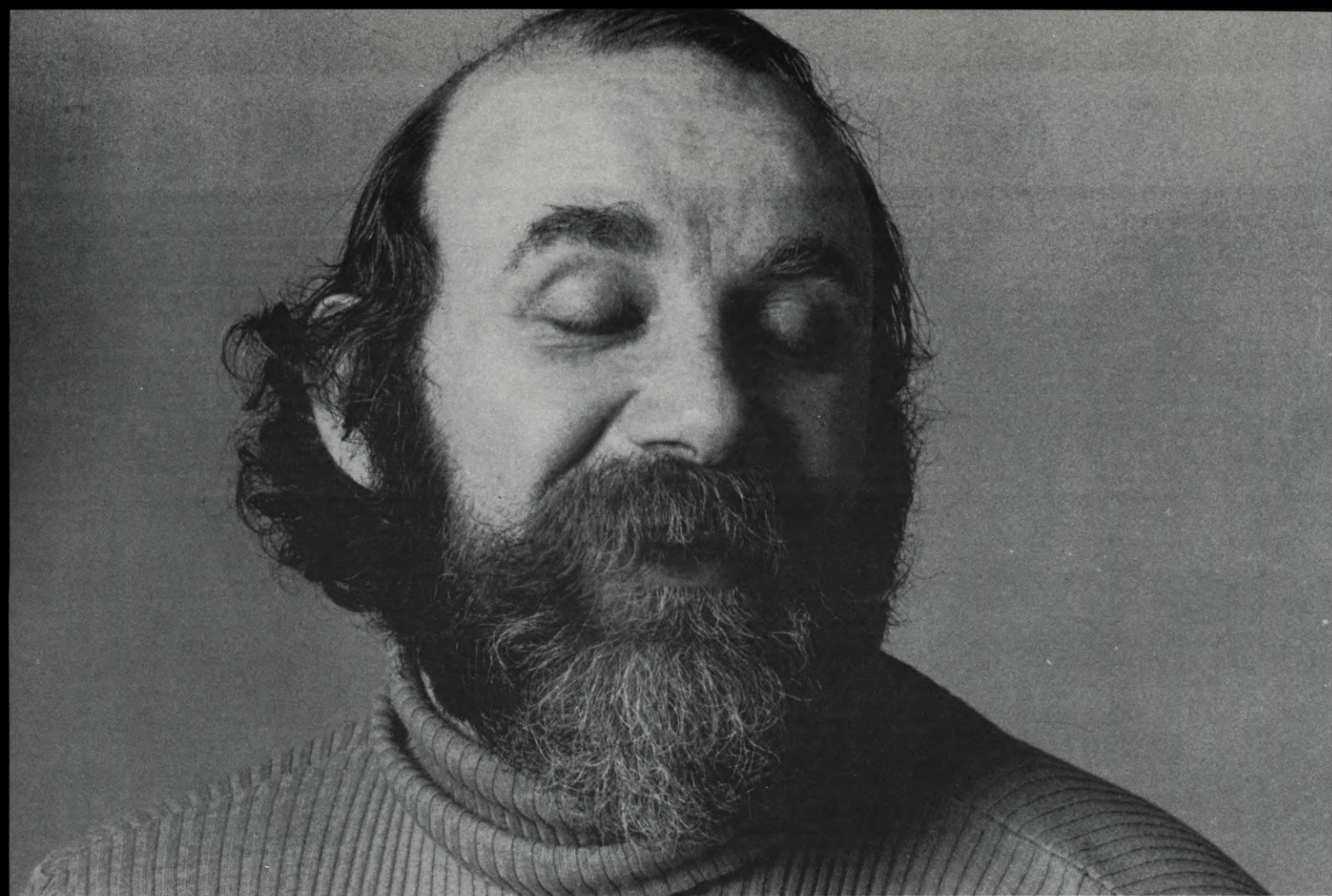
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And that makes me a good guy to know.

The Wilcam W-2+4 is the only pure reflex camera in its class. It has a light meter, VU meter and footage counter all built right into the viewfinder.

Since gears are noisy, the Wilcam has a belt drive instead. A rotating mirror that always stops closed. A fingertip controlled 4-position internal filter wheel. And a detachable 2-channel AGC amplifier that becomes an integral part of the camera, making cables obsolete. The only thing lighter than the magnesium body is the price; just about what you'd pay for a lot less camera.

If you'd like some literature on the new Wilcam just call and ask for Sy Cane, your friendly East Coast monopoly.



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AUGUST, 1974

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ON THE COVER: American ice skating star Peggy Fleming walks through Moscow's Red Square, with St. Basil's in the background, while in the USSR to film "PEGGY FLEMING VISITS THE SOVIET UNION", NBC-TV special produced by Bob Banner Associates.

The American Society of Cinematographers is not a labor union nor a guild, but is an educational, cultural and professional organization. Membership is by invitation to those who are actively engaged as Directors of Photography and have demonstrated outstanding ability. Not all cinematographers can place the initial A.S.C. after their names. A.S.C. membership has become one of the highest honors that can be bestowed upon a professional cinematographer, a mark of prestige and distinction.

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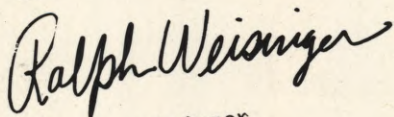
Dear Leo:

Over 22,000 air miles and 35,000 feet of film ago, we set out to make the world's first film about public relations. Since then, we've crossed the country several times, shooting over 35,000 feet of sync every-where from tiny Neodosha, Kansas, to the corporate eyeries of New York.

As you know, despite owning several cameras, we chose ACL, after considerable investigations. After 2 months, we abandoned our backup camera! Thanks to the ACL's inconspicuous shape and size, its quick-change magazines and its reliable day-in, day-out performance, we shot many scenes I'm convinced we'd not otherwise have captured.

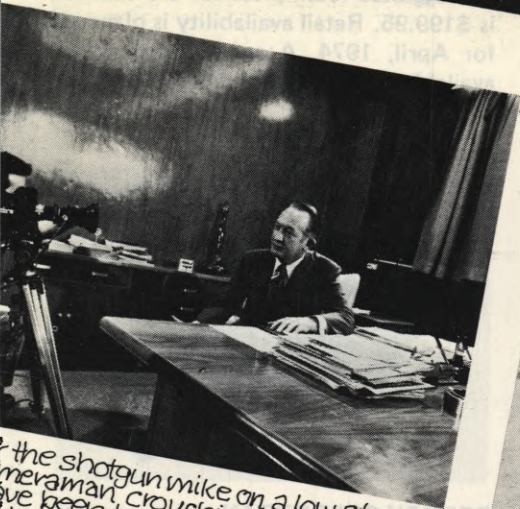
As you can see from the enclosed photos, your ACL made just about every shot we took easier and faster.

Best regards,

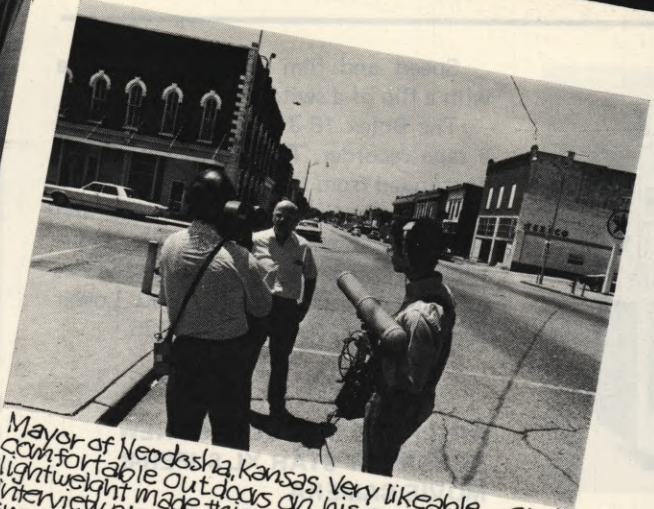


Ralph Weisinger

GOLD MEDAL - BEST PUBLIC RELATIONS FILM-ATLANTA INTERNATIONAL FILM FESTIVAL
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the shotgun mike on a low stand
meraman, crouching in the corner,
ve been talking gott over coffee,
d magazine charges kept
n flowing.



Mayor of Neodesha, Kansas. Very likeable... and
comfortable outdoors on his own "turf." ACL's
lightweight made this longer-than-normal
interview pleasant on my shoulder while its
small size kept us from attracting crowds.



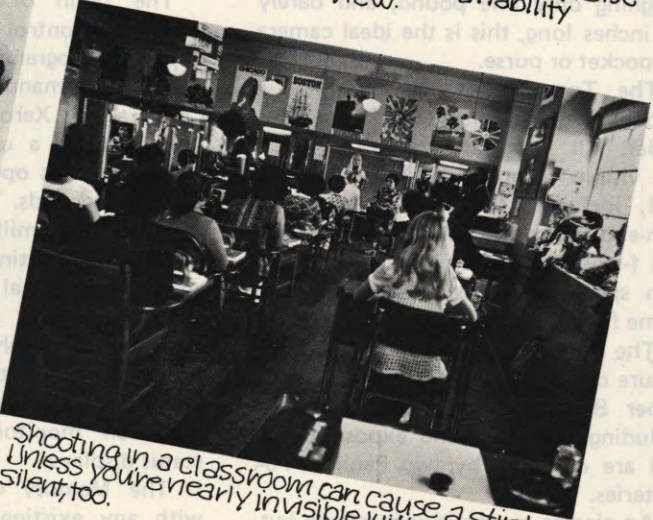
inside a car, hand-held
es this as comfortably in
he was rock-solid.



Another Mayor. His Honor, Jean Drapeau of
Montreal. All I did was back off slowly, raise
camera and shoot. Kept his affability
through the interview.



er I could walk.
at many hours
comfortable.



Shooting in a classroom can cause a stir too.
Unless you're nearly invisible with ACL I'm
silent, too.

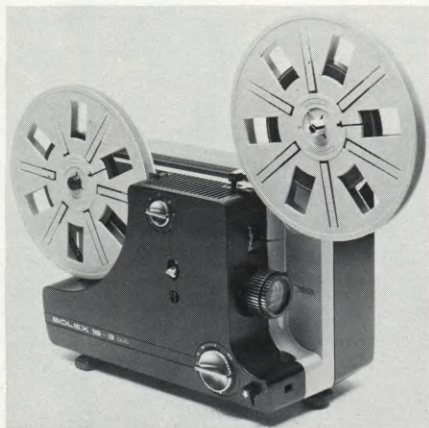
Avon Productions' new film "Opinion of the Publics" provides some remarkable insights about public relations — from the mouths of the 'publics' involved. Written and directed by Avon president Ralph Weisinger, it utilizes spontaneous material gathered over 12 months of shooting. If spontaneity and reliability are important to the kind of shooting you do, ACL's special qualities can make an important contribution. Find out more at your Eclair dealer, or send for our fact-filled brochure to Eclair Corporation of America, 62 West 45th Street, New York 10036 (212) 869-0490 or 7262 Melrose Avenue, Los Angeles, California 90046 (213) 933-7182.

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WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE



THE BOLEX 18-3 DUO: A COMPACT DUAL 8 PROJECTOR

The Bolex 18-3, the new dual 8 projector from Bolex, offers unmatched projection possibilities with five forward and five reverse projection speeds.

Either Super-8 or normal 8 film may be projected at 3, 6, 9, 12 or 18 fps. Projection speed can be changed without interruption while the Bolex 18-3 is running.

The really outstanding feature of this machine, however, is that the slow-motion speeds are projected without flicker. The unit's shutter runs continuously at 18 fps. The fan turns at maximum speed for the most efficient cooling at all speeds.

In addition, a cathathermic heat filter protects film at slow-motion speeds, but does not significantly reduce the brightness of the 12V 100W halogen lamp with dichroic mirror. A heat absorbing grid protects the film in still projection.

Rapid reverse running through the filmgate permits almost "instant replay" of a scene, removing of a partially projected film and rewinding of a finished film without any manual handling of the film. The filmgate opens automatically for rapid reverse and closes automatically when switching from rapid reverse to forward running or reverse projection.

This lightweight projector has a 400' film capacity, and threading is completely automatic. The 18-3 has a built-in film cutter. The threading lamp lights up the take-up reel so the operator can see in a dark room whether the film has attached itself to the reel. The lamp turns off automatically as the projection lamp goes on and turns on when the projection lamp is turned off.

Speed and film selection are made with a flip of a switch.

The Bolex 18-3 can be connected to a tape recorder. The recorder is started or stopped from the projector switch.

Like all fine Bolex cameras and projectors, the Bolex 18-3 Duo is distributed exclusively in the United States by Paillard Incorporated, 1900 Lower Road, Linden, New Jersey 07036.

AIC PHOTO INTRODUCES NEW BAUER TOP STAR XL SUPER-8 MOVIE CAMERA

The smallest XL camera to feature a power zoom lens, the Bauer Top Star XL, has been introduced by AIC.

The pocket sized camera, equipped with a 2.5X power zoom lens with a range from 8mm wide angle to 20mm telephoto, has an ultra-fast f/1.2 lens and automatic through-the-lens exposure control, which will close down to f32 to avoid overexposure. The 225° shutter has an additional 1/2 stop, and allows maximum light to reach the film.

This ultra-compact Bauer camera allows filming at "existing light", whether indoors or out, in low light conditions, as well as brilliant sunlight.

The power zoom is controlled by two separate push buttons, one for wide angle, the other for telephoto, in a shooting range from five feet to infinity. Weighing only one pound, and barely six inches long, this is the ideal camera for pocket or purse.

The Top Star XL incorporates a through-the-lens, parallax free, viewfinder. All important camera controls are visible through the viewfinder as well, including the film advance and film-end indicator, battery charge light and f-stop indicator. The camera has a film speed of 18fps as well as single frame feature.

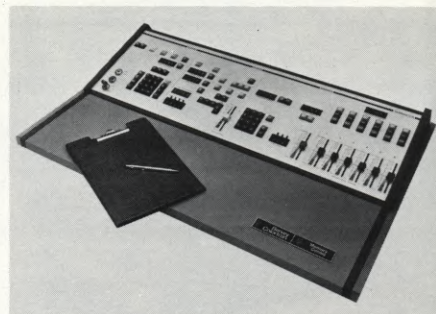
The camera automatically adjusts exposure controls for 40 ASA or 160 ASA Super 8 film. All camera functions, including film drive and exposure control are operated by two Penlight AA batteries.

An electro-magnetic soft release button is conveniently located for motion-free filming. The Top Star has a built in type A filter for daylight correction 40.5mm in size.

Additional features include adjustable eye piece, tripod socket and film

type indicator window.

Suggested retail price for the camera is \$199.95. Retail availability is planned for April, 1974. A soft pouch case is available at a suggested price of \$17.25.



BERKEY COLORTRAN INTRODUCES COMPUTERIZED LIGHTING CONTROL SYSTEM

A lighting control system that incorporates a computer memory is now available from Berkey Colortran, Inc.

Dubbed the Colortran Memory Center, the system can control over 500 dimmers and 1000 scenes, up to eight simultaneous crossfades and up to 18 submasters in groups of six. Instantaneous manual override of all functions is provided, negating the need for matching. The system's exclusive store fade time feature eliminates setting during playback. Up to six Alpha scenes may be inserted between each existing scene. The Memory Center also allows for automatic sequencing of randomly numbered scenes.

The Memory Center is completely modular in design. Basic units are scene, fade, dimmer and submaster modules, and status displays.

The "brain" of the Memory Center is its system control unit (SCU), a modular, microprogrammable controller designed and manufactured for Berkey Colortran by Xerox Data Systems. The SCU features a unique 3-buss system which provides operational response in 350 nanoseconds. The SCU can respond to over 2.8 million commands per second, and continuously self-checks to ensure operational integrity of working programs.

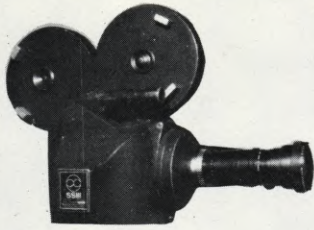
Available peripheral devices include a digital tape cassette recorder, "floppy disc" recorder, teletype terminal, color television monitor and special scene status displays.

The Memory Center will interface with any existing make of electronic lighting control system.

An illustrated system description, detailed specifications and prices are available from Berkey Colortran, Inc., 1015 Chestnut Street, Burbank, Ca. 91502; Phone: (213) 843-1200.

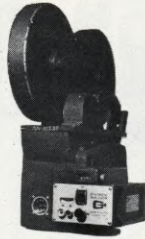
16mm Camera Potpourri Sale

(All Equipment is Used Unless Otherwise Specified)



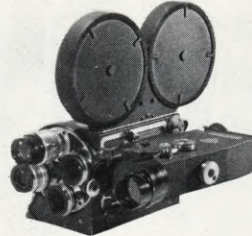
SS III

Sound camera with MA II C amplifier, magnetic recording head, 400' magazine, 100-D power supply. LESS LENS. \$2695.00



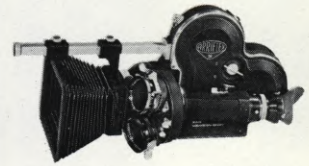
Auricon Conversion

With CP crystal control installed, battery, charger, MA II amplifier and record head, two 400' magazines, LESS LENS, with case. \$2950.00



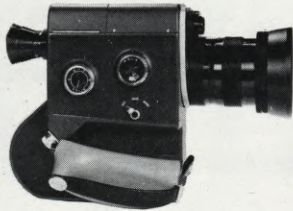
Mitchell 16

Camera with lenses, 15-25-50-75mm Baltar 115v sync motor, viewfinder, matte box, two 400' magazines, and three carrying cases. \$3995.00



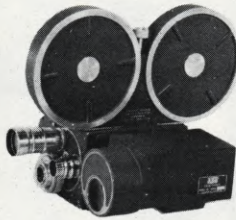
Arriflex 16 S

Camera with VS motor, CS motor, two 400' magazines, torque motor, standard matte box, Schneider 10mm, 16mm, 25mm, and 50mm lenses, and belt battery. \$4495.00



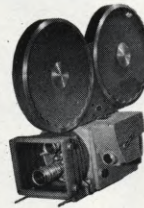
Canon Scoopic

Camera with a 13-76mm lens, battery, charger, lens hood, and case. \$745.00



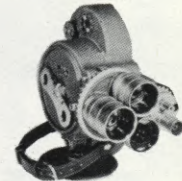
Maurer 16

Camera with two 400' magazines, precision optical viewfinder, matte box. 115v motor, less lenses. Excellent. \$1650.00



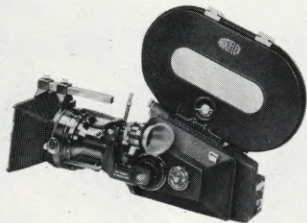
Auricon Super 1200

With TVT shutter, zoom door, blimp hood, 1200' magazine, "S" galvo, NR 25 amplifier, Auricon tripod, trunk. New cost over \$7000.00. Sale price \$3495.00



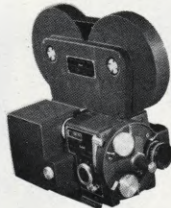
B&H 70DR

Camera with Angenieux f1.3 15mm, f0.95 25mm and f2.5 75mm lenses. With matching objective viewfinder lenses. \$795.00



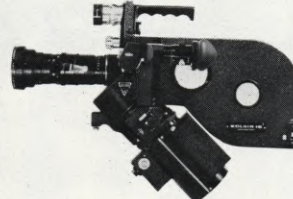
Arriflex 16 BL

Camera with Angenieux 12-120, CS motor, two 400' magazines, two 12V batteries, power cable and case. \$4900.00



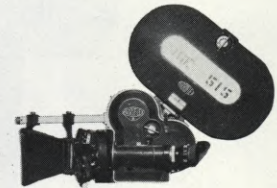
Eastman Reflex

Camera with VS motor, three 400' magazines, Angenieux Ekton 25mm and 150mm lenses, and Angenieux Ekton 17.5-70 zoom lens. \$1695.00



Eclair NPR

Camera with Ciblo constant speed motor, 360° rotating eyepiece, two 400' coaxial magazines, power cable, and belt battery. \$3950.00



Arriflex 16 S

Camera with VS motor, two 400' magazines, torque motor, 16mm, 25mm and 50mm Schneider, 17-85 Pan Cinor zoom, lenses. Matte box. \$3995.00

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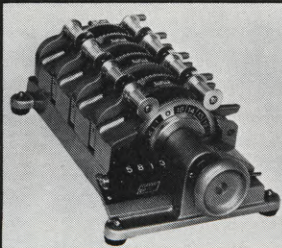
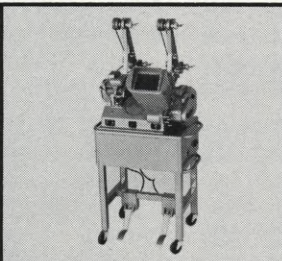
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rosco says

Photography
Under
Fluorescent
Lights.

Part II... Putting
the Green In!

In PART I, the concept of using camera filters or Rosco's TOUGH MINUS-GREEN was presented as one solution to the fluorescent problem. Following is a system of Rosco Light Control Media which permits good color rendering under *unfiltered fluorescent lighting*, and allows the use of a variety of other light sources at the same time.

This system requires the use of a camera filter (i.e. the Tiffen FLB or FLD), and is based on the principle of "putting the green in" (well, almost!). The idea is that if all the set illumination has the spectral energy balance of "fluorescent daylight," the camera filter will provide the final correction for proper color rendering at the film. The following Rosco Light Control Media provide the full range necessary to make the system complete:

- (1) TOUGH PLUSGREEN 50—This is used on 3200° K light sources, and converts them to "fluorescent daylight." It is a heat-resistant polyester material, and is available in 27" and 54" wide rolls.
- (2) TOUGH PLUSGREEN—This filter medium is used on "FAY" type lamps, or other sources in the region of 5000° K. It too is polyester, and is supplied in 27" and 54" wide rolls.
- (3) WINDOWGREEN—This filter is used to modify incident natural daylight, and convert it to "fluorescent daylight." This is available in 58" wide rolls.

This family of Rosco Light Control Media is a complete system for location photography under fluorescent lighting. Full advantage may be taken of the available light levels, and the appearance of the existing fluorescent lighting. The normal range of artificial set lighting sources may be used, and provision has been made for dealing with incident daylight! Another outstanding example of Rosco's dedication to the solution of the lighting problems of cameramen everywhere.

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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 I wish to use before-the-lens mattes or masks for split-stage and other double exposure effects. Can you give me some kind of mathematical formula for calculating the correct distance before the lens to place the masks relative to focal length of lens and aperture used in making the picture? I am using a 16mm Auricon Cine-Voice camera.

A I do not know of a mathematical formula for making such a calculation; however, it is desirable to position the mattes so that they are slightly out of focus. This will give a soft blend-line at the split and consequently lap each exposure, making the split invisible. The approximate position can be arrived at by referring to the lens depth-of-focus chart and placing the mattes inside the expected depth of field for the lens stop being used.

Q What kind of meter is most commonly used in studios for footcandle measurements?

A There are quite a few footcandle meters on the market, all good. The one I use is the Spectra. It is calibrated with a scale from 0 to 300 footcandles and a range extended by a 10X multiplying slide which will allow you to read from 0 to 3000 footcandles.
W.S.

Q On TV documentaries I often see a large-scale map, or a scene of a painting, or similar still picture which is zoomed in on to capture only a small segment of the map, or a small figure in the picture. Is this work done in the camera?

A The professional way to accomplish the kind of zoom shot you describe is to employ an expensive animation stand which allows the camera to be brought closer to the subject while simultaneously adjusting the lens

focus by means of an appropriate linear cam. You could improvise the equivalent by suitably mounting your camera on a horizontal track and having an assistant adjust the distance setting on the lens in accordance with pre-measured marks on the track. Obviously, the use of a camera with a reflex finding system will contribute vastly to the success of such improvisation.

If you do not require many such shots, you may find that the cost of having them done professionally is not excessive.

Q I have had conflicting opinions from different labs regarding the best way to get Super-8 prints. Some say going directly from Super-8 to Super-8 yields the sharpest prints; others say reducing from 16mm is better. One lab feels that if you shoot your original in Super-8, it should be blown up to 16mm and then reduced. Some say contact prints are better; another contends that optical (Super-8 to Super-8) are better. What do you say?

A Reliable test data pertaining to the various methods you mention are not readily available. Isolated tests are not necessarily meaningful because the test films, printing machines, lenses, and adjustments are subject to deviations from true state-of-the-art.

Perhaps the most significant indicator of the best method of obtaining excellent quality in Super-8 prints is the fact that the overwhelming majority of professional laboratories throughout the world make continuous reduction prints in Super 8 from 16mm negatives derived from either 16mm reversal originals or 35mm original negatives.

You should compare the quality obtained by your preferred way of shooting and printing with the quality of the same test subject obtained by other established techniques. In any event, shooting in single-strand Super-8 is undesirable for professional purposes because the only raw stocks available are not designed for reproduction. ■

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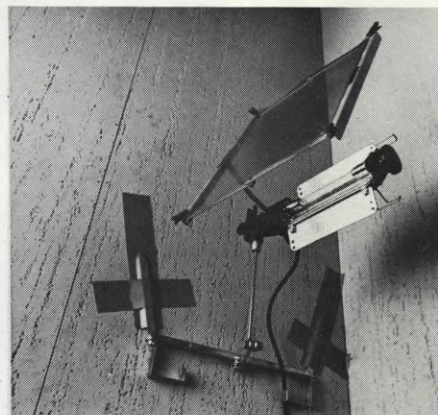


Locks atop doors, open or closed: flags control light precisely.

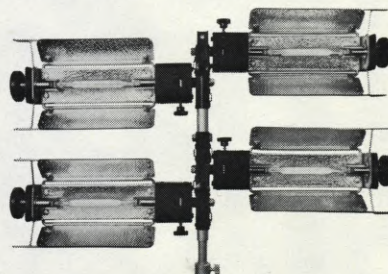
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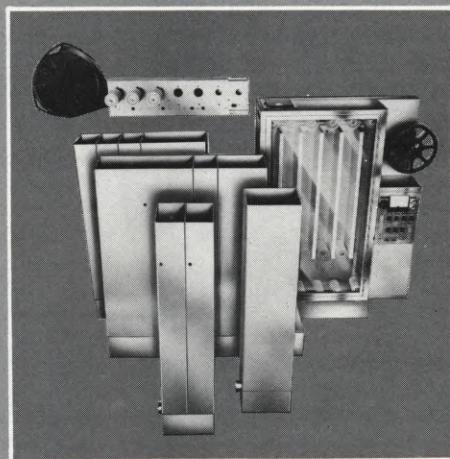
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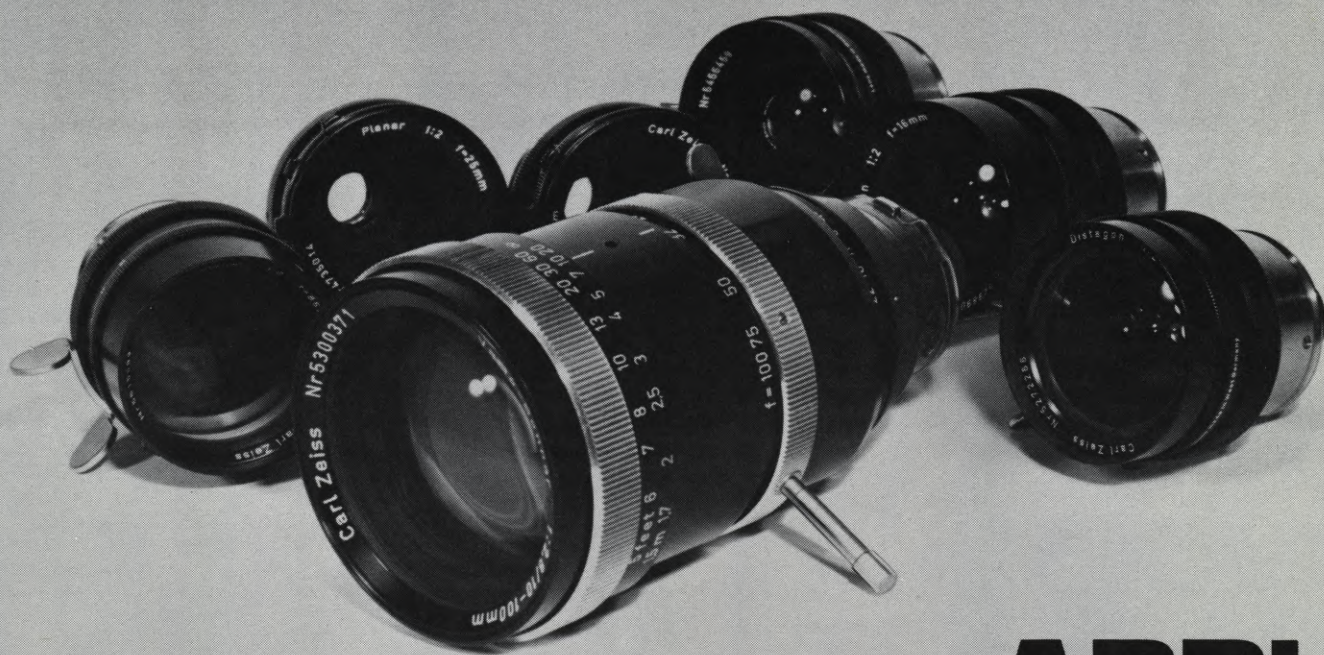
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CINEMA WORKSHOP



By ANTON WILSON

FLASHING

"Flashing" is a simple process of re-exposing the film to a specific amount of white light to reduce contrast and at the same time bring out details in the shadow areas. As a result, flashed EF stock exhibits almost the same contrast characteristics as ECO, allowing the two emulsions to be intercut with almost perfect color blend.

The basic principle of flashing is very easy to comprehend after a look at FIGURE 1. Across the top, each vertical line represents one 'F' stop. Below that, row I expresses the same thing in terms of light level. This is very basic; each 'F' stop represents twice as much light as the previous one. Row II defines the approximate exposure range of a reversal film stock, say EFB, as 6 stops or a light ratio of 64:1.

Row III represents a hypothetical scene composed of objects, A through G. You will notice that each object "happens" to reflect twice as much light, or one stop more than the previous object. This is fortunate, as it makes our discussion a little easier. The numbers above the letters represent the lighting ratio as in row I. However, it will be easier to regard these numbers as "units" of light. Therefore, in the scene, object A reflects 1 "unit" of light; object B reflects 2 "units" of light; C reflects 4 "units"; D reflects 8 "units", etc.

By comparing rows II and III, it is apparent that the scene was photographed one stop underexposed. Had the cameraman opened up one stop on his lens or used a film of double the ASA the effect would be that of row IV. Pushing the film one stop would also have approximately this effect. Because raising the exposure one stop doubles the exposure across the board, object A doubles from 1 unit of light to 2 units, B from 2 to 4 units, etc. From row III to IV there is basically no change in contrast or exposure range. Moreover, there is no change in relative exposure between objects.

Now to "flashing". Row V represents another scene, but now with 8 elements A through H. Comparing rows V and II it becomes obvious that the luminance ratio of the scene exceeds that of the

film by one stop. This is not a problem of underexposure; if row V were pushed one stop, object H would "burn out" and be lost. Flashing is the answer.

Row VI represents the scene as exposed in row V, but after flashing. The flashing is done by exposing the film to a small amount of white light. In the case of row VI, the film was re-exposed to one "unit" of light, or the amount of light being reflected by object A. The cameraman could actually do this himself. The film is rewound and reloaded in the camera. The camera is pointed at a white piece of paper illuminated by a light of the proper color temperature. We want to accomplish approximately a 10% flash, or flash with the same amount of light as object A. From row V, it can be seen that A is 3½ stops down from the center of exposure or middle gray (point m).

Therefore, the cameraman would take a reflected meter reading from the white piece of paper and set the lens aperture 3½ stops down from the reflected reading. This will expose the

film to one "unit" of light. Row VI tells the whole story. After re-exposure to white light, object A records an exposure of the original 1 unit plus the 1 unit of white light for a total of 2 units; B jumps 2+1 to 3; C goes to 5 from 4, etc.

Thus object A moves up a whole stop. If the film were processed as in row V without flashing, object A would not have registered at all, but as pitch black. Object B moves up about 2/3 stop; object D only about 1/8 stop; and for all intents and purposes, objects E, F, G and H remain unchanged. Flashing compresses the low end of the film or reduces contrast for the higher densities. It is also evident how flashing brings out shadow details, yet has no effect on the middle or upper exposure areas. Since flesh tones are usually ½ to 1 stop above center (about the same as object E), flashing should have no effect on skin tones.

The next step is to take a look at the practical aspects of flashing; when to flash, how much and matching EF to ECO.

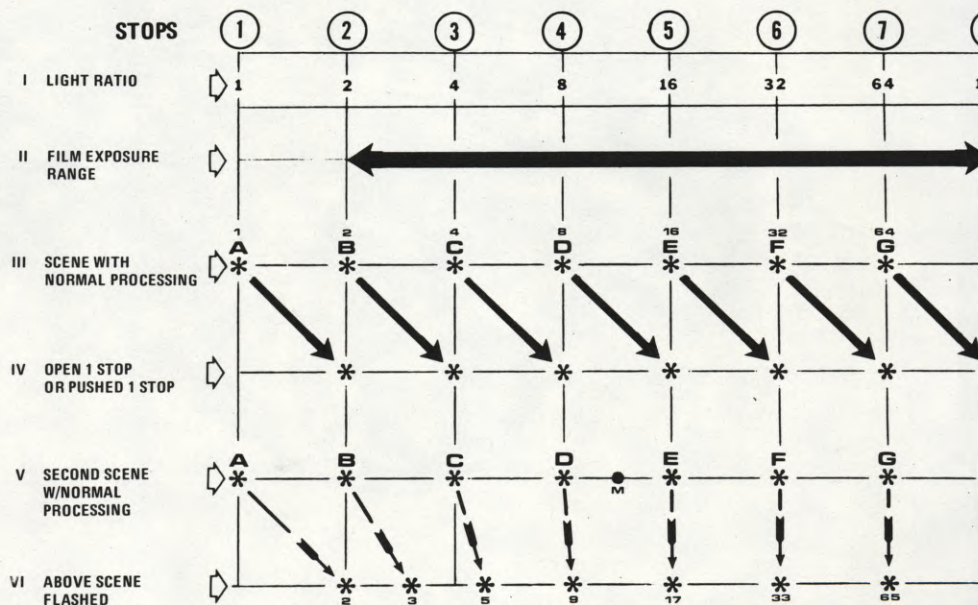


FIGURE 1

Troubled by out-of-focus pictures?

Troubled by emulsion

pile-up in your camera gate?

Troubled by distracting camera

noise when shooting subjects who should not be distracted from what they are doing?

Troubled by cameras that are always in need of repair and adjustment?

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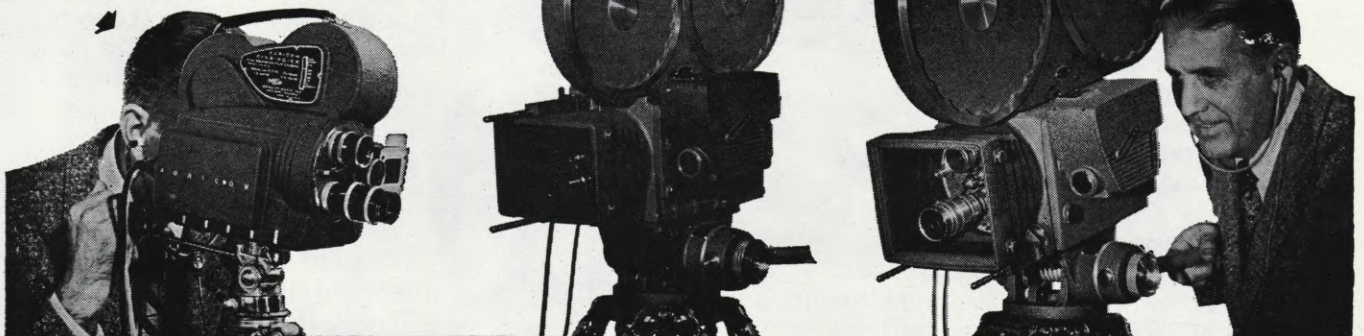


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C10x12



C6x14

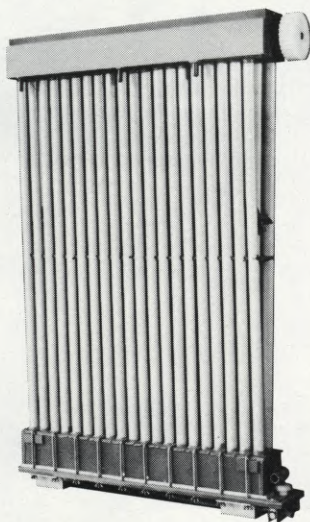
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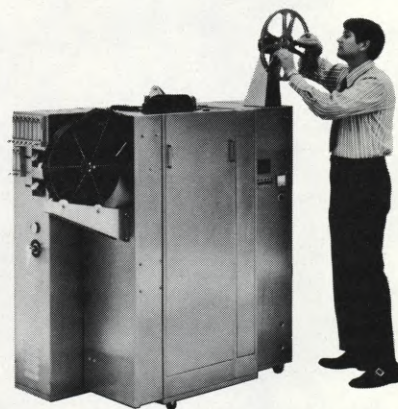
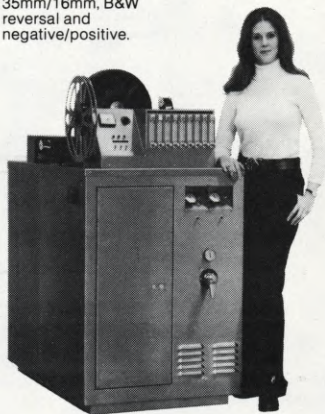
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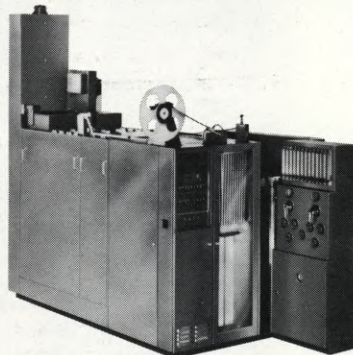


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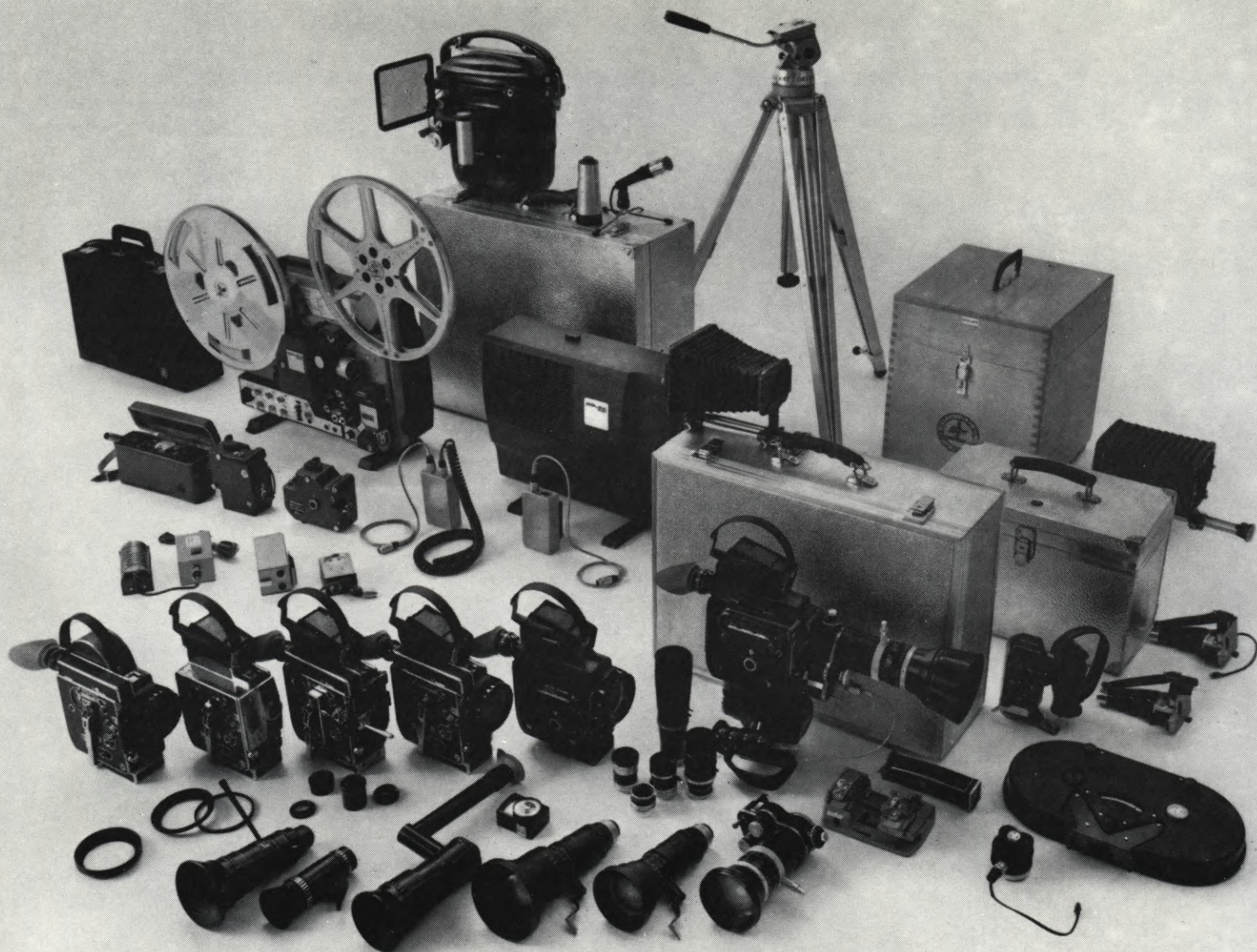
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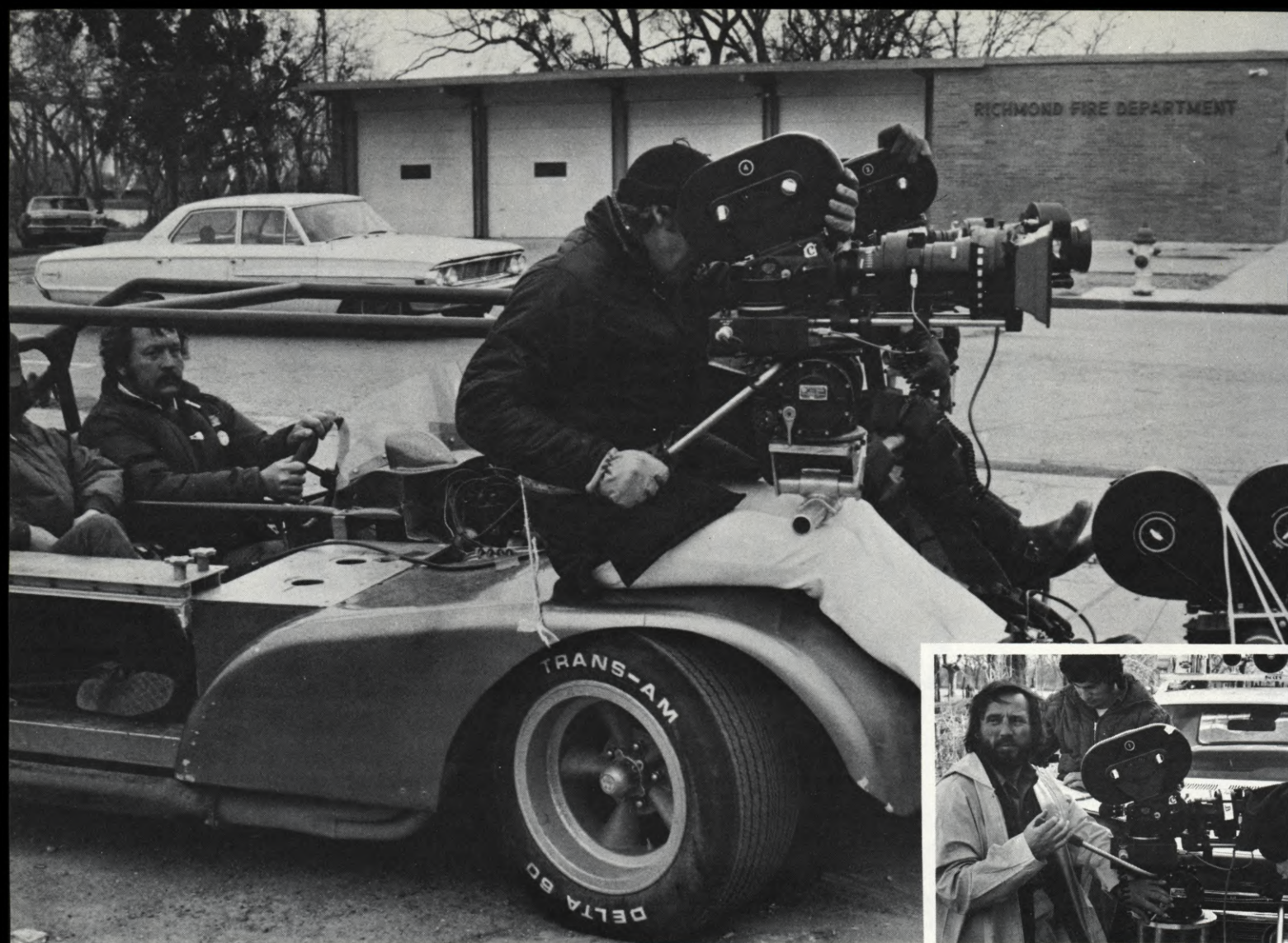
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Operator Jack Richards (forefront) and Director of Photography, Vilmos Zsigmond behind the two fender-mounted Arri 35 2C's, prepare for a wild-run sequence in Universal's "The Sugarland Express."



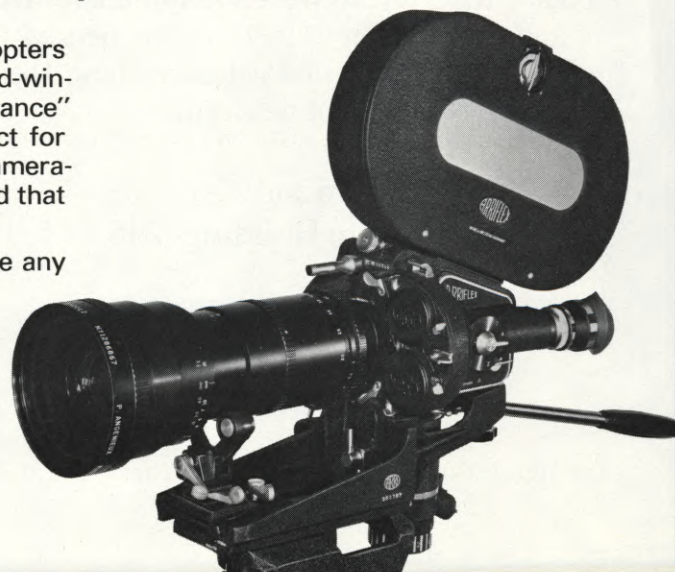
Zsigmond checks out the Arri 35 2C mounted on platform extending from front of police car.

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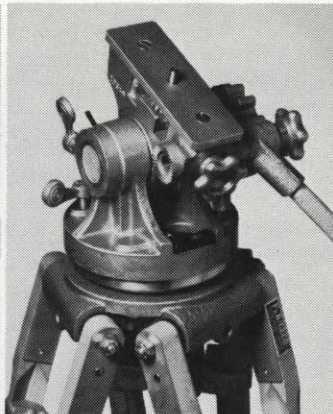
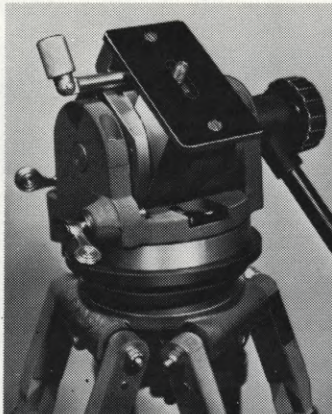
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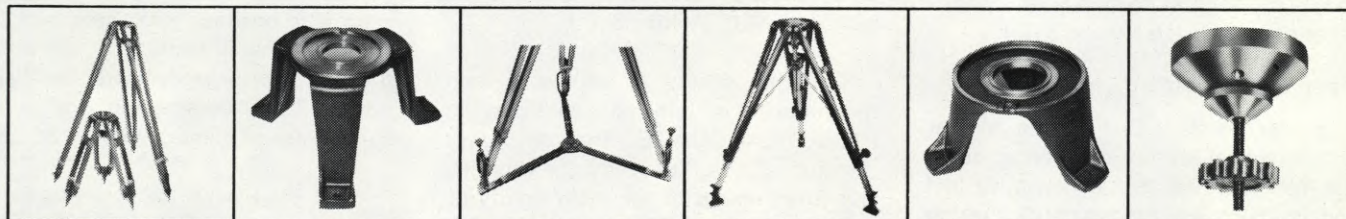
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ABOUT AND BY DIRECTORS

One of the best studies of a director, taping his words as he answers the probing questions of a perceptive interrogator, is **KAZAN ON KAZAN** by Michel Ciment, French film critic and historian. Patiently and skillfully, he leads Kazan through his evolution in the theater, politics and film, letting the director's articulately stated views and opinions come forth in the finely nuanced and candid expression of a sensitive complex and concerned artist. (Viking \$7.50/3.50)

Ciment also prefaces with remarkable insight **WORKING WITH KAZAN**, in which some 30 of the director's collaborators tellingly describe the rewarding nature of their professional and personal relationship, his creative influence on their work, his ability to communicate, their deep satisfaction with his inspiring guidance. Writers (Arthur Miller, Tennessee Williams, Budd Schulberg), cameramen (Boris Kaufman, Robert Surtees), actors (Fredric March, Marlon Brando, Warren Beatty), producer Sam Spiegel and editor Dede Allen among others pay homage in this moving document. (Wesleyan U. Press \$3.)

In an updated edition of his excellent study, **VISCONTI**, Geoffrey Nowell-Smith examines the career and the films of the Italian director, and the progress that marked his style and approach from *Sandra to Death in Venice*. (Viking \$6.95/3.25)

Director William A. Wellman's autobiography **A SHORT TIME FOR INSANITY**, an unusual and gripping document, evokes significant episodes of a dramatic life where physical pain and mental anguish were eventually overcome by rugged individualism and a sense of humor. (Hawthorn \$10.)

REPORTS FROM NEAR & FAR

Ernest Betts, a British film scholar with practical studio experience, offers the film business an authoritative and concise book on his country's motion picture industry from its inception through 1972. This critical survey draws a perceptive balance sheet of the moneymen and filmmakers who ran the show, the movies they made, and the problems of an industry whose ambitions often overshot economic realities. An informative, knowledgeable study, appropriately illustrated. (Pitman \$14.95)

Eric Reade's pictorial history, **AUSTRALIAN SILENT FILMS**, covers the 1896-1929 period of down-under filmmaking. Its creative achievements and

THE BOOKSHELF

By **GEORGE L. GEORGE**

technical innovations reveal a remarkably active production, until overseas competition, distribution and financing difficulties and the advent of sound forced a drastic cut-back. (Acropolis \$12.50)

A delightful evocation of the screen's overblown view of reality, **SIXTY YEARS OF VAMPS AND CAMPS** by Richard Hudson documents a persistent trend in movies whose early innocent naughtiness brings a smile and a chuckle in our more sophisticated and less romantically inclined times. (Drake \$12.75)

INTELLECTUAL STIMULI

The American avant-garde film, its contribution to and place in the artistic development of cinema in the U.S. is discussed by P. Adams Sitney in **VISIONARY FILM**. This definitive work by a highly knowledgeable film critic and scholar offers a broad, rational study of avant-garde's various styles, Dadaist and Surrealist forerunners, and the rich new tradition of filmmaking it brings to our esthetic consciousness. (Oxford U. Press \$13.95)

Contrary to the widely held view that the director is the film's synthesizing creative force called "auteur", Richard Corliss argues in **TALKING PICTURES** that the screenwriter deserves this credit. His thesis is well researched and persuasively presented, but so long as only a few directors have the right to "final cut," the producer's influence is unfortunately the main one to be reckoned with. (Viking \$15.)

Christian Metz, a leading French theoretician of cinema, considers in **FILM LANGUAGE** the medium's "semiotics", i.e. "to study the ordering and functionings of the main signifying units used in the filmic message." It's admittedly rough reading, but students of cinematic theory will be well rewarded by this fundamental work, already translated into five languages. (Oxford U. Press \$10.95)

To popularize the study of film esthetics, Gerald Mast and Marshall Cohen have collected in **FILM THEORY AND CRITICISM** texts by eminent film scholars and artists on the basic meaning of their craft. From Eisenstein to Pauline Kael and from Bela Balasz to Siegfried Kracauer, the book offers a

rich source of stimulating thoughts. (Oxford U. Press \$4.95)

The uniqueness of the film medium is aptly dissected into its component aspects in Lincoln F. Johnson's **FILM: SPACE, TIME, LIGHT, AND SOUND**. His theoretical assumptions blend easily with specific examples in a practical approach that stimulates curiosity and understanding. (Hold \$12.95/9.95)

FOR REFERENCE AND RESEARCH

The third and final volume (P thru Z) of Walt Lee's **REFERENCE GUIDE TO FANTASTIC FILMS** concludes a masterful compilation of over 20,000 movies, listed alphabetically in neatly defined categories, with basic production facts, cast-&-credits, and other useful data. This encyclopedic work documents thoroughly a large and popular genre of screen entertainment. (Chelsea-Lee Books, Box 66273, Los Angeles, CA 90066, \$29.40 the set)

A useful addition to the reference shelf, **AMERICAN FILM DIRECTORS** is an extensive collection by Stanley Hochman of reviews that probe the films of 65 eminent directors from the silents to the 60's. Lengthy excerpts from nearly 300 critics' writings about some 1,000 films for 74 U.S. and European periodicals enable us to follow with sustained interest the ups and downs of a director's critical standing. (Ungar \$18.50)

The drab reality behind the fantasy facade of pornoflick production—and other forms of entertainment provided by the same operators—is investigated in **BLUE MONEY** by Carolyn See, Lit. D., a well established expert on the redeeming social values of the genre. Taking the pragmatic position that these men "give America what it wants," Dr. See surveys the field with undeniable familiarity, unprejudiced compassion and a welcome sense of humor. (McKay \$6.95)

You need never be at a loss for the proper word with Lincoln Diamant's **BROADCAST COMMUNICATIONS DICTIONARY**. His list of some 2,000 technical, common and slang terms used here and in Great Britain blankets the tv/radio field of production, programming and operations, equipment and engineering, talent and ad agencies, and related areas. (Hastings House \$6.95)

Geduld and Gottesman's **ILLUSTRATED GLOSSARY OF FILM TERMS** is a useful and thorough list of standard movie terms and phrases. (Holt \$3.95)

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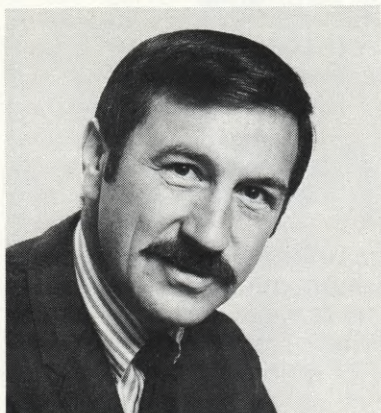
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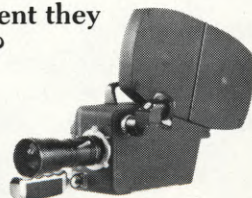


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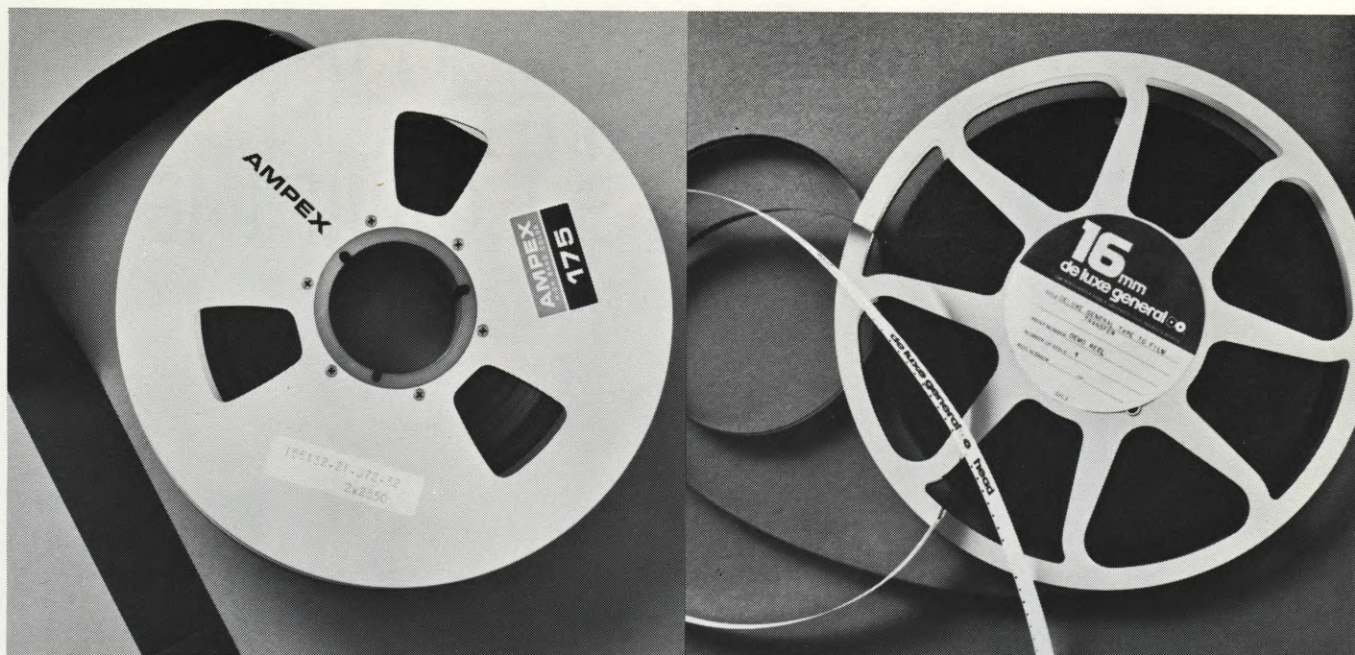
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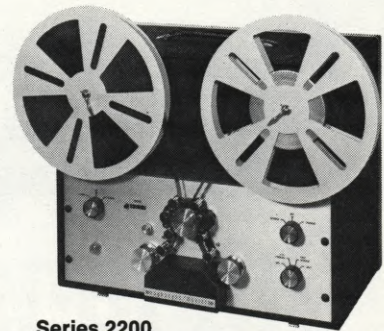
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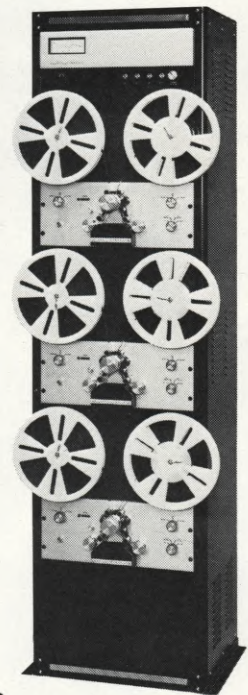
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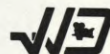
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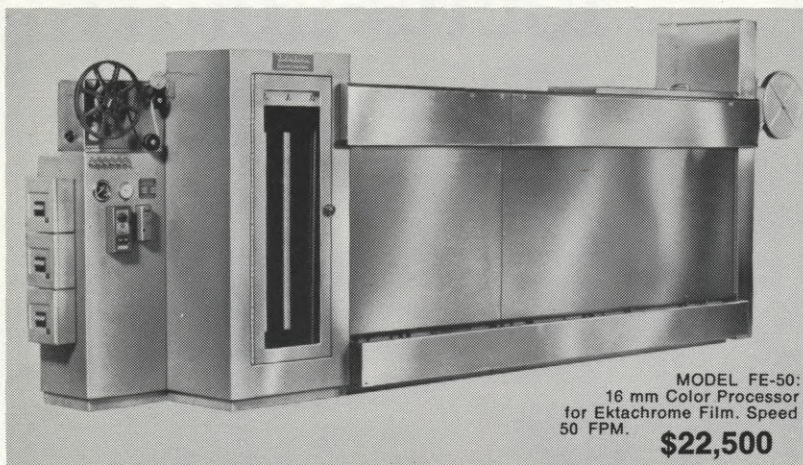
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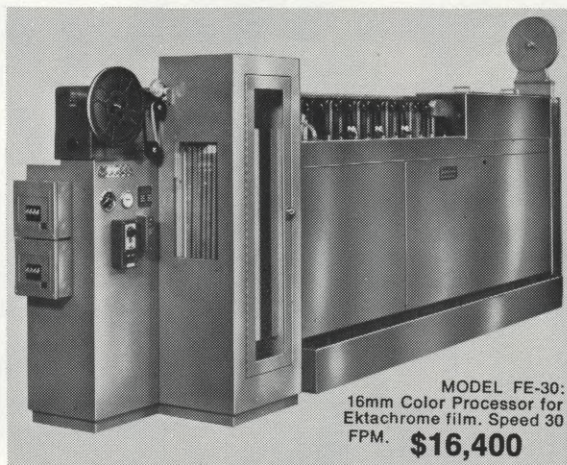
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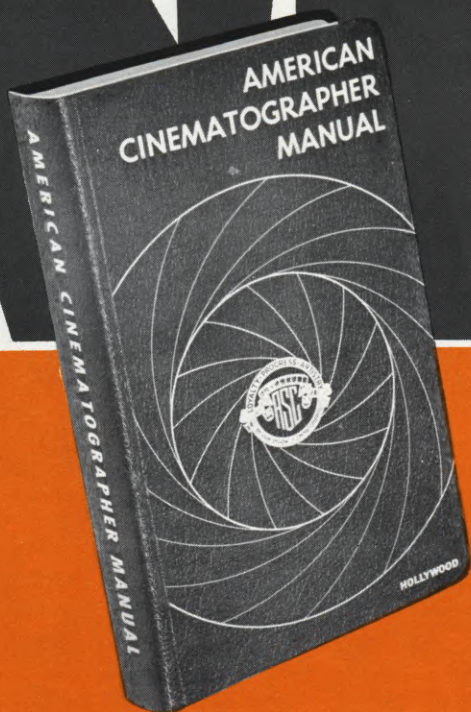
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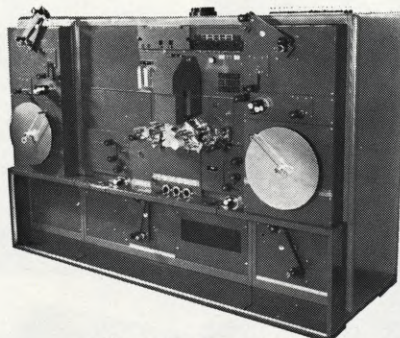
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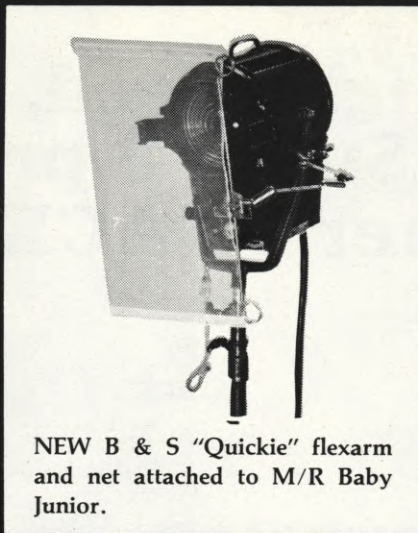
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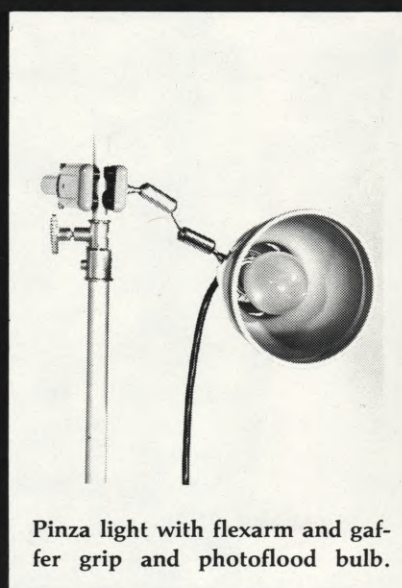
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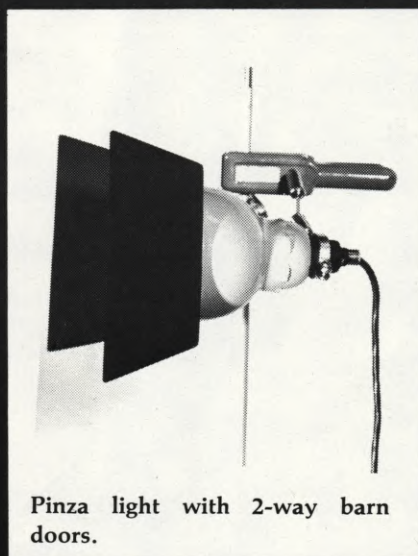
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A young man, his work, and his camera

MARK SHEPARD—Student Filmmaker and Cinematographer □ Speaker on Student Filmmaking in Los Angeles City High Schools and Member of the L.A. Film Teachers Association □ Student at California Institute of the Arts and Valley Junior College □ Producer/Cinematographer of "Mirrors" (a short subject, soon to be released theatrically) and "Spider-web" (a student-made feature length film)



"If I were to choose which is tougher: making a professional film or a student film—there is no doubt in my mind that I would choose the latter. This comes from ten years' personal experience... from my Brownie to the Beaulieu. What can be more ulcer-producing than having no backing, no huge crew, no budget to speak of, time limitations, deadlines to meet, no sets, very little equipment, and dreams of an epic that might never see its way out of the can for lack of just about everything.

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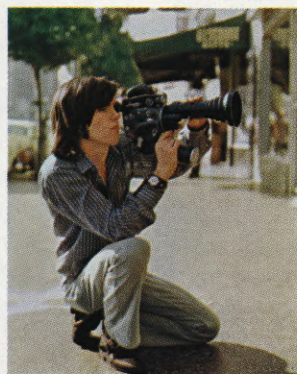


and it gives you the greatest results the first time around. This (and the fact that it is small and compact) meets the most important needs of the student filmmaker— who has one eye on a slim budget while the other is planning a shot.

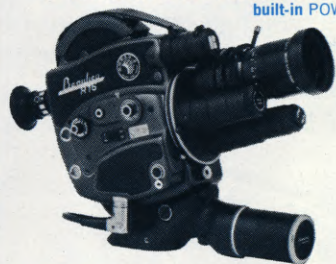
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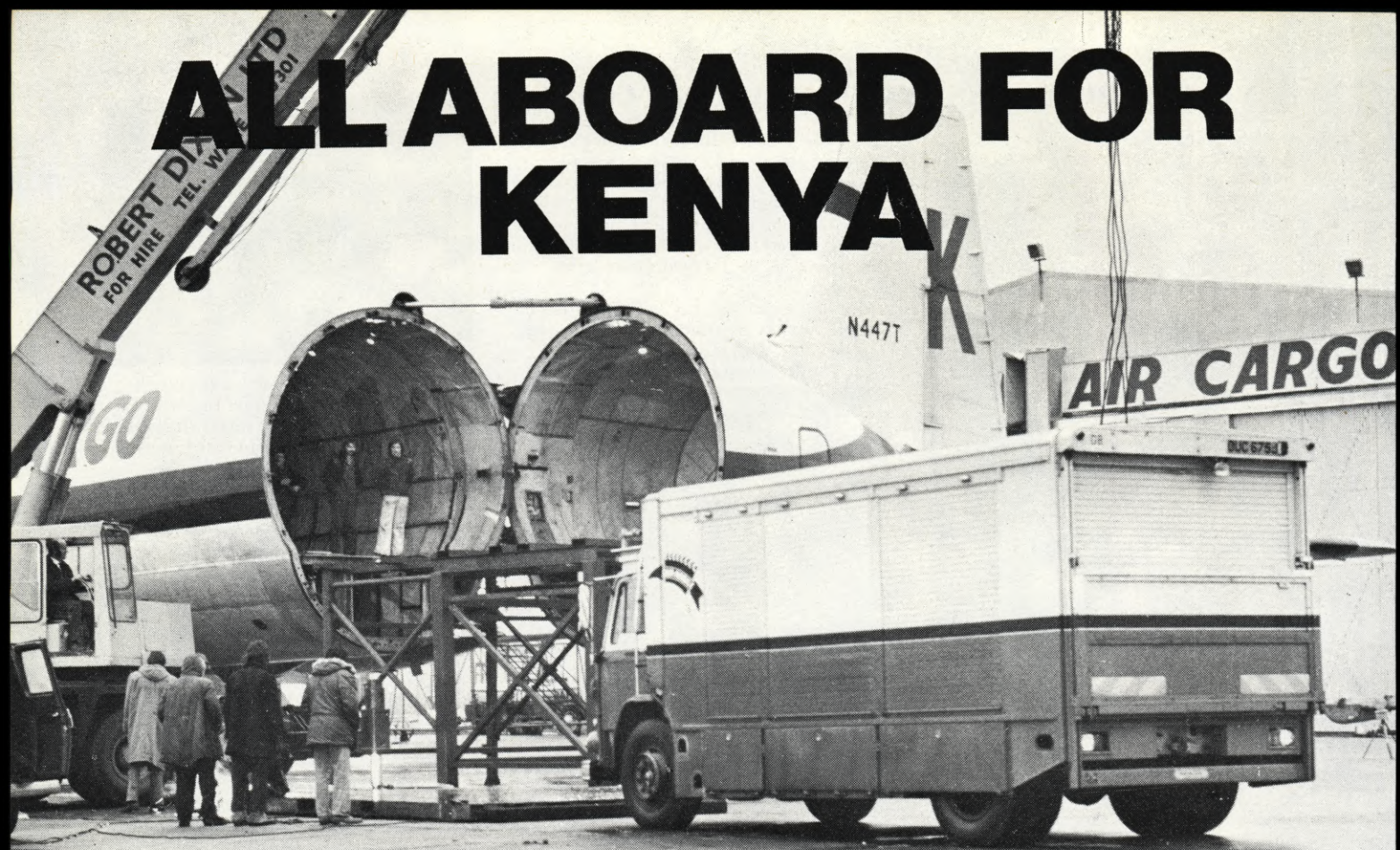


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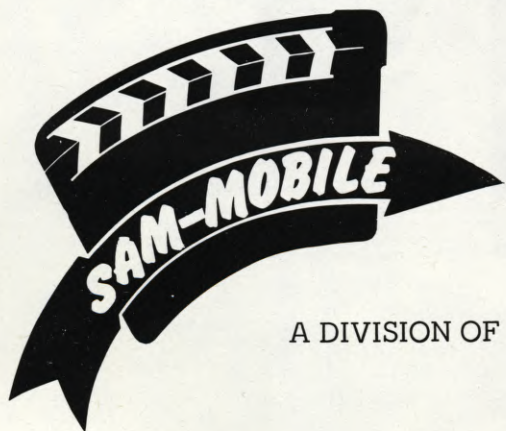
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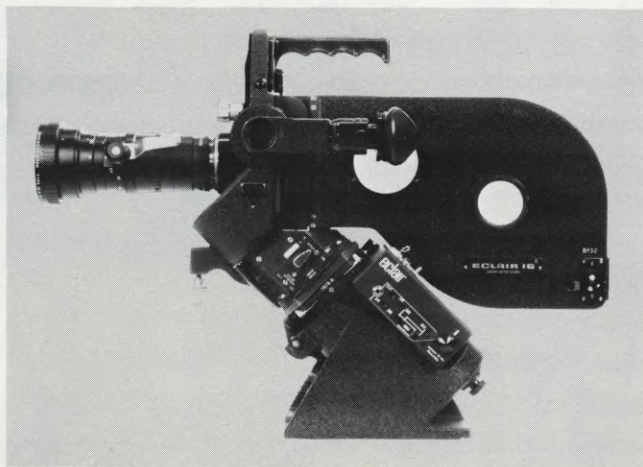


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FILM-MAKING IN THE SOVIET UNION

Editor travels to the USSR to observe Russian motion picture methods and equipment and report on them to readers of American Cinematographer

By HERB A. LIGHTMAN

MOSCOW

En route to the Soviet Union, as invited guest of the Association of Film Makers of the USSR, I review in my mind what I know of the history of the Russian cinema.

Up until the Revolution of 1917, the Russian cinema, destined to become one of the greatest in the world, was technically primitive and sparse in output. Before the first Russian studio was built (in 1907), the only film activity that prevailed involved French cameramen sent in by Gaumont, Lumière and Pathé to make a film or two and then leave. After the first studio was built, others (all small) were constructed by the Russians, French and Germans, but these hardly constituted a base for a true film industry. At the time of the Revolution, there existed, in all the vastness of Russia, only 1,045 cinema

theatres, with a total seating capacity of 364,000.

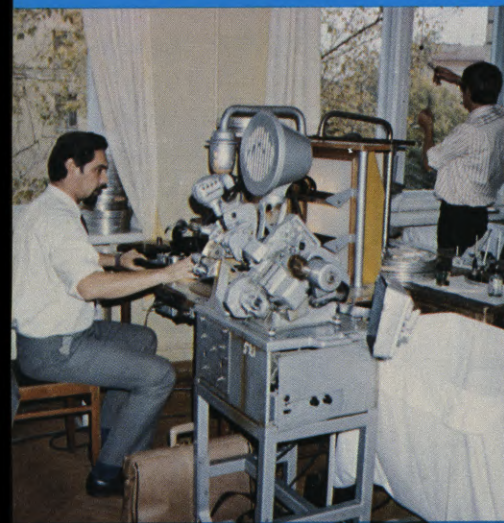
After the Revolution, the Soviet Union fell heir to a film industry that existed in name only. The Europeans and White Russians had left the country, taking with them whatever stocks of film and camera equipment that had existed. Feature production, which had begun in 1914 on a very small scale and which had concentrated mainly on the filming of stage plays, was at a standstill. The most ambitious feature produced until then had been an adaptation of Tolstoi's *FATHER SERGIUS* (1917), directed by Feodor Protazanov and filmed mainly on location in the elegant clubs and palaces of the time. Upon completion, it was promptly banned by the czarist government.

The Revolution turned out to be, not only political, but cultural and artistic,

as well. Startling new forms were tried out in music and stage plays and this surge of innovation soon spread to the cinema. In August of 1919, the film industry was nationalized by the Soviet government and came under control of the People's Commissariat of Propaganda and Education. Even though the studios were a shambles and there were only meager supplies of film stock available, motion pictures were given top priority when Lenin declared: "Of all the arts, the cinema is the most important for us."

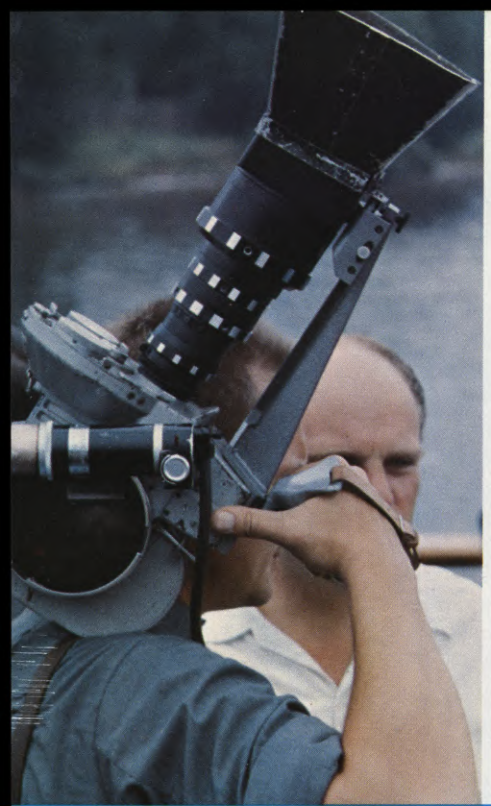
During the period of civil war and counter-revolution that prevailed after the initial Bolshevik takeover, film facilities were devoted almost totally to the making of documentaries which recorded the progress of the Red armies and the changes being made by the new government. Most of this film was

(LEFT) Film Editor at work in Mosfilm Studios cutting room. In foreground is Soviet-built editing machine similar to classic vertical Moviola. (CENTER) American Cinematographer Editor Herb Lightman lunches in private dining room at Mosfilm Studios with Mosfilm Chief Engineer and Chairman of the Cinetechnology Section of the Association of Film Makers of the USSR Boris N. Konoplyov, Mosfilm Deputy Technical Director and Head of Engineering Research Dr. Michael Z. Wysotsky and Mosfilm Deputy Director General Nickolai A. Ivanov. (RIGHT) Section of the Mosfilm Studios "trophy room", displaying a few of the many awards its pictures have received, including the Academy "Oscar" awarded for "WAR AND PEACE".

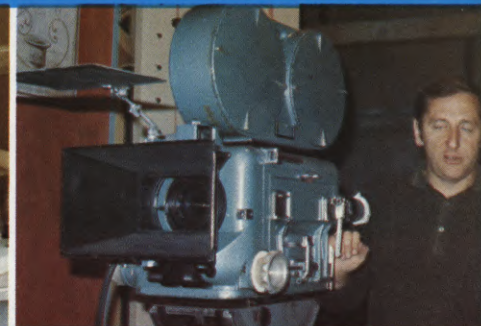
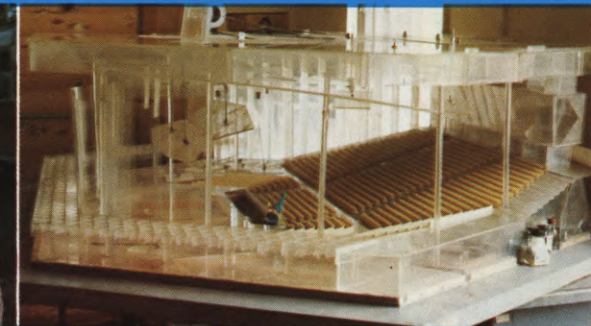


(LEFT) One of the older cinema palaces in Moscow. (CENTER) Soviet-built mobile silent generator. (RIGHT) Technician operating 70mm optical printer, Type 23 FTO-1. This machine was designed for the "squeezed" 35mm anamorphic print-down of original 70mm materials. This is done not only for release printing in certain cases, but to produce 35mm work print for easier editing.



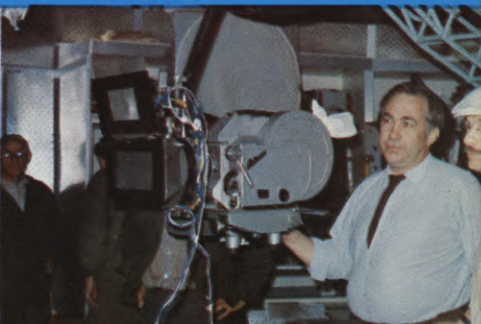


(LEFT) Newsreel cameraman, using hand-held camera with zoom lens. (CENTER) "Checking the gate" is the same in all languages. The camera shown is the non-reflex 70mm camera, Type 70 KCK, which is capable of exposing film at frame rates up to 90 fps. Note the geared head. Rear handle operates pan; side handle operates tilt. (RIGHT) Newsreel cameraman operating news camera mounted on tripod with telephoto lens.

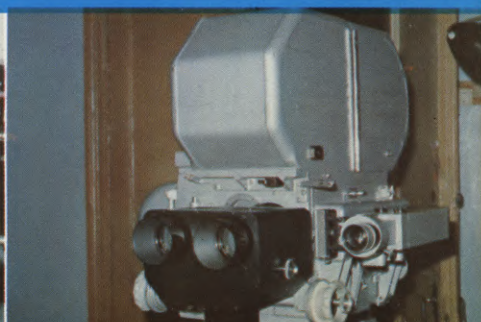
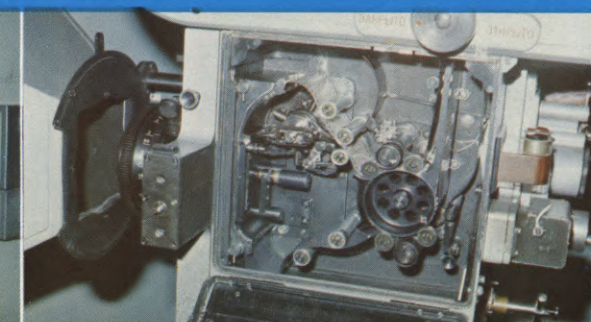
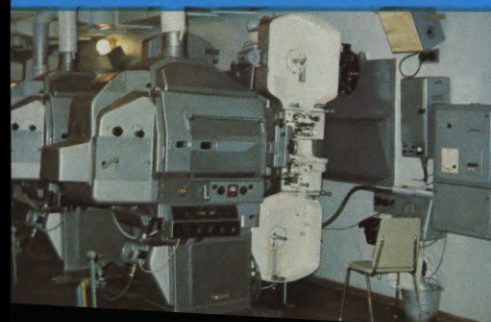


(LEFT) Valentina Oushaguina, Editor of Technika Kino Televidenia Journal (Russian counterpart of the American SMPTE Journal), with Dr. Naham Bernstein of the Cinema and Photo Research Institute (NIKFI). (CENTER) AT NIKFI, model of an auditorium for testing acoustics prior to building. (RIGHT) 70mm mirror-reflex studio camera.

(LEFT) Hand-holdable "1 KCWP" 70mm mirror-reflex camera, which is often used for 3-D filming, exposing two adjacent images on each 70mm frame. It is a 12-volt-powered camera with 160' shutter, mounting a 200' magazine and weighing 16 pounds. (CENTER and RIGHT) Crew working on the science-fiction feature "SOLARIS".



(LEFT) Projection room in Mosfilm Studios' 1,000-seat dubbing/preview theatre. Shown are Type KN-15 35mm/70mm projectors. (CENTER) Camera door open, showing the 10-hole "push-down" movement of the Voris 70 camera at NIKFI. (RIGHT) 70mm K-70 camera for 3-D cinematography. Like the 70 CK camera, on which it is based, it exposes two images side-by-side on each 70mm frame.





viewed such films repeatedly, then took prints apart physically and re-edited them in different ways to see how various juxtapositions of the scenes changed the meaning and impact of the original material.

In his comprehensive history of the early cinema, *The Liveliest Art*, noted film historian-critic-cinema professor Arthur Knight writes: *Perhaps the most famous of Kuleshov's experiments—also recorded by Pudovkin—was one involving an old film with the actor Mozhukhin. From it Kuleshov obtained a close-up in which Mozhukhin appeared perfectly expressionless. This same shot he inserted at various points into another film—once in juxtaposition to a plate of soup, once next to a child playing contentedly with a teddy bear, and again next to a shot of an old woman lying dead in her coffin. Audiences shown the experimental reel praised Mozhukhin's performance—his look of hunger at the bowl of soup, his delight on seeing the child, his grief over the dead woman. For Kuleshov, however, it was a conclusive demonstration of his theory—based on what Griffith had already achieved instinctively—that it is not merely the image alone, but the juxtaposition of images that creates the emotional tone of a sequence.*

Learning well from all of this experimental analysis, Kuleshov became a master of *montage* (a term which goes well beyond the French word for simple editing to connote a highly creative assemblage of filmic bits and pieces to produce an intense emotional impact upon the audience). His complete control of this technique is evident in *BY THE LAW*, the stunning film he made in 1926 based on a story by Jack London.

Pudovkin, a disciple of Kuleshov, took what he had learned from his mentor and developed it even further, using *montage* not only to advance the story, but also to reveal character in the most precise detail, thus obviating the necessity for many of the titles which

Moscow headquarters of the Association of Film Makers of the USSR, the organization of Soviet creative cinema personnel which invited the American Cinematographer editor to visit the Soviet Union. Its vast modern facilities provide excellent space for large meetings of its many members and discussion groups.

edited by a young film buff named Dziga Vertov, who cut it first as newsreels and finally edited the footage into a three-hour, 13-reel documentary called *THE ANNIVERSARY OF THE OCTOBER REVOLUTION*. This film is commonly regarded as the first Soviet feature.

Encouraged by the success of this venture, Vertov quite dogmatically declared that the only significant role of film in the new society was to present factual matter to the people of the nation. In 1922, to back up this theory, he inaugurated a weekly newsreel called *KINO-PRAVDA (FILM-TRUTH)*, which not only presented facts, but commentary to interpret those facts.

There were those who disagreed with Vertov's narrow appraisal of the film form, regarding it as a medium of potentially far wider scope. With the all-out approval of the government,

these more imaginative individuals began to experiment with film as a storytelling medium, tackling original screenplays with modern themes, as well as the classics, usually with actors of the Moscow Art Theatre. Some of their efforts were impressionistic, some outright slapstick; they tried everything.

Among the more adventurous of these film-makers was Lev Kuleshov. He had made films before the Revolution, but was now inspired to seek out new emotional and psychological depths in the potential of cinema. Assuming correctly that the key to the impact of film was the juxtaposition of one image in relation to another (in other words, the editing process), he and his colleagues—which included V.I. Pudovkin—began an in-depth analysis of successful existing films, most notably D.W. Griffith's *INTOLERANCE*. Pudovkin recounts in his classic text, *Film Technique*, how they

Scenes from the stunning Soviet film productions of Shakespeare's "HAMLET" (LEFT) and "KING LEAR" (RIGHT), considered by many critics to be the best filmizations of the Bard's works ever produced. Both films were made at LENFILM Studios in Leningrad, utilizing the same director/cameraman team: Director Grigory Kozintzev and Director of Photography Jonas Gritzius. Soviet production features great variety, including the classics.



less talented directors of silent film relied upon to delineate character. Pudovkin's great skill with this consummately visual cinematic tool is most strikingly demonstrated in his classic films, *MOTHER* and *STORM OVER ASIA*. In 1926 he collaborated with Pavlov on a technical film called *MECHANICS OF THE BRAIN* and it is obvious that from this experience he learned even more about conveying human emotion on film.

Contemporary with Pudovkin was the legendary Sergei Eisenstein, widely considered to be the greatest of all Russian film directors. A former student of architecture and engineering, Eisenstein began his career as a stage designer, then became a stage director, ultimately abandoning the stage for the more plastic medium of film. In his first feature, *STRIKE* (1924), he demonstrated his unique ability to capture on film the tremendous sweep and impact of revolutionary movements.

Greatly impressed by *STRIKE*, the Soviet government commissioned Eisenstein to make a film about the abortive revolution of 1905. Working from factual data, he constructed his own original screenplay and began shooting in Leningrad. He then went to Odessa to shoot what was originally intended to be a brief sequence about the mutiny of sailors aboard the Battleship *Potemkin*. When Eisenstein caught sight of the vast stone stairway leading from the city center down to the waterfront—the stairway on which Cossacks had mercilessly slaughtered hundreds of people in sympathy with the mutinous sailors—he decided to restage the carnage of this act and use it as the focal point of his screen story.

The rest, as they say, is history. The "Odessa steps" sequence from Eisenstein's *POTEMKIN* became a classic in itself—a brilliant example of creative *montage* precisely designed to produce a stunning impact upon the audience. I can remember that when I was a film student at the university we used to run this sequence over and over again, learning something new about film construction from each viewing. To this day, students of the cinema in film schools all over the world are doing the very same thing.

Eisenstein refined mechanical techniques to extend the art of the cinema. He contended that when two images were joined one to the other in succession, what emerged was a totally unique third entity, bearing little relationship to either of the scenes as viewed separately. He was also the first to tamper with the real-time aspect of screen action to create a psychological effect.

The Odessa steps sequence is a brilliant example of one kind of time warp, in which, by joining separate cuts of a multitude of individual details, Eisenstein extended the screen visualization of the action far beyond the real-time interval which the actual situation must have consumed.

Eisenstein went on to make *TEN DAYS THAT SHOOK THE WORLD, OLD AND NEW* (1929), *ALEXANDER NEVSKY* (1938) and *IVAN THE TERRIBLE—PART I* (1944) and *PART II* (1946). *NEVSKY* featured a sequence almost as famous as the Odessa steps *tour de force*—the sequence in which mounted medieval knights clash in furious hand-to-hand combat on a frozen lake. Legend has it that several of the heavily-armored participants in the sequence perished by drowning when their horses crashed through the ice.

In 1930 Eisenstein came to Hollywood to work for Paramount Pictures, but all of the projects which he suggested were turned down. Returning to Russia, he made *BEZHIN MEADOW*, but because it clashed with bureaucratic policies of the time, the film was destroyed. In between his Paramount stint and his return to Russia, Eisenstein went to Mexico to film *QUE VIVA MEXICO* with funds raised by Upton

Sinclair, but his relationship with Sinclair became strained and the film was never completed.

Back in Russia, his attempts to make more films were frustrated by bureaucratic wrangling and he spent his remaining years (until his death in 1948) teaching, lecturing and directing plays and operas. Though his total film output, in terms of numbers, was amazingly sparse, Eisenstein has influenced every successful film-maker who has followed him and will, I'm sure, continue to do so.

Completing the towering triumvirate of great Russian *cinéastes*—along with Eisenstein and Pudovkin—is the Ukrainian film master Alexander Dovzhenko. Though his works are less well known internationally than those of his two colleagues, Dovzhenko was equally an innovator in terms of film form. Known as a "poet" of the cinema, he managed to combine the rawness of documentary realism with a deeply humanistic touch, using allegory and symbolism in strikingly effective ways. Among his best-known works in world cinema are: *ARSENAL*, *EARTH*, *SHORS*, *FRONTIER* and *LIFE IN BLOOM*.

In recent years, the films which have scored the greatest impact upon America

Continued on Page 948

The legendary Sergei Eisenstein, master Russian film director (LEFT), shown on the set while directing "BEZHIN MEADOW". This film was scrapped because it did not conform to bureaucratic policies of the time, but it has since been reconstructed in a curiously effective form, which involves scenes made from still frames of trims arranged consecutively to tell the entire story.



THE SOVIET MOTION PICTURE INDUSTRY

A vast complex of facilities and skilled technicians working together to create the most popular form of entertainment for the Russian people

By V.L. TRUSKO

Head of the Technical Board of the USSR State Cinema Committee
and V.G. KOMAR

Prof. Deputy Director of the State Scientific-Research Cinema Institute (NIKFI)

The Motion Picture Industry in the USSR is an independent branch of multinational culture and economy which combines in a single complex the processes of film production, release printing, film distribution and exhibition, scientific research, designing and manufacture of motion picture equipment.

Thirty-nine motion picture studios in all national republics release annually about 260 feature films, over 2300 scientific-popular, documentary, and educational films and newsreels.

Film presentation is accomplished via 156,000 projection units scattered all over the nation's territory.

The requirements of the cinema network are satisfied by seven release printing laboratories, the annual capacity of which is estimated at over one billion metres of release prints of various formats in many national languages.

Cinema in the USSR enjoys wide popularity and love of the people. In 1972 the figures of attendance exceeded 4.5 billion persons, which means 18.5 annual attendance per person.



(ABOVE) Scenes from Mosfilm Studios' "ON THE RUN". (BELOW) Scenes from "WAR AND PEACE".



Such high interest of the Soviet people in cinema is explained, first of all, by their thirst for information, which builds up a person's world outlook, his moral convictions, aesthetic taste, high spiritual and wide technical level of culture. Of no small importance is also the fact that, in cinema, the conditions of perception more closely approximate the natural conditions of human life perception than is produced by other means of information transmission.

Raising of cinema educational role,

stimulation and increase of people's interest in it as a means of satisfying cultural requirements, is the basic task of Soviet cinematography. This task is implemented by a complex of measures directed toward providing higher artistic-aesthetic quality of motion pictures, their stronger emotional effect upon viewers, improvement of technical parameters and conditions of perception upon presentation.

It is quite natural that the process of cinematography development involves a constant urge to bring the theatre condi-



tions of perception nearer to those of human life. This fact called forth the radical qualitative changes that have come in recent years relating to cinematography: transition to colour, improvement of picture and sound quality, widely used large-screen presentation, improvement of viewing conditions at cinema theatres, development of new forms of film shows, general improvement of cinematographic processes based on new technique.

Taking into account that economical and technical advantages of the photographic method predetermine its existence and development as a basic means of image fixation in films during the visible time period, the USSR is carrying out extensive work on further improvement of colour motion picture photographic processes. During recent years the sensitivity of colour negative raw stocks has increased 4-5 times; the chemical-photographic processing has also improved. This allowed for a more rapid changeover to colour. The share of colour pictures in studios production has been raised to 60% and is still intensively increasing. At the same time the production of colour release prints is also growing. In 1972 the printing industry released for distribution 270 million metres of colour prints of various formats and the rate of production is steadily rising now. The production potentialities of imbibition printing factories extend to 50.0 million metres per year.

The growing output of colour films called for technical reconstruction of processing laboratories and printing factories. Extended work has been done on conversion to additive printing of film materials, modernization of printers, etc.

The extensive work on improvement of optics, camera, printing and projection equipment has resulted in higher manufacture and presentation quality of wide-screen anamorphic and 70mm films. This accounts for their attractiveness to the audience. During recent years the admission for every wide-screen film in the USSR has been 15% more than that for a normal-format film and each 70mm show is attracting a 20% bigger audience than an average show of wide-screen or normal 35mm film.

Owing to this, the share of wide-screen anamorphic films has considerably increased in the total production of studios during recent years. In 1972 they made up 74% of the total output volume with the tendency towards further growth. To fit the situation, the cinema network had to undergo qualita-



A scene from the Soviet science-fiction feature "SOLARIS", filmed at Mosfilm Studios in Moscow and utilizing a variety of futuristic sets and special effects techniques. Motion pictures constitute the most popular form of entertainment in the USSR. In 1972 the figures of attendance exceeded 4.5 billion admissions, which breaks down to an 18.5 annual attendance per person.

tive changes. By the beginning of the year 1973 85,000 projection units had been converted to wide-screen anamorphic presentation and the process is still in progress.

Recent years are marked by significant development of 70mm theatres, the number of which has increased from 87 by the end of 1965 to 620 by 1972. Still a greater number of 70mm theatres are supposed to be open in many cultural and administrative centres of the national republics in the oncoming years. Theatre growth has called for further increase in the production of 70mm

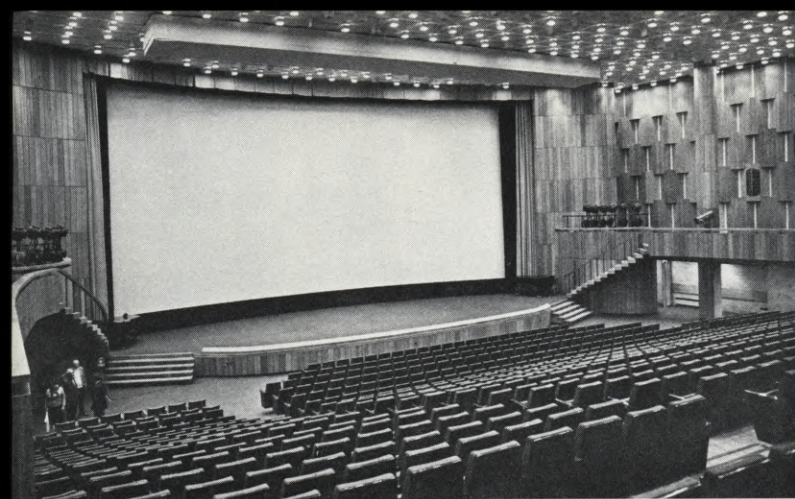
prints that amounted to about 9 million metres in 1972.

To a considerable extent this has been made possible due to optical printing of 35mm wide-screen anamorphic films to 70mm using the technology and equipment developed in the USSR.

Attaching great importance to the problem of artistic and expressive means widening, Soviet specialists have created new systems of stereoscopic and varioscopic multi-image cinematography. The success of the three full-length and two short films produced in the so-called "Stereo-70" system (in which two nor-

Extras massed on a huge set at Mosfilm Studios await the Russian equivalent of "ACTION" to begin filming of a scene. The requirements of the Soviet cinema network are satisfied by seven release printing laboratories, the annual capacity of which is estimated at over one billion meters of release prints of various formats and in many languages.





Two views of the magnificent OKTIABR (OCTOBER) Theatre in Moscow, with its huge curved screen. Unlike most other film-producing nations which have all but phased out 70mm production (due to its high cost), this large film format is on the increase in the Soviet Union. From only 87 theatres in the USSR equipped to screen 70mm in 1965, the number has by now increased to almost 1,000. This has resulted in many features available in 70mm release print form. Some are original 70mm production, while others are 70mm release blow-ups from original 35mm anamorphic photography.

mal 3-by-4 size pictures are placed side by side on a standard 70mm film) and presented with the polarizing-glasses approach, has proved that the newly-developed system is promising for the future. Approximately 2.5 million viewers have seen the 3-D film "THE MYSTERIOUS MONK" in its original 3-D version. On the "SOVPOLIKADR" system, based on utilization of 70mm standard stock, some variscopic multi-image films have been shot, and are successfully running at our 70mm theatres.

The work conducted has shown that stereoscopic and variscopic multi-image types of cinematography offer greater opportunities for creating masterpieces of strong emotional effect and clear new ways for attracting viewers.

Introduction of television and electronic methods in motion picture processes creates the necessary prerequisites for radical changes in shooting technology and techniques, offers greater opportunities for artistic creative work, and permits the raising of technical and economical indices of production. Analysis has shown that most effective for motion picture production are single-camera combined cine and television systems with TV viewfinders and control magnetic video tape recording.

Thus, along with designing multi-camera systems, Soviet specialists have

achieved a certain success in introducing TV technique in film shooting. A cine-television camera provided with a programmed remote lens control, autosync gearless drive, built-in exposure meter and other auxiliaries for ensuring filming, sound recording and communication represents a complex of units required for a present-day shooting site. Work is underway to contrive such complexes for interior and location shooting.

Development of electronics permitted intrusion upon other fields of motion picture engineering. Work is carried through in an effort to develop new sound equipment that will ensure post-synchronization, sound recording, re-recording and reproduction. This equipment operates on the principle of working with full capacity reels, synchronous forward and reverse operation (on higher speed), some memory, automatization, the possibility to erase and put, instead, a new record in the necessary place of a magnetic band.

The survey of works on technical re-equipment of studios would not be complete if we did not say a few words about stages. Having carried through a series of researches, the Soviet specialists started work on reconstruction of studio stages. The main purpose of the work is designing stages provided with all possible facilities for mechanization

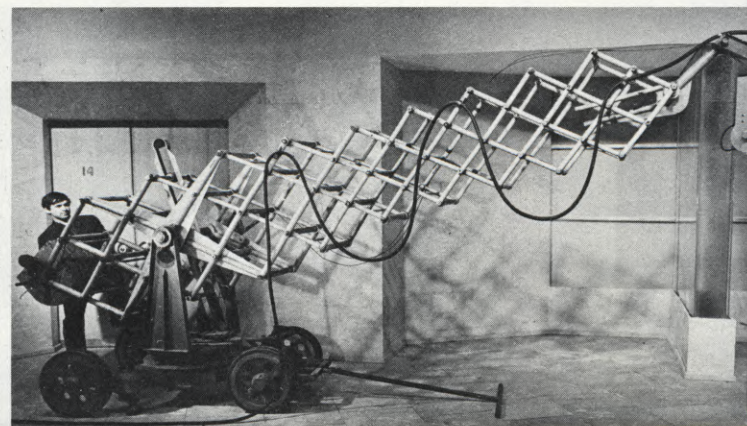
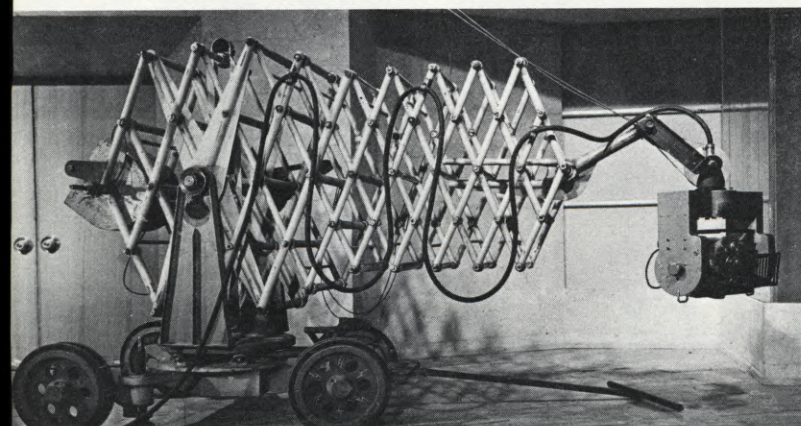
and automatization of set construction, light and shot control. Work has started on the reconstruction of the USSR's largest film production facility—"Mosfilm Studios" and several other national studios.

The country's motion picture theatre network is also undergoing great changes. Along with changing over to new xenon light sources, extensive work is carried out on automatization of film presentation. Considering the fact that in the USSR cities alone there are over 24,000 constantly operating theatres, one can easily understand the importance of the work.

Under the conditions of our country with its vast territory and a great many remote and almost inaccessible regions, narrow-format cinematography is highly significant. At present, there are about 34,000 16mm release projection units in the USSR; the annual output of 16mm release prints amounts to 270 million metres. For the last few years an extensive base has been provided for releasing 8mm colour and black-and-white prints. The annual production of 8mm release prints is estimated at 22 million metres. The work conducted on the improvement of narrow-format cinematography ensures its further development.

Such is the brief information about the USSR motion picture industry. ■

Unique retractable remotely controlled miniature crane used in the Soviet film industry. The boom arm is variable from 1.5 meters to 4.5 meters. New and different equipment is constantly being designed in the studios and by NIKFI, the State Scientific-Research Institute, while extensive work continues on the improvement of optics, camera, printing and projection equipment.



THROUGH RESEARCH, THE RUSSIANS GET THE BEST FROM THEIR OWN RESOURCES

By DAVID SAMUELSON, FBKS, BSC

(EDITOR'S NOTE: The following article, reproduced by permission from the August 1971 issue of TODAY'S CINEMA TECHNOLOGY, was written by David Samuelson, FBKS, BSC, upon his return from the 1971 Moscow Film Festival. Mr. Samuelson is Technical Director of Samuelson Film Service Limited, and because he was himself, for many years, a working cameraman, we feel that his reactions to his Moscow visit, as expressed in the article which follows, will be of interest to AMERICAN CINEMATOPHILERS readers.)

The nation that has an Institute, NIKFI, which spends £2 million a year purely on research, development and the improvement of motion picture and allied equipment may be expected to produce some very impressive results.

The Russians do.

For instance, for the Expo 70 Exhibition in Osaka in 1970 they decided to develop a new format, "Vario 70" which in essence is a 70mm picture of twice the normal height.

This involved the designing and building of three special ten-hole pull-down 70mm cameras, a continuous contact printer, an optical printer which can print from either "Vario 70," normal 70mm or 35mm normal or anamorphic negatives and five special projectors. A prodigious undertaking, and a highly successful one, by any standards.

NIKFI has 23 specialised research laboratories where the work of designing and testing every type of equipment and material used in film production and presentation is carried out including, of course, that of presenting stereo films without glasses.

Of the 18,500 million people in the world who visit a cinema every year, 4,700 million of them do so in the Soviet Union. Thus the concept of reducing production costs by the use of lightweight compact multi-purpose equipment is not a primary aim. When you finally make 1,000 prints off a single feature film, who worries whether the 5K lamp you used took one man or two to lift?

They have a film school in Moscow where 1,000 students complete a five year course which covers every aspect of film making from practical laboratory experience to set design, lighting and directing.

The equipment at the disposal of the students is on a lavish scale. It includes

five Russian-built studio reflex cameras (not dissimilar from a Mitchell BNCR), a powerful microscope film camera for scientific work and a sophisticated computer operated animation rostrum, to name but three items any one of which any of our British film schools would be delighted to possess.

At a time when studios elsewhere in the world languish and struggle for their very existence Mosfilm Studios is, by today's standards, unique.

Last year they produced (literally from script to release prints) seven 70mm films, 20 anamorphic and five non-anamorphic features, 11 television films, 36 documentaries, dubbed 31 foreign films into Russian and made a "Vario 70" film.

A prodigious output by any standard. Even the studio setting is unique, for I am sure no other studio can count 16 Embassies among its near neighbours.

One of the pictures currently shooting is a science fiction epic set in a space station travelling to a far distant planet. Called "Solaris," it is directed by Andrey Tarkovsky and is being photographed in 35mm Sov-Scope by Vadim Jusov, who visited London earlier this year.

The space station set is ambitious and complicated. Two details I noted were the fact that all written instructions to the Cosmonauts were in both Russian and English (or should it be American?) and a prop decorating the wall of the Cosmonauts rest room had a little plaque on the back of it which read "Presented as a token of peace and friendship from the Bolivian Govern-

ment to N. Khrushchev." I always wondered what heads of state did with all those gifts.

They also have a 70mm film on the floor with a Pompeii setting.

The Russian film industry achieves high technical standards by their own resources and are only prepared to buy equipment from the West if, after rigorous testing, they are sure that it is superior to their own.

Recent acquisitions at Mosfilm include a Bell & Howell additive printer and a Hazeltine analyser. They mostly use their own or ORWO colour film stock but use Kodak materials when they want some special results.

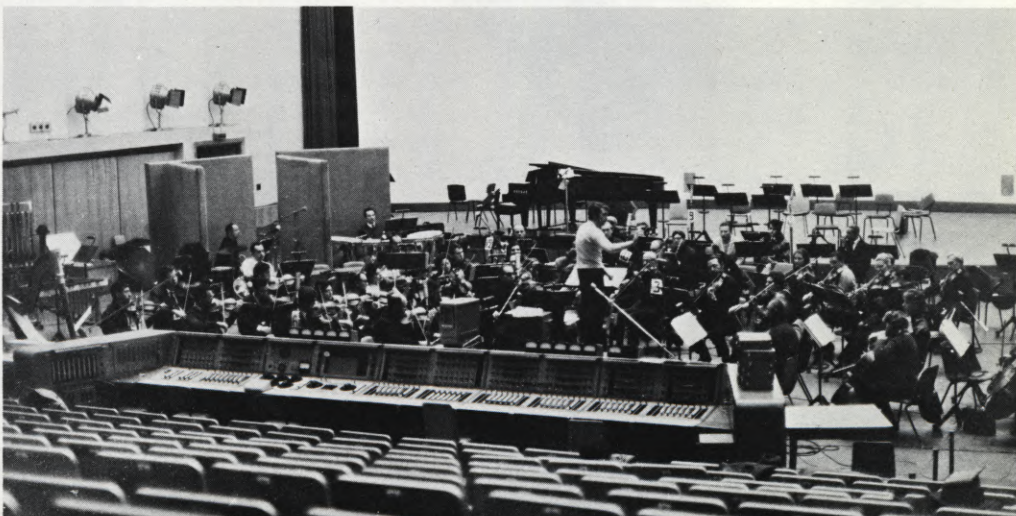
Recently they placed an order with Arnold & Richter for a complete Arri Electronicam outfit similar to that which Mole introduced into this country two years ago.

Mosfilm is very enthusiastic about co-productions and many times I was told that they had been able to set up co-production deals with many countries, including the USA but never with Great Britain.

Of course there has been UK technical involvement in a number of Soviet co-productions, particularly the Mosfilm-De Laurentis production "Waterloo."

After "Waterloo" had been shown at the end of the Moscow Film Festival I congratulated Sergei Bondarchuk on his achievement. He in turn congratulated me on the equipment and services we had provided and told me that he was determined to have Panavision cameras and lenses on some of his future pictures. ■

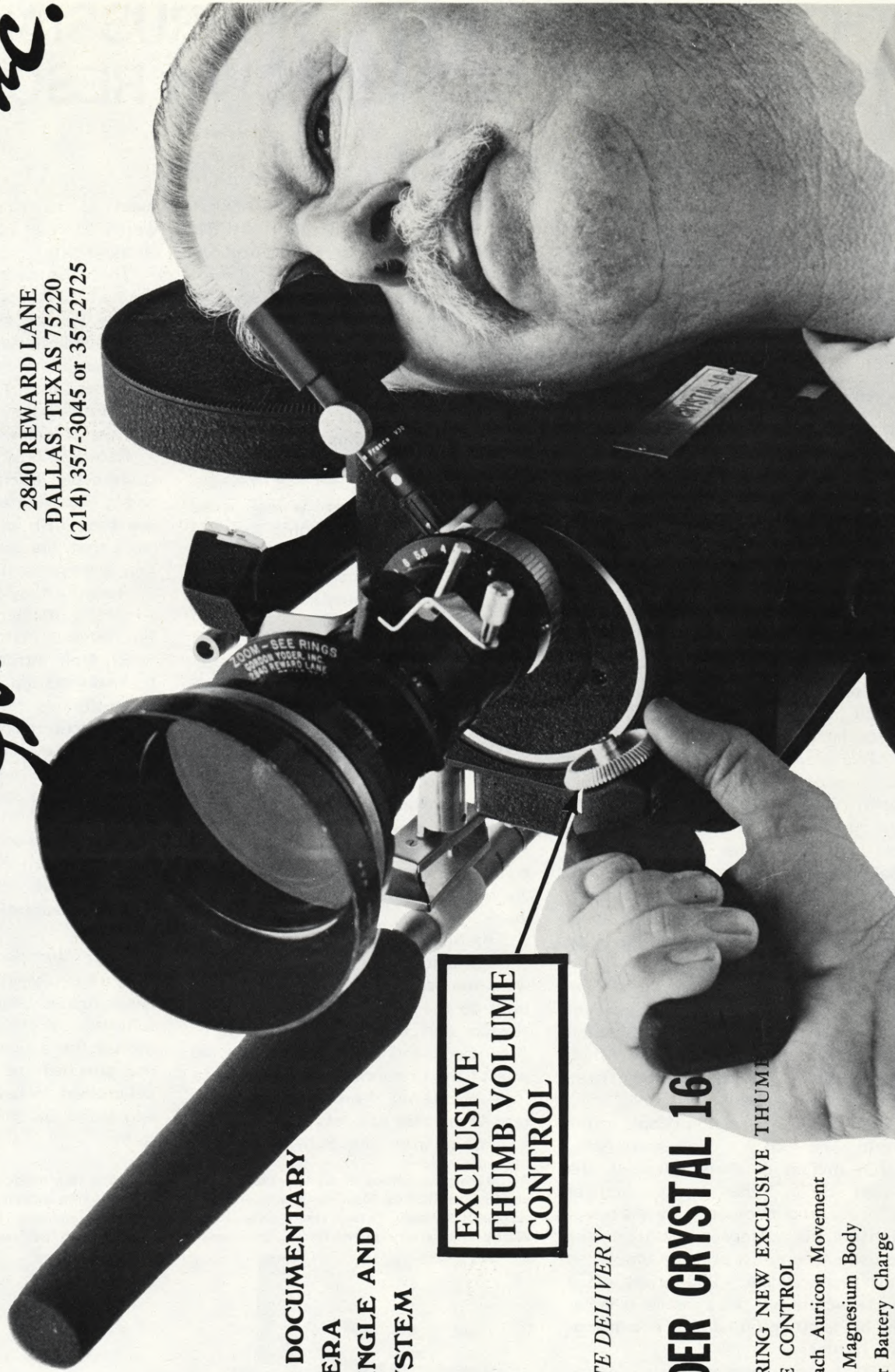
A full-scale symphony orchestra rehearses before recording film music on the large scoring stage at Mosfilm Studios, Moscow. A vast enterprise, the Soviet film industry achieves high technical standards through its own resources and the Russians are prepared to buy equipment from the West only if, after rigorous testing, they are sure it is superior to their own.



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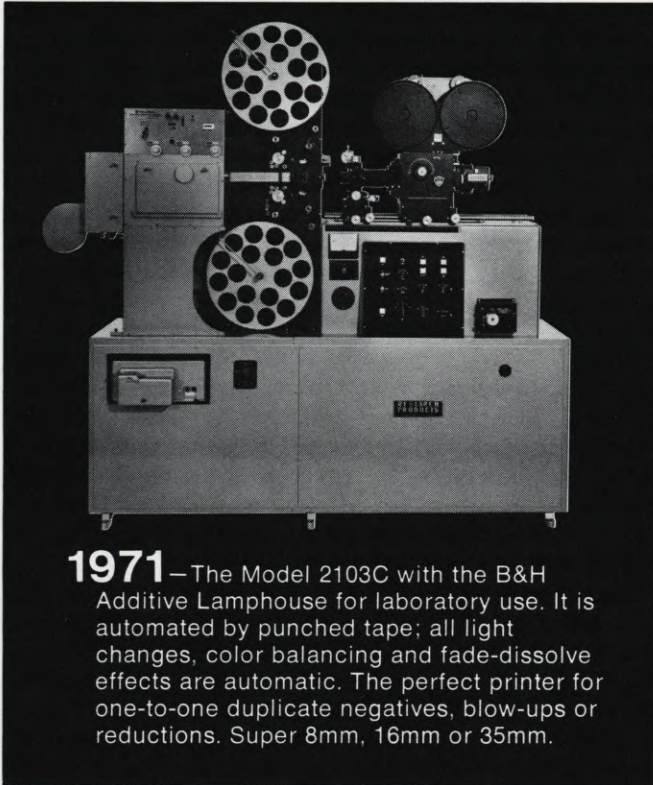
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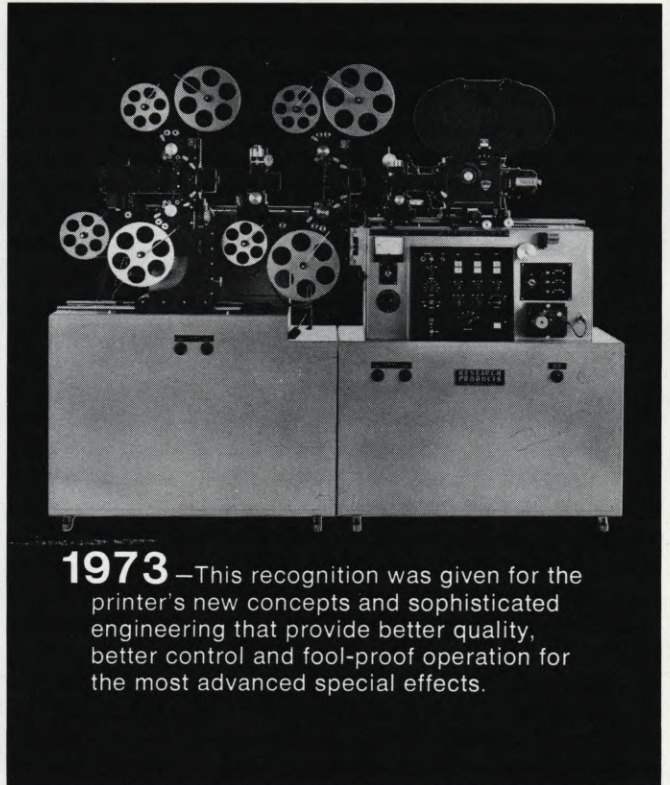
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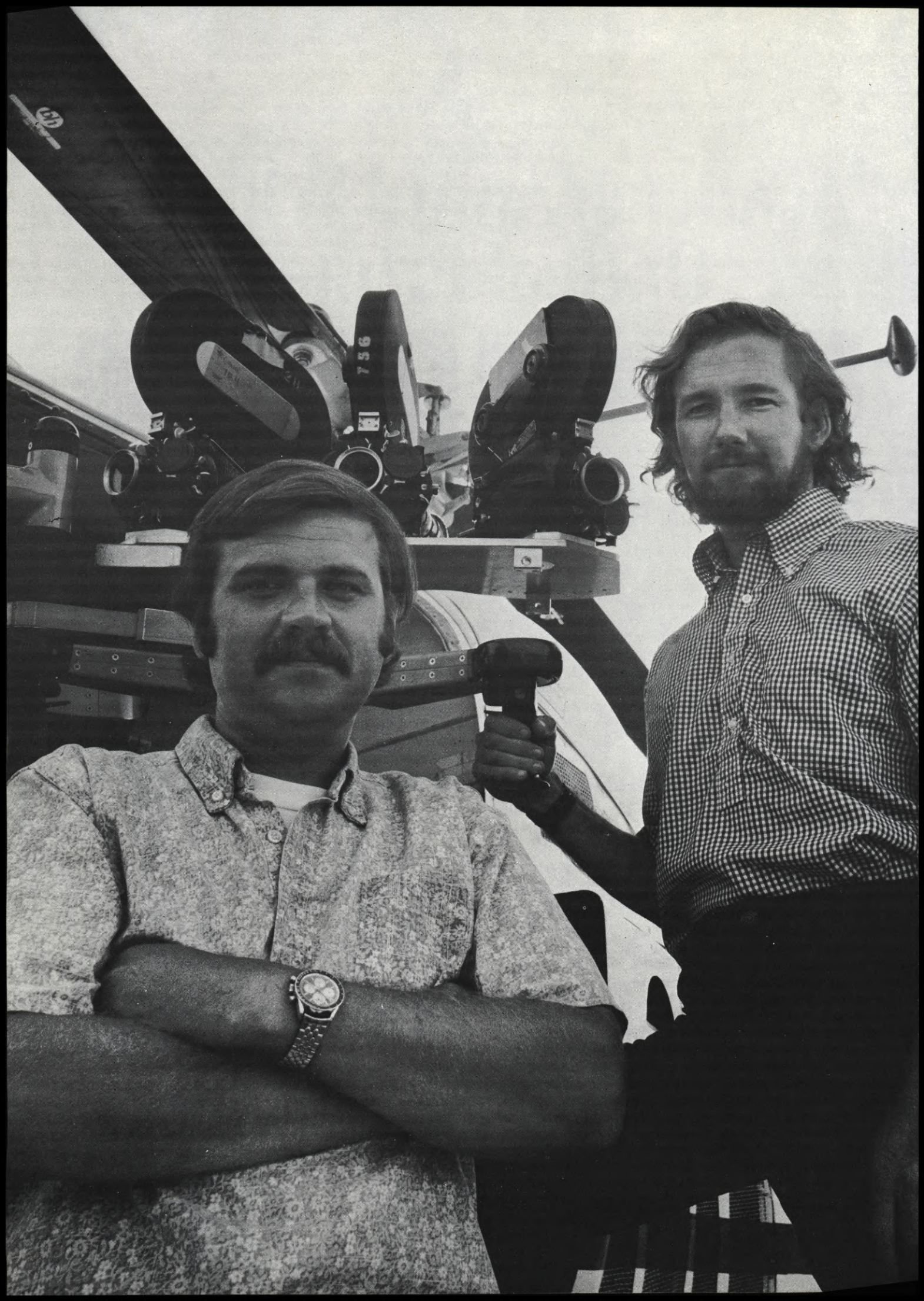


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“What we do best happens in twenty twinkles of an eye.

“The experience we had on Jonathan Livingston Seagull was probably pushing nature to the nth degree. We were trying to work in the clouds, the ocean and waves, and of course, the overall beauty of the magnificent Big Sur coastline.

“And then we tried to get a sea gull to fly in the right place. Talk about no chance for a second shot! Consider the background positions, the weather conditions from moment to moment, and it was a matter of crossing fingers three times and hoping that sea gull would fly between you and the backdrop. And occasionally he would, bless his poor little heart.

“Other people in this business have the same worries and pressures. But when they do a scene, they usually get three or four takes for safety reasons. We can't. In our type of shooting there are absolutely no alternatives, whether the subjects are sea gulls, motorcycles, or surfers. Most of the time we work with uncontrolled situations that don't respond to our commands.

“With everything else that's going on, it's really an absolute must that the film be constant, with no variation of quality. Eastman film is probably the reason for one less ulcer between us. It's definitely the most consistent thing in filmmaking.”

Jim Freeman (left) and Greg MacGillivray. Aerial photographers of the Oscar winning “Sentinels of Silence” and “Jonathan Livingston Seagull.” Directors, photographers, and editors of “Above San Francisco,” “Catch the Joy,” and “Five Summer Stories.” On location shooting a tri-screen spectacular.



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THE USSR CINEMA AND PHOTO RESEARCH INSTITUTE [NIKFI]

A comprehensive research and development facility, with 23 specialized laboratories for designing, testing and improving motion picture equipment

The Cinema and Photo Research Institute (NIKFI), located in Moscow, is a very impressive facility which is devoted to designing, testing and improving every type of equipment and material used in motion picture production and presentation.

The NIKFI facility works on a budget in excess of \$5,000,000 annually and operates 23 specialized laboratories for testing, research and development.

During the conducted tour which the gentlemen of NIKFI so kindly extended to the American Cinematographer Editor, he spoke with Prof. Victor G. Komar (Director of NIKFI), Mr. Igor M. Bolotnicov (Deputy Director), Mr. Naham Bernstein and several others on the staff of the Institute. Out of these discussions emerged the following question and answer dialogue.

Q. Can you tell me please what are the major functions of this Institute?

A. The Institute is involved in all problems concerning film production, printing, distribution and projection. We deal with new equipment and new methods for using that equipment, as well. We

Headquarters of the Cinema and Photo Research Institute (NIKFI) in Moscow. The Institute is a most impressive facility devoted to testing, research and development of all types of equipment and materials for the production and projection of motion pictures and television film. In addition, principles and main directions are formulated to be passed on to the various facilities that actually design and manufacture equipment.

also develop principles, main directions, and pass the results on to those facilities in the film industry that design the actual equipment. In addition to that, we give them drawings and models and we follow through to see that they design and manufacture the equipment well.

Q. When new equipment is developed, are the prototypes made by their engineers or yours?

A. That depends upon how complicated the project is. It could be that we would make the prototypes, but in the case of something simple we would just formulate the parameters and give them facts and figures as guidelines to how practical and reliable the particular item must be. Sometimes we make a prototype which is tested in actual film production. Then, when we've seen that it performs satisfactorily, it is passed on to the industry for manufacture. However, we involve those people in the industry from the very start of the project, because it helps to find a common language from the very beginning. At times we perform our experimentation

actually in the studios. For example, when we decided to design some video viewfinders, we manufactured them for two studios, one of which was the Maxim Gorky Childrens' Film Studio, and now they are using that equipment regularly. It is possible to actually test something in production and then, by heeding the advice gained from cameramen, recommended technological data to the manufacturer in order to achieve what is needed. Secondly, the Institute is concerned with the applications of new equipment to existing technological processes.

Q. Can you give me an example of that.

A. Just now we are dealing with a group of problems having to do with the standardization of film-making equipment. There exists an international standardization problem, and we do not want our domestic standards to differ from recommended international standards. The film-making process is very complex because it deals not simply with the shooting of the film, but with the entire series of technological methods from the beginning to the end. Aside from the actual production of the film, there are problems having to do with release printing and projection in the theatres—as well as general problems that relate to acoustics, electronics, lighting and all of the other scientific elements that are so important to cinematography. Relating to studios and theatres, we test all new technology where it is to be used to make sure that it meets the requirements, is convenient to use and is of good quality. We are engaged in trying to introduce some elements of automation into the film-making process—automated printing, automated projection and the programmed remote control of automated lighting, for example. In developing a condenser microphone that is just now being sent to the industry for manufacture, we introduced a ceramic part that makes it unnecessary to have a source of constant voltage for polarization. In another vein, regarding new sources of lighting for sound stages, we developed the principles here, but worked in co-



operation with another research institute that actually designed the lighting equipment. We also develop new kinds of presentations for expositions, like those you saw at EXPO 70—Vario 70 and the system of 3-D cinematography exhibited there. We have at our disposal theatres and all of the equipment necessary to test such presentations. We always have in progress some research designs for the future—long-term projects—but for the short term, we are concerned with such things as television equipment, tape-to-film transfer, etc.

Q. In my travels around the world I find that there is great interest in holography, with the intriguing speculation that it may someday be used in motion picture form. Has your institute done any research on this possibility?

A. No, we haven't managed that yet. At present holography is just a baby in its cradle, so we have made no specific tests in that area. Our objective to date has been to find out what has been done on it by others and to decide what we might want from it. We would like to find some other research institute that might want to work with us in this direction, to determine its potential and ascertain how it might be useful in improving existing processes.

Q. I was much impressed with your 3-D system without glasses, as presented at EXPO 70, despite the small screen size and other limitations. Have you been

able to improve it appreciably since then?

A. In terms of screen size (without glasses) there has been little change, but we have been working in various directions to make the screen bigger. We have made progress in regard to what we call "integral stereo movies". The usual double projection method presents stereo images on the screen with some interval between them. But now, instead of two images, we have nine pairs of images. This means that you no longer have to sit motionless while you watch the film. You can move your head without degrading the stereo effect.

Q. I have noticed since I've been in the USSR that there seems to be relatively little usage of the smaller formats, such as 16mm, Super-16 and Super-8. Is this actually a fact?

A. Yes, it's true that the smaller formats are used to a lesser degree. For example, 8mm is used exclusively for showing films in our schools, while 16mm is used for educational films and for release prints of 35mm features to be shown in remote areas and places that are not easily accessible. It's more practical to do the reduction printing than to make a big feature in the small format, but we have been doing some testing on an experimental basis to see if 16mm production would be worthwhile.

Q. Have you developed any technology

for the use of video cassettes or, for that matter, Super-8 film cassettes?

A. We have just started thinking in that direction. There is a State committee on radio and television that deals in such research. We would just help with research in that field, but not develop much at all. We believe that video cassettes will be used primarily for educational programs to be viewed in the home. They would not be sold, but would be rented from a sort of library—just as in London, for example, you can rent an LP album in the store very reasonably. You don't have to buy it.

Q. What is your most imminent project at the moment?

A. We are developing a whole system of standardized sound equipment for studios and theatres. The task is to make sound a standardized element. For example, microphone amplifiers will be the same in all sorts of equipment.

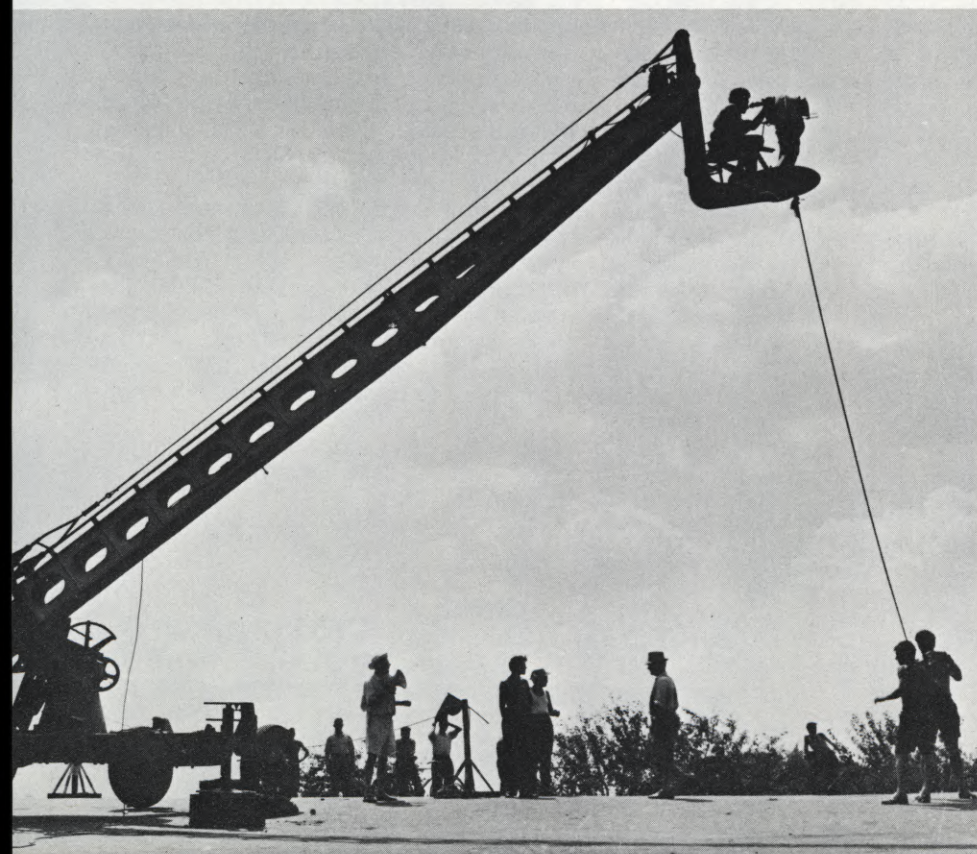
Q. Are wireless microphones being used to any great degree for sound recording in Russia?

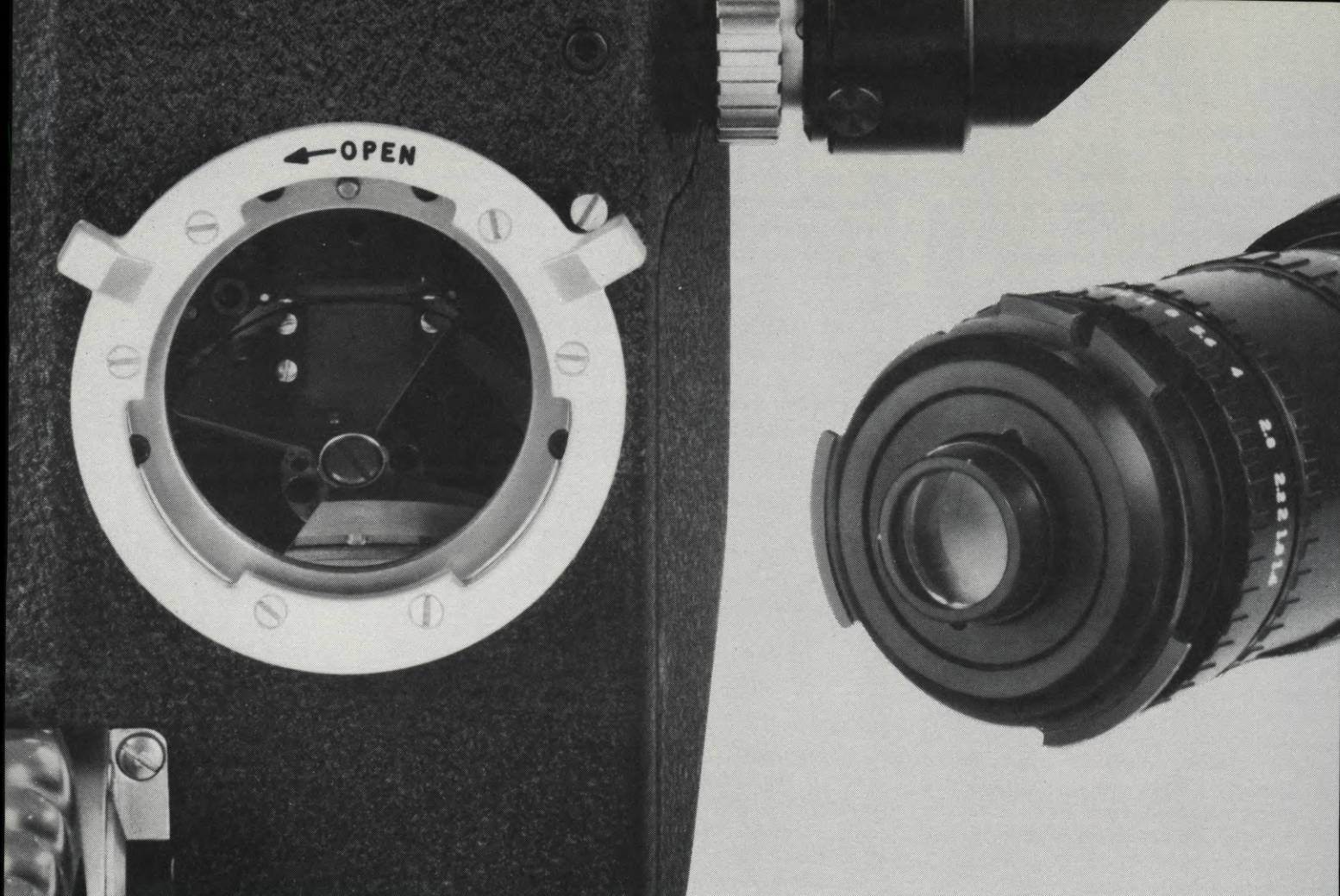
A. We have two models of wireless microphones—a one-channel model and a two-channel model. There are certain uses for them in the studio, but they are more interesting for use on location.

Q. Do you feel that there are any revolutionary changes developing in your film industry in the way of methods or equipment?

A. The most significant change for the very near future will be the wide use of video viewfinders and video recorders in film-making. We have made a number of films in our studios already using these elements and we feel they will be much more widely used in the near future. We use the electronic viewfinder simultaneously with filming only for purposes of control. Sometimes it is used during rehearsals and the scene is played back to see how well it went. Then the scene can be shot on film stock. It is especially valuable on location because the footage has to be sent to the studio laboratory for processing and there is a considerable interval during which people are sitting idly by waiting for the results. This leads to a loss of time, a loss of impetus for work and a loss of drive. With the electronic viewfinder, you not only can use it for control to check a scene to see whether it's good or not, but you can always review what you did yesterday to make sure that today's footage will match. ■

One of several large cranes manufactured in the Soviet Union. The preference in the USSR is for domestically designed and manufactured equipment whenever possible. Foreign equipment is adopted only when, after exhaustive testing in such facilities as NIKFI, it is found to be superior to domestically produced items of a similar type.





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tain proper lens orientation at all times. With our new reflex CP lens mount system your lenses are protected against any torque-related damage. A mere twist of the locking ring is all it takes to secure even those heavy zooms!

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CP-16R reflex camera shown with Cinema Products' non-orientable viewfinder, with eyepiece located approximately 1" (25mm) behind the film plane; Angenieux 9.5-57mm zoom lens, with CP-mount; plus PLC-4 lightweight 400 ft. (122m) magazine, made of glass-filled Lexan®

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A VARIOSCOPIIC MULTI-IMAGE STEREOPHONIC FILM

By MICHAEL Z. WYSOTSKY

Deputy Chief Engineer, Mosfilm Studios

and IGOR A. FELITSIN

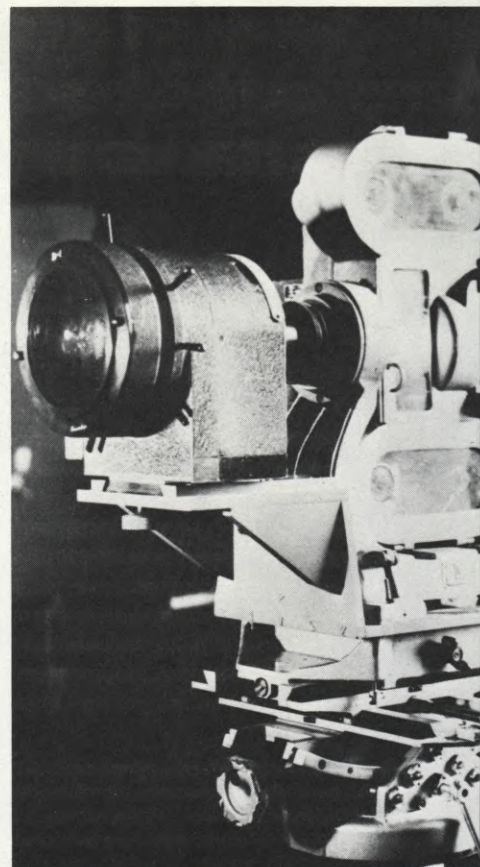
Director of Photography, Mosfilm Studios

In a varioscopic multi-image film, multiple images inter-related dramatically are presented simultaneously in varying shapes upon a 70mm (5-perforation) frame with 6-channel magnetic sound track. This process opens many new creative possibilities in film production, due to a number of advantages over other presentation systems, providing the possibility of varying the number,

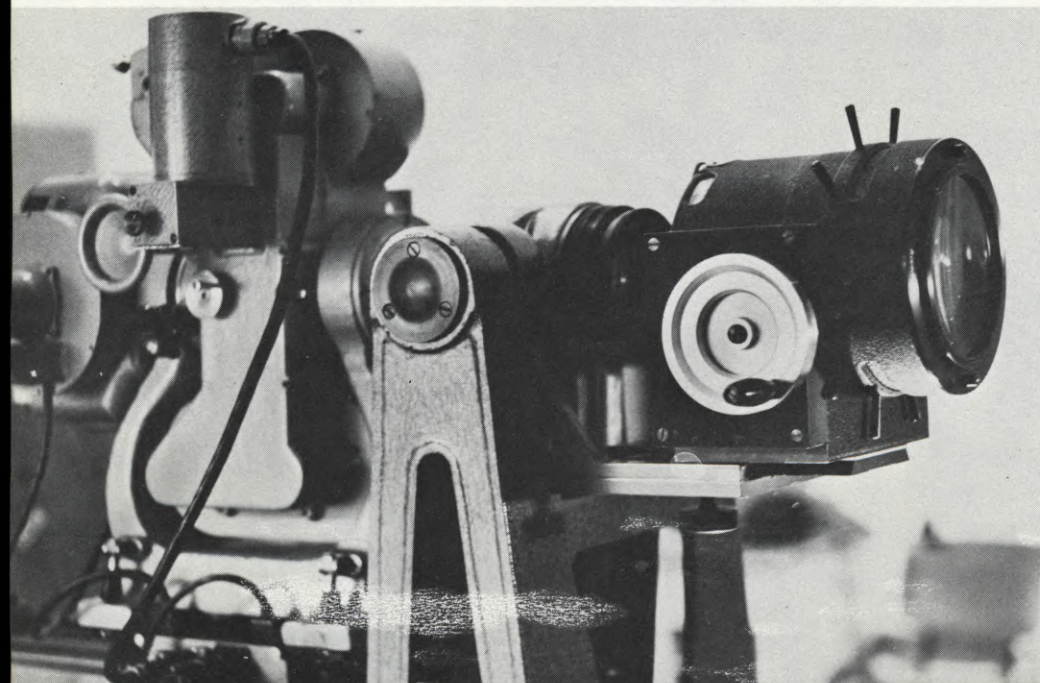
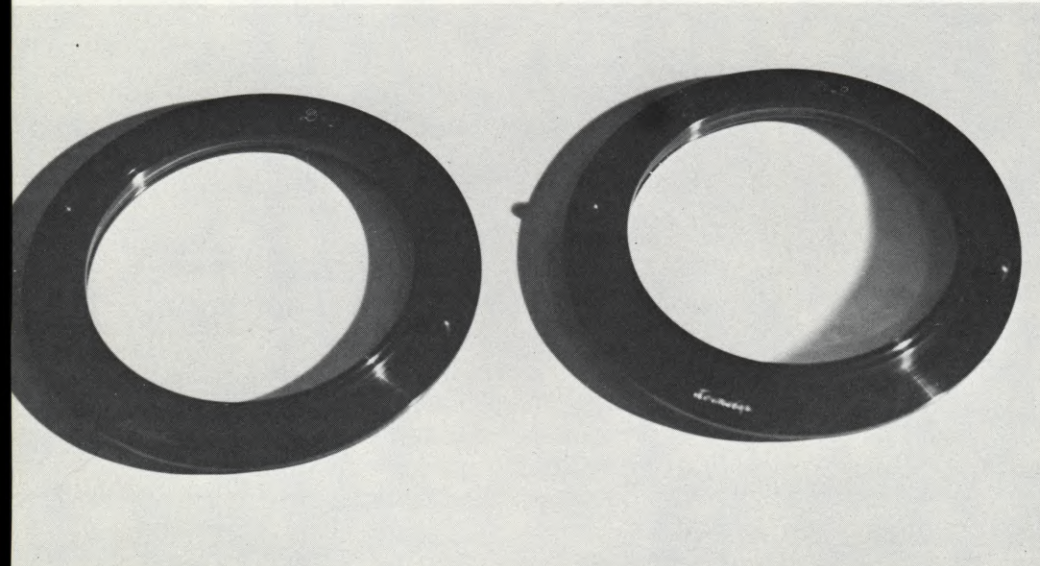
the size and the configuration of separate images upon a single wide-format frame in accordance with creative ideas and demands of a film director. At the same time, this process allows improvement of the technical quality of an image by using a single film, a single camera lens and a single big-size screen.

The projection technique and the servicing of projection equipment is

(TOP) Two special lens attachments (with diameter of 140mm) designed to fit onto the Pentovar zoom lens, as employed with the TM-70 triple-head optical printer. These were attached to the projector head for projecting and shooting at distances beginning with 450mm. (BOTTOM) One such Pentovar lens attachment shown as employed on one of the projector heads.



A special device was designed for using the Pentovar zoom lens on a PPU-3 frame-to-frame projector for second exposures.



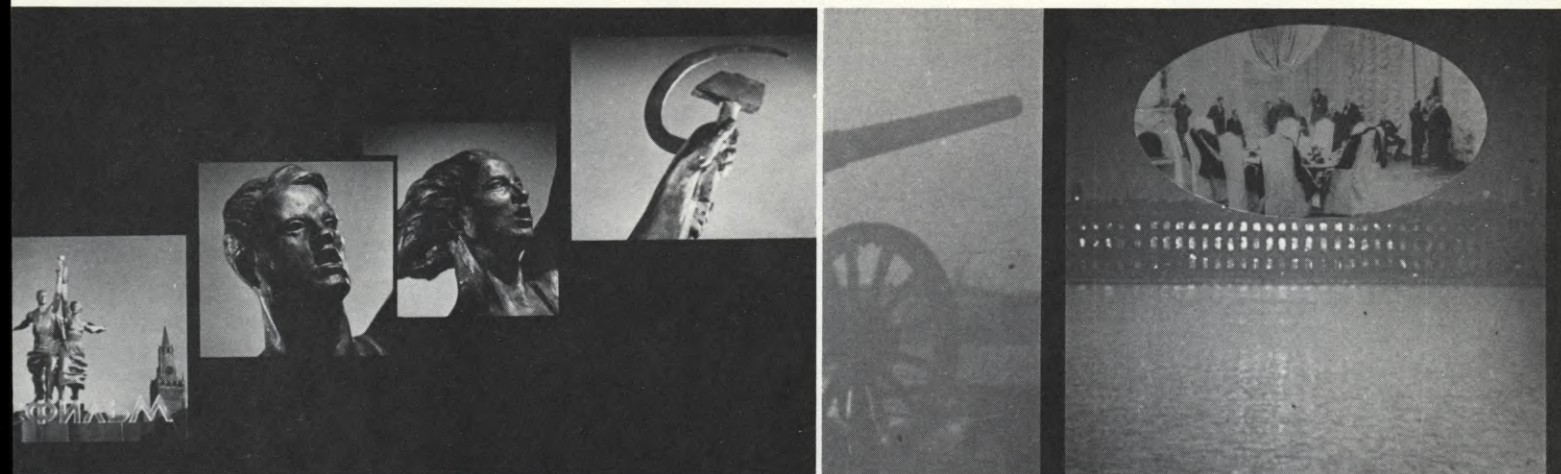
greatly simplified as compared to the multiple-screen format or Cinerama systems, thanks to the fact that no control over synchronization of projecting equipment, the registration, the brightness and the colour identity of separate images is needed, as well as the editing of several separate film strips.

It is also of great importance that the varioscopic multi-image process using a 70mm film, a single projector and a single screen can be introduced into a standard film presentation system without any equipment modifications.

Moreover, a 70mm varioscopic multi-image film can be easily transferred into a cinemascope format by means of optical printing with the subsequent mass printing of release copies for the numerous motion picture theatres equipped for cinemascope presentation.

All the abovementioned advantages of the new system were tested in actual practice during the production by Mosfilm Studios of the first varioscopic multi-image stereophonic film "OUR MARCH" (Directors Alexander Shein and Alexander Svetlov, director of Photography Igor Felitsin) in commemoration of Vladimir I. Lenin's centenary.

The new process has enabled us to show in this 20-minute short-length film



Frame blow-ups from Mosfilm Studios' first varioscopic multi-image stereophonic film, "OUR MARCH" (Directors Alexander Shein and Alexander Svetlov, Director of Photography Igor Felitsin), made in commemoration of the Lenin Centenary. The new process enabled the film's creators to show, in a 20-minute short film, czarist Russia at the time of the October Revolution and the first years of the new Soviet state as a chain of successive events which appeared simultaneously in the form of multiple images of varying configurations upon the 70mm frame.

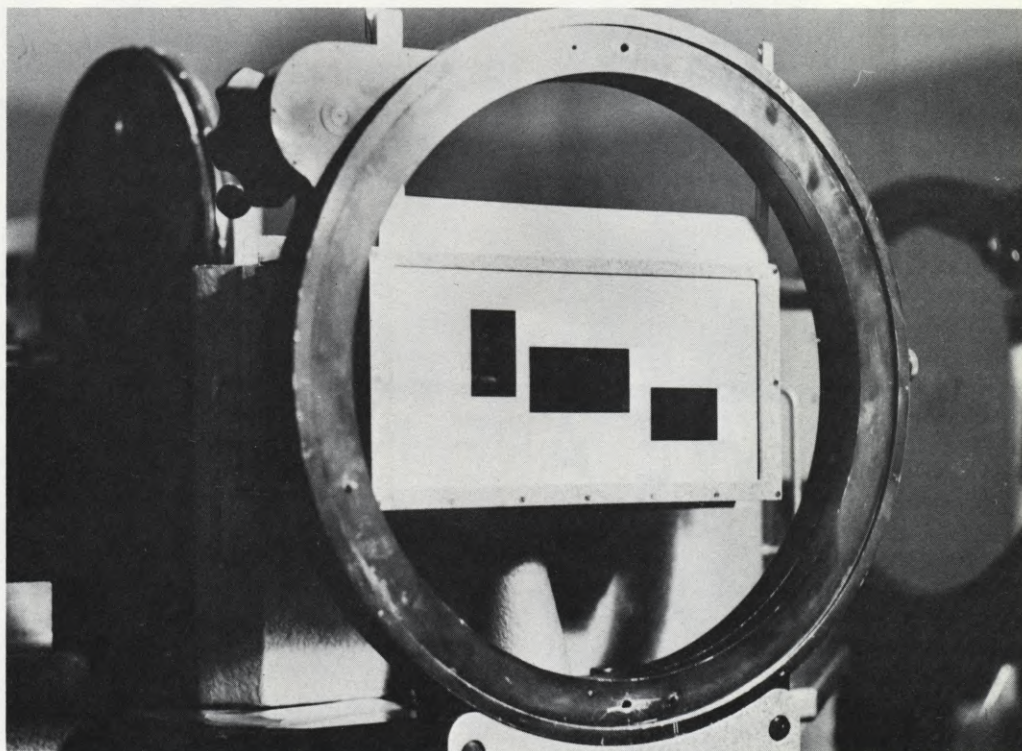
the czarist Russia, the Great October Revolution and the first years of a young Soviet State as a chain of successive events which appeared simultaneously in the form of multiple images of varying configurations upon the 70mm frame giving the general idea of events in their historical development.

It should be noted that this technique had been used before in our country but only as a spectacular or technical gimmick.

In "OUR MARCH" were shown fragmentary scenes from old Soviet films produced at different times by filmmakers of different generations.

The new varioscopic multi-image system has allowed us to present these sequences in a new modern way on the large-format screen, using creative methods of comparison, juxtaposition and contrast by showing simultaneously several black-and-white and colour images upon a single wide-screen frame.

The production technique of this
Continued on Page 977



(ABOVE RIGHT) To create the multi-image effects, cardboard masks (mattes) and counter-masks of proper sizes and configurations were installed in the intermediate plane on a collective lens between the projectors and the camera in place of the control ground glasses. When necessary, glasses with counter-masks of corresponding shapes were inserted into these notches. (BELOW) More frame blow-ups from "OUR MARCH". The one on the right depicts the prelude to the Nazi invasion of Russia.



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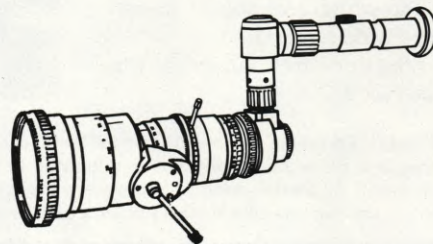
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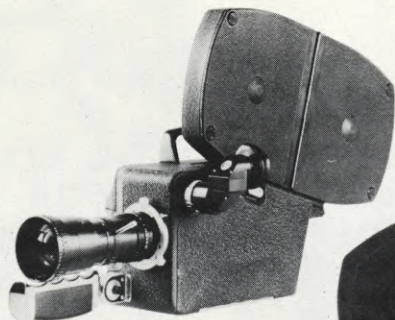
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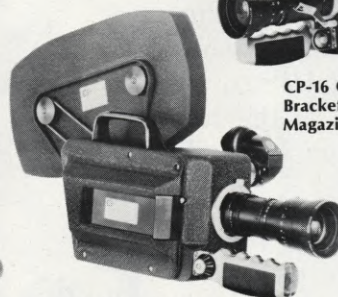
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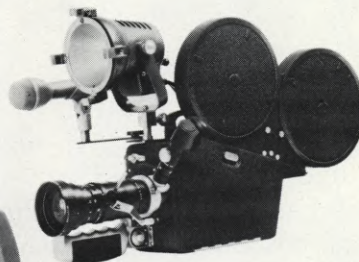
CP-16R/A Reflex Camera with PLC-4 Magazine



CP-16/A Camera with PLC-4 Magazine, RE-50 and CP headset



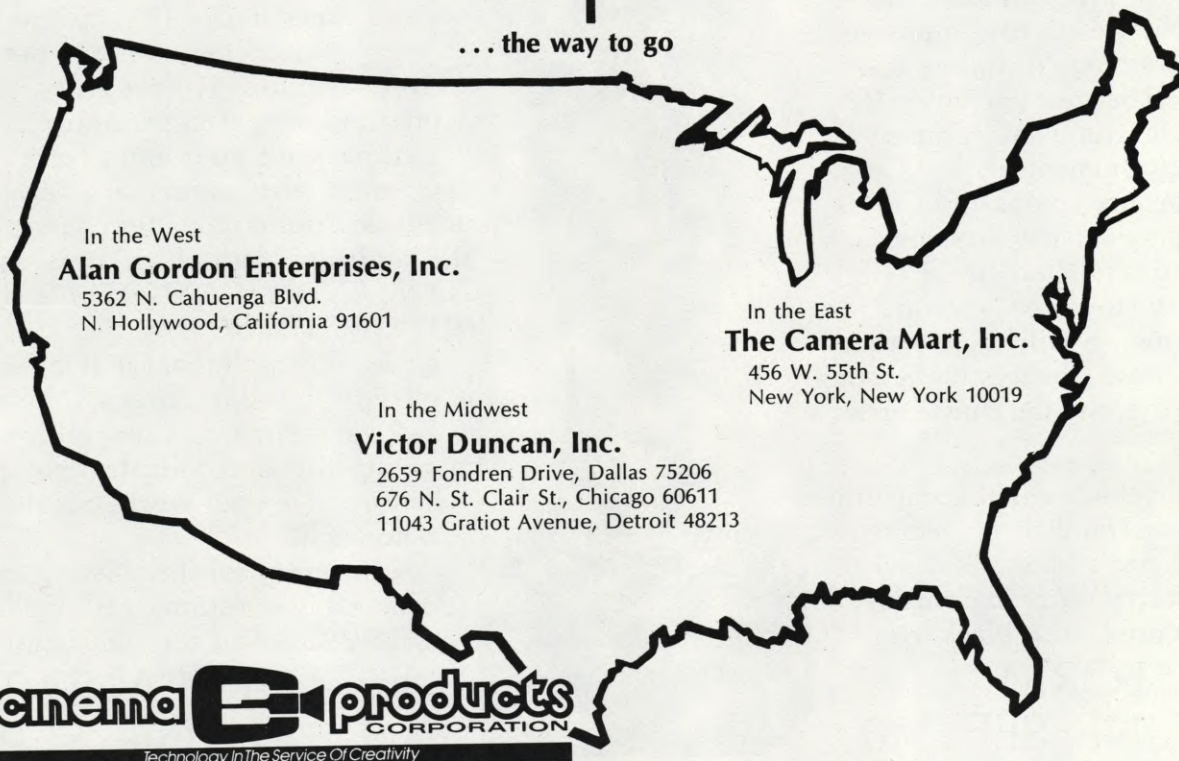
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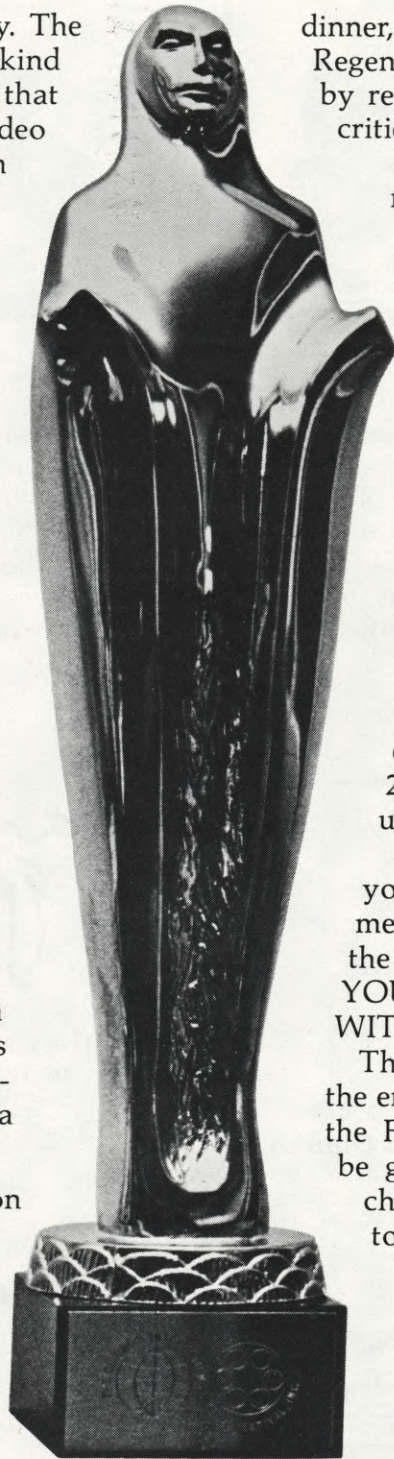
HONOR THYSELF. AND THY FILM.

The Hugo. Symbol of discovery. The award that says a lot about the kind of work you do. And an award that your business and industrial film or video tape might walk off with at the 10th Chicago International Film Festival, November 8-21, 1974.

This distinguished awards competition is being co-sponsored through a grant from two Ziff-Davis publications, PHOTO-METHODS and TRAINING, and will honor those films and tapes produced in 1973 and 1974 by: 1) in-plant production units, and 2) commercial production firms. Films and tapes from each of these production divisions will be judged separately and may be submitted in the following categories: Product/Sales Marketing, Public Relations, Employee Relations, Training (including sales training), and Science (including Research & Development, Conservation/Ecology, Biomedical, etc.) Gold, silver and bronze Hugos and Certificates of Merit will be awarded in each production division and in each film/tape category. However, no award in a particular category will be given unless the entries meet the Festival's standards. Which is why the Hugo carries a lot of weight.

Finalists in the Festival competition will be screened publicly November 11-15 at Chicago's Museum of Science & Industry. Winning entries will be honored at a black tie

**ENTRY FORM
DEADLINE: SEPT. 10**



dinner, November 17, to be held at Chicago's Regency Hyatt Hotel, which will be attended by representatives of the world film press, critics, celebrities, filmmakers, etc.

Here are two more important dates to remember: September 10 is the deadline for entry forms. And September 25 is the deadline for receipt of all films (which can be 16mm or 35mm, with optical sound)—and videotape (2", 1", 1/2" and 1/4" are acceptable.)*

If you wish, you can submit your entry in more than one category, if it's applicable. But you must also submit a separate print, form, and fee for each entry. In addition, *adequate* return postage must be enclosed for all films and tapes.

Entry fees are as follows: for films and tapes under 12 minutes: \$40 per entry / 12-25 minutes: \$50 per entry / 26-47 minutes: \$60 per entry / 48 minutes and over: \$85 per entry.

Along with your entry form and fee, you must also submit a separate statement describing your film's purpose and the audience for which it is intended. **YOUR ENTRY CANNOT BE JUDGED WITHOUT IT.**

The deadline isn't that far away so fill out the entry form today. After all, by entering the Festival's Awards Competition, you'll be giving the film industry not just the chance to see your work, but the chance to honor it.

If the entry form is missing, or if you have any questions, call (collect) 212-725-3936. And ask for Hugo.

**FILM AND TAPE
DEADLINE: SEPT. 25**

PHOTOMETHODS' AND TRAINING'S BUSINESS AND INDUSTRIAL AWARDS

* Cassettes also acceptable.

FESTIVAL RULES AND REQUIREMENTS

Films and videotapes may be entered by the producer, distributor, sponsor, filmmaker or owner.

The Festival reserves the right to change the category of the entry if the jury feels it more appropriately belongs in another category.

Prints arriving past the deadline cannot be submitted to juries because of pre-scheduled screenings. Prints arriving without entry fees will not be processed until the fee is received.

Entry fees are not refundable. Once a film is officially entered (form and fee processed), the entry is considered definite.

In case of duplicate entries, priority will be given to the entrant whose entry form and film arrives first.

Any producer entering a film requiring special projection equipment should be

prepared to arrange and pay for delivery of the equipment to the pre-screening committee, plus set-up charges, if any.

Unless denied by filmmaker at time of entry, permission is granted by entrants to present films or videotapes excerpted or in their entirety at special presentations held before and after the Festival for members of the press, film distributors, theater owners, etc., or on television.

Handling and Shipping of Films

The cost of shipping films and videotapes to and from the Festival is the entrant's responsibility. It must be PREPAID. Collect or COD shipments without previous arrangements will not be accepted.

Each reel must be marked in English as to the order of projection. The title must be marked clearly (in English) with black

ink on the white leader, or on Videotape reel. Entrant's name must be on case, can, and reel.

Management cannot assume liability for loss or damage to films or videotapes but will exercise every reasonable precaution.

Immediately following the Festival, all films will be returned to sender by least expensive means, unless otherwise requested on the entry form. A film will be forwarded to someone other than sender only upon written instruction from entrant and after payment of all expenses, if any. This is a security precaution and is for our mutual protection.

Foreign Entries, including Canada and Mexico: Films and Videotapes may be sent through diplomatic channels. U.S. Customs Regulations will be sent to you upon request.

Competition Category: _____

Indicate Production Division:

In-Plant Commercial Firm

ENTRY FORM

Send all entries to:

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 12 East Grand Avenue, Rm. 301
 Chicago, Illinois 60611, U.S.A.

Additional entry forms may be reproduced as needed.
 (Please type or print.)

Entry fee of \$ _____ enclosed.
 Make Checks payable to the Chicago International Film Festival.

Title _____

Agency _____

English Title _____

Client _____

Production Co. _____

Product _____

Producer _____

Script _____ Music _____

Director _____

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Cameraman _____

Running Time _____ Screen Ratio _____

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 Your signature constitutes acceptance of Festival rules.

Entrant: _____ Date: _____

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USSR STATE INSTITUTE OF CINEMATOGRAPHY

In Moscow, the first and largest university of the cinema art in the world has 1,600 students at a time in training to learn all of the creative disciplines of modern motion picture production.

There exist in the USSR two major schools of cinema dedicated to the training of professionals for the motion picture industry. One of these is the State Institute of Cinematography (VGIK) in Moscow, which has the task of preparing specialists in the creative disciplines of cinema. The other is the Institute of Cinema Engineers (LIKI) in Leningrad, which trains film technicians.

The USSR State Institute of Cinematography, the first and largest university of cinema art in the world, was founded in 1919 and has, from its very inception, been regarded as the foremost national school of film technique. For more than half a century it has trained specialists in all of the artistic skills of motion picture production: screenwriters, directors (for feature films, documentaries, scientific, educational, animated and television films), cinematographers, actors, production designers, film historians, critics and economists (organizers of film production and distribution).

Feature films are released by twenty film studios of the USSR. About forty studios turn out documentaries and popular science films. At all of these studios one can see people wearing badges in the shape of a film frame. These people are all graduates from, or students of, the Institute of Cinema-

tography (the VGIK).

During the 55 years of its existence the Institute has trained more than five thousand Soviet and 225 foreign film-makers.

Each year more than two hundred young people become students of this film school. They are chosen by the Examination Board out of an enormous number of applicants. The board selects those who have proved their right to be film-makers, who have greater abilities, a deeper vision of life, keener thinking and vivid imagination.

In some of departments—scriptwriting, directing, camera, art, cinema research—long before the entrance exams the applicants take part in a preliminary competition. Each applicant submits his or her own work which has to be of a specific character for each faculty: an essay or a review for future film critics, drawings and paintings for art directors, scripts, sketches or short stories for scriptwriters, stories or amateur films for directors, photographic portraits, landscapes or any genre photos and sometimes also drawings and paintings for future cameramen.

The first success at the competition is marked by the statement sounding like a password: "Admitted to the examinations."

What are these examinations like?

At the directors faculty the examina-

tion starts with a discussion of the works submitted to the competition. Then the applicants have to see a film and analyze it thoroughly. Next step is writing an essay on a given theme or a short story about the most striking episode of one's own biography. This is to test the life experience of young people, their vision of life and ability to reflect life creatively in their works. A future director has also to recite a story or a poem and to perform a sketch on a given theme; since he will have to work with actors he must know the elements of acting.

The applicants to the camera department take an examination in the theory of photography, shoot a short reportage or a scene on location and photograph a portrait or a plaster model in the studio with light effects.

The talent of the future actors is tested through a special series of examinations in several rounds. They recite poems, fables, short stories. There is a special exam in performing sketches, and another in diction and rhythm. All requirements are summed up in a very serious final test—filming a scene with live recording.

Scriptwriters' and critics' examinations are alike in many ways. They start with a discussion of the works submitted for the competition. Then the applicants write a review of a film they have previously seen. But from this point their exams differ; scriptwriters write a scenario on a given subject, while future critics work on an article on some theoretical problems of cinema.

Future art directors have exams in composition, painting and drawing.

The picture of examinations at the Institute of Cinematography would be incomplete without mentioning a talk with each applicant with the aim of finding out his or her general cultural grounding, tastes and likings, knowledge of classical and modern literature, theatre, art and music, as well as of special literature on the cinema.

The examinations are over. From now on the students have a new biography—a creative one, and a new life—the life in art.

The State Cinema School was opened on the first of September, 1919, five days after V.I. Lenin had signed a Decree on the nationalisation of the cine-photo industry. The School occupied four rooms

The USSR State Institute of Cinematography, located in Moscow, has for 55 years been providing top creative talent for the Soviet film industry. Each year more than 200 young people, out of an enormous number of applicants, are chosen by the Examination Board to become students of this film school—but only after having passed a most challenging series of verbal and written examinations.



at the First Studio of the Moscow Art Theatre. At first there was only one class for actors (or "models" as they were called at the time). There were 25 students there. They were all enthusiasts seeking new ways of expression, new technique in cinema.

Among the first teachers were famous representatives of cinema and theatre art: V. Gardin, actor and film director, who headed the School; L. Kouleshov, film director; O. Preobrazhenskaya, a famous cinema and theatre actress; L. Leonidov, an Art Theatre actor, A. Levitsky, Cameraman; V. Tourkin, scriptwriter and theoretician of cinema; Y. Zheliabuzhsky, film director and cameraman.

The list of the first students was also notable: Vsevolod Pudovkin, later a world-famed director, S. Komarov, V. Fogel, A. Khokhlova, B. Barnet, all brilliant film actors.

At the beginning, the organizers of the School met with enormous difficulties: there was no place for studies, no studios,



Students studying in the library of the Institute, which contains about 180,000 volumes. Its collection of the special literature relating to cinema techniques and problems is unique. The Scientific Research Department of the Institute constantly publishes special textbooks and manuals on the cinematographic skills, plus the history of the Soviet and foreign cinema.

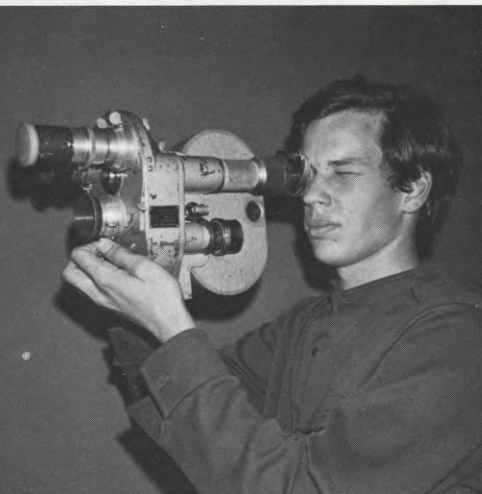
Sergei Eisenstein, the great film director, devoted a large part of his activities to the Institute of Cinematography, where he held a Chair of directing. In 1932-35 Eisenstein worked out a systematic course and the first programme in the world for teaching the basic elements of film directing.

Creative biographies of many leading masters of the Soviet cinema are inseparable from the history of the Institute. All of these people generously shared their experience with the young film-makers to be: V. Pudovkin, A. Dovzhenko, L. Kouleshov, I. Savtchenko, N. Zarkhi, E. Tisse, V. Nielsen, I. Bokhonov, N. Nau-

Continued on Page 988



(LEFT) Students at the Institute represent 32 Soviet nationalities and many foreign countries. (RIGHT) Student cameraman tries hand-held camera.



Drawing and painting courses are a requisite of the curriculum, because cinema students must develop an eye for pictorial balance, color and composition. The entire course, which lasts five years, gives directing students the opportunity to make five feature films. Students in the other creative disciplines receive a similar degree of experience.

laboratories, cameras or film. And most important, as a very young branch of art, cinematography could not and did not have any scientifically based system of training methods. Therefore, the basic task of the pedagogues at the School was to work out an accurate system of education and training.

During the twenties the School was reorganised many times; new faculties were added.

In 1925 it was turned into the State Cinema College and by 1930—into the Institute with faculties of film directing, acting, camera and scriptwriting. Chairs were formed for all the main subjects. Programmes and training methods were developed and improved.



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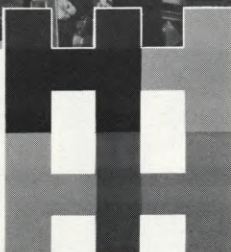
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70mm MOTION PICTURE CAMERAS USED IN THE USSR

While the 70mm format is being phased out in most film-producing countries (due to cost and other factors), it is more popular than ever in the Soviet Union—with sophisticated technology to serve it

The 1 CWC ("Rossia") Single-System Sound-Camera

The "Rossia" camera is intended for live recording on the sets at film studios.

The claw mechanism of the crank-link gear type, with a pilot claw, secures a high degree of precision in the constancy of the picture setting (0.01 mm), and shooting, with the film travelling both forward and in reverse, at 24 frames per second.

The low level of noise created by the camera, and the effective sound-dampening equipment make it possible to conduct live recording with the microphone situated at a distance of 0.75 m from the camera, and with an additional sound-dampening device—at a distance of 0.5 m.

A one-blade mirror-reflex shutter with a regulated sector of from 0° to 165° is used in the camera. The viewing system, which employs a mirror-reflex shutter, is free of finder parallax, allows viewing the picture both while preparing for and during the shooting of the scene, and also provides the opportunity to appraise the image definition and to focus the camera.

The field of vision in the viewing system of the "Rossia" camera is bigger than the field of the shot, so that the camera-man can see some part of the space not included in the shot and thus easily orientate himself when conducting panning shots or shooting moving objects.

The camera is supplied with a set of 5 high-quality anastigmatic motion-picture camera lenses with focal lengths of

70mm automatic reflex camera type K.S.S.R. Film speeds from 16 to 32 F.P.S. Magazine capacity 65 metres. Lens range 28 to 1000mm. Weight 8 kilograms.

28, 40, 56, 75 and 100 mm.

Focussing is done with the help of the individual distance scales on the focussing mount, which can be viewed clearly with the help of a special periscopic device, or with the aid of the image on the focussing ground glass, viewed through a focuser. The focuser produces a direct image with a 3.25X magnification and has a correction of ± 5 dioptrics for adjusting the focus by the eye.

It is also possible to observe the compositional pattern of the shot with the help of the detachable optical finder, the parallax of which is corrected automatically for the distance needed when the lens is being focussed.

The two interchangeable light-hooding devices serve to protect the lenses from penetration of alien light during shooting.

The "Rossia" camera is equipped with a special automatic device for taking of the number of the scene before each shot.

The camera has two double external magazines holding 300 m of film, which are covered by a sound-proof hood after they are installed on the camera.

The camera's mechanism is put into operation by a synchronous hysteresis three-phase electric motor generating a current of 220 V and 50 hertz frequency.

The friction transport in the take-up magazine is operated by a separate AC electric motor with a "soft" characteristic, which guarantees the uniform winding of the film into a reel.

A special blocking system excludes the possibility of putting the camera in operation if it has been loaded improperly, and also switches the camera off in case the transport of the take-up magazine is malfunctioning, or when the film is torn or ends.

The camera dimensions in operation condition are 800 X 580 X 595 mm.

Weight (without film)—70 kg.

The "70 CK" Single-System Sound-Camera

The "70 CK" camera is intended for live recording on the sets in film studios, but may be used on location as well.

The claw mechanism of the crank-link type, with a pilot claw, secures a high degree of precision in the con-

stancy of the picture setting (0.01 mm), and shooting, with the film travelling both forward and in reverse, at 24 frames per second.

Special devices for sound-proofing the body of the camera and the claw mechanism, which produces little noise, serve to keep low the level of the noise produced by the camera—not exceeding 30 decibels at a distance of 1.5 m from the front wall of the camera.

The camera has an adjustable shutter, with the opening adjusted both manually and automatically (to obtain dis-solves) in the range from 0° to 175°.

The camera is supplied with a set of 5 high-quality motion-picture camera lenses with focal lengths of 28, 40, 56, 75 and 100 mm.

Focussing is done with the aid of the individual distance scales on the focussing mount, or with the aid of the image on the focussing ground glass viewed through a focuser.

The focuser produces a direct image with a 3X or 6X magnification and has a correction of ± 5 dioptrics for adjusting the focus by the eye.

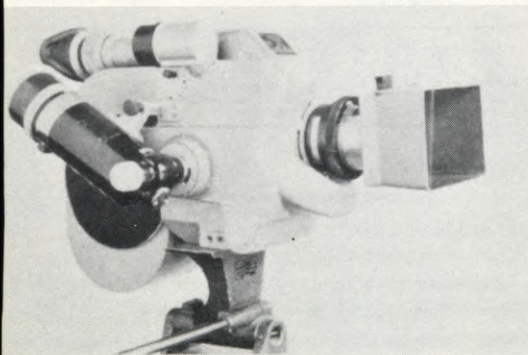
The compositional pattern of the shot can be observed during shooting with the aid of one of the two detachable optical finders. One of them is of the telescopic type and is used when shooting with the F=28 mm lens, and the second finder—with all the rest of the lenses. When the lenses are focussed, the parallax of the finder is corrected automatically and the lens of the finder is focussed to the distance of the shooting.

The two light-shading devices serve to protect the lenses from the penetration of surrounding light during shooting. One of them is of a rigid type and is used with the F=28 mm and F=40 mm lenses; and the other—with bellows—with the F=56, 75 and 100 mm lenses.

The camera is equipped with double external magazines holding 300 m of film.

The camera is driven by a synchronous three-phase electric motor of 140-watt capacity and 220 volts.

The blocking system excludes the possibility of the camera being put into action if it has been loaded incorrectly or in case the transport of the take-up magazine is malfunctioning, or when the film is torn or ends.



Dimensions of the camera in working condition—775 X 670 X 610 mm.

Weight (minus the film)—about 85 kg.

The "70 KCK" Cine-Camera for High-Speed Photography

The "70 KCK" camera is intended for taking films with frequency of up to 90 frames per second. Thanks to the high degree of precision in the position of the picture and to the possibility to transport simultaneously two films, with both of them travelling either forward or in reverse, this camera is being widely used also in taking all kinds of trick shots with normal frequency of frames or when shooting by frame-by-frame method.

The claw mechanism of the crank type with a pilot claw and the device for changing the claw supply allow to guarantee a high degree of precision in the position of the picture (0.01 mm) at different speeds of photography and when the film has a shrinkage of up to 0.2% of the nominal. When two films are transported simultaneously and when the film is travelling in reverse, it is only permissible to photograph with a frequency of up to 24 frames per second.

The camera has an adjustable shutter, with the opening adjusted both manually and automatically within the range of from 0° to 160°.

The camera is supplied with a set of 5 high-quality motion-picture camera lenses with focal lengths of 28, 40, 56, 75 and 100 mm.

Focussing is done with the aid of the individual distance scales on the focussing mount, or of the image on the focussing ground glass, viewed through a focuser. The focuser produces a direct image with 3X magnification for the entire picture and with 6X magnification for the centre of the picture, and also has a ± 5 dioptics correction for focussing by the eye.

When shooting is in process, the pictorial composition can be observed through two detachable optical finders. One of them is used only with the F=28 mm lens, and the other—with all the others. The parallax of the finder for the distance of the shooting is corrected automatically simultaneously with the focussing of the camera lenses.

Two detachable light-shading devices serve to protect the lenses from the surrounding light during shooting. One of them is used with the F=28 and 40 mm lenses, and the other—with the F=56, 75 and 100 mm lenses.

The camera is equipped with double external magazines holding 300 m of

film and with a quadruple magazine to operate with two films simultaneously. This magazine can be loaded with two reels of film—150 m long each.

The camera is driven by a DC electric motor of 24 v.

The blocking system excludes the operation of the camera if it is improperly loaded, and also stops it if the transport of the pick-up magazine is damaged, or when the film ends or breaks.

Dimensions of the camera in operating condition—700 X 480 X 543 mm.

Weight (minus the film)—43 kg.

The "1 KCWP" Hand Cine-Camera

The "1 KCWP" camera is intended for shooting separate episodes which involve the necessity for the camera-man to be able to move about with the camera.

The rational design and the able utilization of new materials made it possible to combine the insignificant weight of the camera with a high degree of reliability and convenience in operation.

The claw mechanism of the crank-link type without a pilot claw secures the constancy of the position of the picture with an instability of not greater than 0.02 mm.

The system of viewing, incorporating a mirror-reflex shutter with a constant 160° opening, allows the camera-man to observe the object of photography all the time and see its picture without a parallax.

The field of vision in the "1 KCWP" camera is bigger than the field of the shot, so the camera-man can see a bit of the space outside of the shot and can easily orientate himself when panning and shooting moving objects.

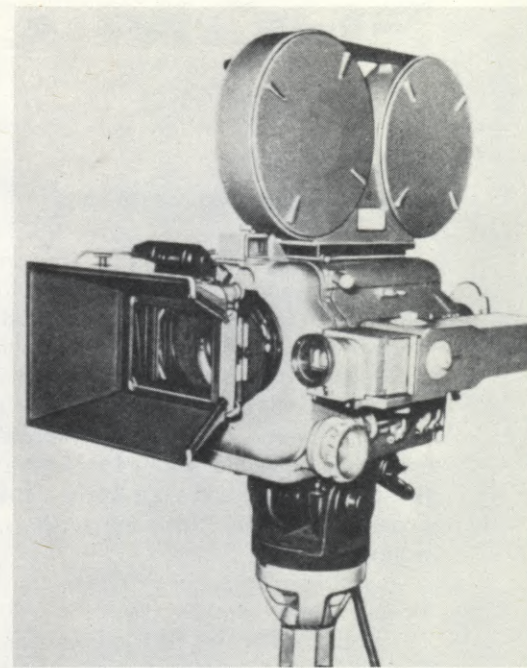
The camera is supplied with a set of 5 high-quality anastigmatic motion-picture camera lenses with focal lengths of 28, 40, 56, 75 and 100 mm. Each of the lenses has its own lens shade of rectangular shape.

The camera is driven by a DC electric motor fed from a lightweight portable battery of 12 v.

The frequency of frames can be regulated from 12 to 32 frames per second by changing the number of the revolutions of the motor with the aid of a rheostat. The frame frequency is controlled by means of a special tachometer installed in the camera.

The camera has external magazines, holding 65 m of film. Each magazine has a counter showing how much unexposed film it contains.

The camera has at the bottom a socket with a 3/8" groove for mounting



70mm Rossija Reflex Camera. Film speed 24 F.P.S. Lens range 28 to 30mm. Zoom 70-OPF-1. 60 to 240mm and 70-OPF-3. 40 to 140mm. Weight 80 kilograms.

on a pedestal. When doing hand camera work, a handle is screwed into the socket.

Camera dimensions in operating condition—455 X 235 X 355 mm.

Weight (minus film)—7 kg.

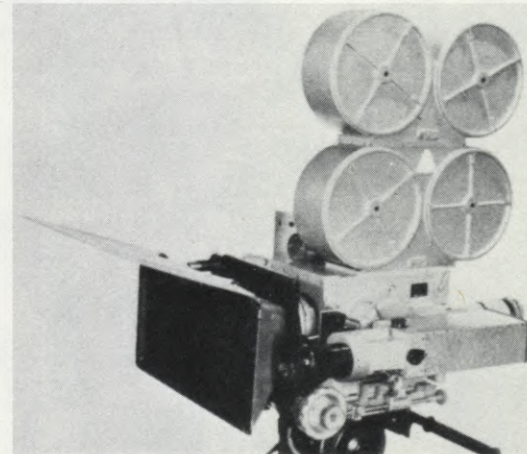
The "NNY-70" Single-Frame Projector

The "NNY-70" projector is designed for single-frame projection of picture image from the 70-mm film when doing composite-photography work.

The feeding device of the projector allows for transporting of one or two

Continued on Page 985

70mm high speed camera type K.S.K. Film speeds from 0 to 90 F.P.S. Lens range 28mm to 1000mm. Zoom 60 to 240mm and 40 to 140mm.



FROM OLGA-WITH LOVE

By LASZLO PAL

Producer, Pal Productions, Seattle, Wash.

It doesn't happen very often that an American producer is asked to make a television commercial in the Soviet Union. As a matter of fact, to our knowledge, this was the first time such a feat had been accomplished and you might just wonder what kind of product, or client, would require Red Square for a background and Olga Korbut, the pixie gymnast from Russia, for a spokeswoman.

It all started in Spokane, Washington, where the next World's Fair, EXPO '74 was to be held in May through October. The USSR was to be one of the major foreign exhibitors with 52,000 square feet of pavilion space, a staff of 200, visiting hockey and basketball teams and the Russian gymnasts featuring Olga Korbut, their Olympic champion.

Since winning in the 1972 Olympic Games, Olga Korbut has become known and admired in the United States and, as part of the visiting Soviet gymnastics team, it seemed natural to select her as a spokeswoman for the Fair.

This was the beginning of long negotiations between the advertising agency representing EXPO, Coons, Shotwell & Adams of Spokane, and Soviet officials.

(LEFT) Russian Production Manager Pavel Belits Gaiman and American Producer Laszlo Pal discuss their many production problems. Speaking fluent English, Pavel soon became the most important member of the crew. **(RIGHT)** Dressed in a modish red fox fur hat and coat, Russian Olympic gymnastics champion Olga Korbut looks anything but happy, as she grows colder and hungrier by the minute.

Although they liked the idea, further developments failed to materialize and the deadline for getting the commercials completed was getting close.

Abruptly, after weeks of silence, we received a telegram from Moscow saying we had three days to pack our bags and fly there to film Miss Korbut prior to her leaving on a tour. Our travel agent accomplished the impossible task of getting visas and tickets together and we arrived in Moscow on January 10th, as requested by the USSR Sports Committee. After three days of further negotiating, we finalized the script—which had to be revised in order to preserve Miss Korbut's amateur status.

We were permitted to take our raw stock, Eastman 7252, and my Eclair into the country and were told that the exposed film could be brought back unprocessed. The technical crew was to be supplied by Novosty Press Agency's television department which produces for Soviet television and assists outside producers. This agency has a pool of approximately 300 production people, equipped with Eclair, Arri, and Nagra equipment, who are available to visiting producers and network correspondents.

An American motion picture crew in the USSR seeks sunlight and sausages to film a television commercial starring Russia's petite gymnastics star

We were lucky in being assigned a production manager, Pavel Belits Gaiman, who spoke fluent English and quickly became the most important member of my crew. He had the flair and know-how to deal with the seemingly impossible situations which arose.

Two cameramen were assigned to us, one with an Eclair NPR and the other with an Arri BL. Both had worked with Olga before and mentioned her occasional temperamental outbursts, but I didn't take their remarks too seriously. Commercials often present directing challenges involving hard-to-shoot children, trained raccoons and assorted other animals, so we felt we could take most things in stride.

January 15th was set as our shooting day, the only day we would have with Olga, since she was leaving for Germany on the 16th. The night prior to the big day, we saw the team working out at the Red Army Sports Center and were introduced to our star. She was very charming and assured us that there would be no problem with the English/Russian script. Much reassured, friend and EXPO agency producer Chris Young and I returned to the hotel to toast the next day's shooting with a bottle of vodka.

D-day dawned and we were picked up at 9 AM by Pavel, who drove us to the Novosty Press office where I met our filming crew for the first time. Immediately there were problems. The male connector for the wireless microphone was not compatible with the female input on their Nagra. A quick soldering job and we were in business. Meanwhile, Chris and Pavel left to pick up Olga at the Sports Committee office. The crew and I waited. One hour passed and still no sign of Olga, Pavel and Chris. At this time of year the days are short and there are no more than four or five hours of good shooting light in Moscow.

Finally, at 11:15 AM, the party appeared, Olga looking absolutely smashing in a luxurious full-length fox fur coat. In solemn procession, the five cars headed for Red Square, our first location. The temperature was a chill -3° F. UPI, AP and the Soviet Press were busy taking pictures of Olga as I was setting up the first shot. Passersby were curious but luckily there was no crowd



of admirers to contend with. People were more curious about 6'6"-tall Chris Young who sported a Stetson cowboy hat and American Air Force parka.

It was time to bring Olga out of her heated car. She fluffed the lines on the first rehearsal and became nervous and irritable. Pavel and I held her hand and spoke to her in fatherly reassuring tones saying that everybody makes mistakes the first time. On the second take she blew the English dialogue again and did not feel like looking towards the camera, let alone smiling. She burst into tears. She was cold. Back to the heated car she went. After a short conference with Chris we revised the script. In the new version she only had to say one sentence in English and the rest in Russian. This improved her delivery somewhat for the next take, but Boris, my first cameraman, gave me the not-so-cheering news that his camera had frozen up during the first one. Meanwhile, Pavel reminded me that it was time to be moving on to our second location—since it was an hour's drive from Moscow. The last four takes were shot hand-held and were wrapped up in about 15 minutes.

An hour later we arrived at our second location in the countryside, some 30 miles or so from Moscow. The scenery was spectacular on the way, but all I could see was the sun slowly sinking towards the horizon. Because we were late, the troika and horses had been unharnessed and returned to their stable. It would take forty minutes to reassemble everything. "Impossible! We will lose the light in an hour," I said to Pavel. There was nothing we could do but wait. And then it happened. Olga suddenly and urgently remembered that she had not yet had her lunch. She was hungry and had to eat. I presented her with a John Denver record, but she would not relent. Chris offered her gum but she insisted she must have sausage. I made a quick, but very important decision. **OLGA MUST HAVE HER SAUSAGE . . .** or there would be no commercial.

About ten miles away we came upon a restaurant in a small village. It was closed. We banged on the door and an old woman appeared. We explained that we had Olga Korbut with us and that she was hungry, hungry for sausage. The old woman opened the restaurant and Olga had soup, chicken and SAUSAGE . . . I could not believe my eyes. She ate the whole thing . . . while the sun was sinking in the southwest.

When we finally returned to the troika, dusk was creeping over the countryside. We managed to get two shots on ECO, wide open and the rest was taken



In the vast reaches of Moscow's snow-clad Red Square, Pavel and Laszlo Pal lay out a shot, while their star stands by. At left is Soviet cameraman who was shooting a documentary of the proceedings. It took seven days of negotiating and planning in order to arrive at the three hours of actual shooting of the commercial. The spot was filmed to publicize the Russian Pavilion at EXPO '74 in Spokane, Wash.

with Sun-Guns and dichroic filters for closeups and the long shots were silhouetted against the evening sky. Olga was in a good mood at last. Her tummy full and content, she was smiling. The horses were high-spirited and magnificent and the sleigh colorful and picturesque, bells and all. At the end of the shooting we presented Olga with a Stetson hat and a World's Fair certificate and we all posed for publicity shots. That was that.

We had spent seven days meeting people, trying to reach agreement on the script, negotiating to fulfill the requirements of the USSR Sports Committee, Novosty Press Agency and other officials. We filmed for a total of perhaps three hours. However, it is the end result that is important and let us hope it will justify the means. When the general public sees Olga in the commercial she will smile and look ravishing in her red fox fur coat and only I will remember the sausage, the frozen camera, the dichroic filters and the best painkiller of all, the Russian vodka.

Other producers and film crews assigned to shoot in the Soviet Union will, no doubt, encounter different circumstances and different sets of problems.

Just remember that the so-called "star syndrome" stretches far beyond Hollywood, even as far as Moscow.

Even Olga knows that. ■

At last, happily stuffed with sausages, the tiny Olga smiles the radiant smile which made her the favorite of crowds at the Munich Olympic Games.



SOVIET FILM-MAKING

Continued from Page 921

can audiences have been the touchingly lyrical *BALLAD OF A SOLDIER*, *CRANES ARE FLYING* and the monumental seven-hour-long epic masterpiece, *WAR AND PEACE*.

Now, as I am about to land at Moscow airport, I find myself thinking about this rich history of cinematic achievement and I am looking forward to my first visit to the Soviet Union and the opportunity of meeting many of its film-makers personally.

At the Moscow airport I am greeted by Dr. Michael Z. Wysotsky, Deputy Technical Director and Head of Engineering Research at Mosfilm Studios, and Miss Isabella G. Epstein, Editor in Chief, Secretariat of the International Moscow Film Festival. Both of these kind people speak excellent English and they whisk me through the Immigration formalities in quick time and with absolutely no red tape.

During the drive into the city, Dr. Wysotsky tells me that he has been to Hollywood and he inquires about some of the technicians he met during that visit, as well as about such Hollywoodians as Sidney Solow, Wilton Holm and Milton Forman, all of whom were part of an SMPTE technical delegation that visited the USSR in 1966.

I get my first glimpse of Moscow, a stately gray city with wide boulevards which are mercifully free of automobiles, except for a few taxis and official limousines. Our first stop is at the Dom Kino (House of Cinema), the modern building which houses the Association of Film Makers of the USSR and I am introduced to Mr. A. Karaganov,

through whose kind offices my invitation had been extended.

I also meet my interpreter, a young man named Vladimir Kozlovsky, whom everybody seems to call by his diminutive name, Volodya. He speaks almost perfect English, larded with occasional amusing Americanisms, picked up, no doubt, while interpreting for other Americans. He is to stay with me constantly, sometimes putting in a 14-hour day when there is an evening event to be attended. He also keeps me from starving to death in the restaurants, since my knowledge of Russian is limited to *da* and *nyet*.

My hosts have very kindly prepared in advance a detailed itinerary and agenda of visits to studios and institutes, so that my time in their country will be spent to best advantage. First on the list is a visit to the State Institute of Cinematography—the first, largest and most famous film school in the world.

The Institute is headquartered in a somber, venerable building, the stairways of which are well-worn by the footsteps of the thousands of film-makers who have learned their craft here. As I tour the establishment, I see students at work learning the various disciplines of the Cinema. They appear to be very dedicated and deadly serious about what they are studying. There is none of the genial horseplay characteristic of American film schools—nor are there any *dilettantes* present simply because they happen to be “into” film-making this season.

Later, I meet in a conference room with Mr. Vitaly Jdan, the Rector of the Institute and a group of distinguished faculty members, including Dr. Eusei A. Yofis, Dr. Anatol Golovnja and Mr.

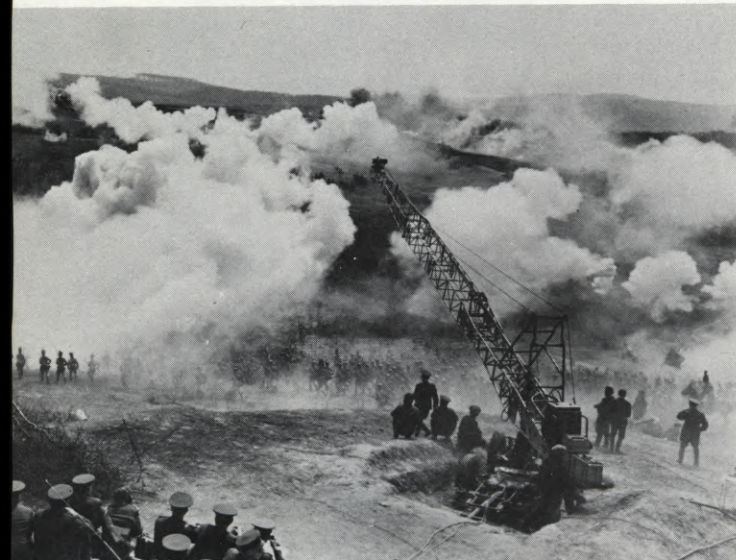
Leonid Kosmatov, among others. The latter gentleman, I am told, was one of the pioneer cinematographers of the Russian film industry. A very gracious and charming man, regarded as a kind of dean of cinematographers in the USSR, he tells me of his visit to Hollywood years ago and asks me to make sure to extend his warm personal regards to James Wong Howe, ASC, with whom he became close friends during that visit.

The Institute trains actors, directors, cinematographers, screenwriters, art directors, film critics and historians, and “economists” (those especially dedicated to the physical and fiscal organization of motion picture production and distribution).

“This Institute envisions training people in all of the creative professions of film-making,” Mr. Jdan tells me, “because the making of films is a collective job. There is a five-year term of study in production techniques and, during that time, each student is expected to make four full-scale feature films. Every film they make is the joint endeavor of a student director and a student cameraman. They work from scripts written by student scriptwriters and student actors do the acting. Students of the economics department function as producers.

“Students who wish to study at the Institute—and there are a great many who apply each year—must pass a creative competition before being selected to take the actual entrance examinations. In the actors’ department, this involves reciting prose or poetry or playing a scene. The would-be actors are also given screen tests to see how well they will photograph. Those who aspire to enter the directors’ department must

Two of the giant remotely-controlled camera cranes developed in the Soviet Union. (LEFT) Crane with boom arm 17 meters long, shown during filming of Borodin Battle sequence for “WAR AND PEACE”, produced by Mosfilm Studios. (RIGHT) Crane with boom 10.5 meters in length shown in use at Lenfilm Studios, Leningrad. Automated cameras are controlled by operators watching TV monitors.



submit some piece of creative work—a story, a work of graphic art, or perhaps a piece of critical analyses. Students eager to enter the other departments submit similar evidences of potential talent. In addition, all of them must submit a written essay telling why they wish to enter the Institute.

"After all of this has been completed, there is a roundtable discussion and preliminary interview with each of those who seem to have a chance of passing the advanced exams for admission. This is for the purpose of finding out what their personal tastes and ambitions are. We pay attention to their personal views on works of art, literature and films. We are interested in their artistic interests and general cultural backgrounds. Those who are sufficiently impressive during this interview are then permitted to take the advanced entrance examinations.

"In this Institute, which was founded in 1919, all of the great masters of the Soviet Cinema have taught and been taught—such people as Lev Kuleshov, Sergei Eisenstein, Vsevolod I. Pudovkin and Alexander Dovgenko. At the present time, Sergei Guerassimov is in charge of our directors' department and all workshops that deal in direction. E. Dzigan, Alexander Stolper and Igor Talankin teach direction. The faculty of camera includes E. Yofis, A. Golovnya and L. Kosmatov (all of whom are here with us today), among others. Boris Babotchkina and Sergei Bondarchuk train actors.

"We train here personnel for all of the Soviet Republics. Top professionals from our industry head special workshops that train students to be sent to these Republics. There is an educational film studio at this Institute which, each year, produces 200 one-reel short films. Also, a few years ago, we established a special workshop which trains documentary film-makers—film journalists, you might say—and these students receive training as journalists, directors and cameramen—all at the same time. Anatol Koloshin, who is with us here today, is in charge of this documentary program, and perhaps he would like to tell you about the functions of this workshop."

Mr. Koloshin, who is a director-cameraman at the Central Studio for Documentary Films, as well as a Professor of the WGIK (Film High School), tells me: "The student in the documentary-film journalism workshop is a complete film-maker. He is his own script-writer, his own director, his own cameraman. He even does his own music and sound, in many cases—everything. This is especially necessary for the student who will work in television and

in foreign countries. When he completes his training, he will be able to do everything for himself—and, I hope, with some quality, too."

Since many of the readers of *American Cinematographer* are primarily interested in camera, I ask how cameramen are trained at the Institute. Mr. Jdan refers that question to Prof. Yofis, head of the department of film technology, who says: "In addition to what has already been said here about cameramen, let me tell you about how we train them professionally. We don't give them the opportunity to make feature films with their cameras during the first year. They just master technology, the technique of shooting. They get acquainted with the cameras, while, at the same time, they are being trained in the technology of photography and photochemistry. In the way of creative subjects, there is still photography and its composition, which are very interesting because they are preliminary to the composition of motion pictures. We attach great importance to this.

"In the second year of studies, they get down to doing creative projects. They are assigned several works to be made without a director. The cameraman himself organizes the project and acts as the director, to some extent, in order to be able to understand the specificity of the director's creative work.

"Meanwhile, they are also working in the lighting lab. In the second half of the second year, they begin working with directors. As the Rector has said, they establish creative friendships, find common viewpoints with each other—and so they work together up through their graduation projects. We've got three camera workshops. Prof. B. Voltchek is in charge of one. Prof. A. Galperin is in charge of a second, and I am in charge of the third. Prof. A. Golovnja is the head man in the field. He was a cameraman when the masterpieces of Pudovkin were being made. He is our chief.

"The training of the cameraman is very comprehensive. He is taught everything about equipment, film stocks, lighting and the techniques of actual shooting. As a Director of Photography (or 'Director Cameraman', as we say in Russian) he is a participant in the staging of the action. He is responsible for the quality of the photography, for selecting locations, sets, costumes and makeup. He participates in all of that. If he is a documentary cameraman, he must also be a journalist with camera in hand.

"During the first year, professors, who are experts in the field, teach the

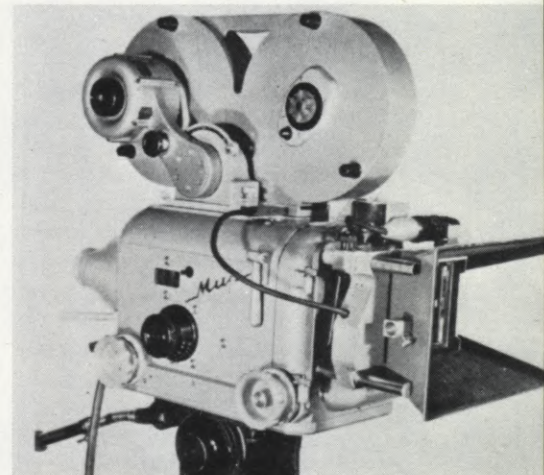
cinematography students everything about equipment, optics and lighting techniques. Beginning with the second year, the student works under the leadership of a master, a highly experienced cameraman, to shoot educational sketches, mainly for the purpose of studying lighting techniques, on location and on the sound stages. He is given sketches to shoot which are taken from scripts that have already been produced, and he shoots four or five of these, which run about 300 meters long in 35mm film. The first two sketches are shot in black and white, and the others in color.

"Meanwhile, directing students are receiving training along parallel lines. Finally, a camera student and a directing student work together on sketches, followed by more ambitious projects. They continue to hear lectures on camera mastership, as well as artistic theory.

"After graduation, the former student goes to work in a studio, depending upon his speciality. Some work on feature films; others on documentary, scientific or educational films. Some get jobs in television, because now we train cameramen to handle electronic, as well as film cameras. It does not make any difference what technique is used to produce the images."

After this conference, I am shown several films made by students of the Institute and I am very much impressed with the careful thought that has gone into them, their technical finish and overall professionalism. One that I like especially well has to do with the daily life and training of a young girl gymnast. It is an incisive cinematic character study—exceptionally well made in all technical aspects.

35mm reflex camera, Type 3KSS MIR. Film gate apertures 16 x 22mm and 18.7 x 22mm. 24 frames per second. Lens range: 18mm to 300mm and anamorphic 30mm-to-125mm. Zoom lenses to 10-to-1 ratio.



On the following day I pay a visit to Mosfilm Studios, which is, this year, celebrating its 50th Anniversary, a huge production complex in the grand manner of such classic studios as UFA, MGM (in its heyday) and Studios Hamburg. Here I am reunited with Dr. Wysotsky, Deputy Technical Director and Head of Engineering Research for Mosfilm, who is kind enough to give me an extensive conducted tour of the studio facilities.

In the main foyer there is a chart which traces day-by-day the progress of each film in production. For each picture there is a figure for footage scheduled to be shot the previous day, followed by another figure indicating the footage *actually* shot that day.

We visit sound stages where filming is in progress, the backlot (where a World War II epic is being shot), engineering shops, the camera maintenance shop, art department, sound recording department, set construction docks and music scoring stage, where a huge orchestra is rehearsing.

I am taken to meet Prof. Boris N. Konoplyov, who, in addition to being Chief Engineer for Mosfilm Studios, holds the Chair of Economics at the State Institute of Cinematography and is Chairman of the Section of Cine-technology, Association of Film Makers of the USSR. In his office he has a model of the studio complex and uses it to point out to me proposed new stages and other facilities about to be built.

We then join Mr. Nickolai A. Ivanov, Deputy General Director of Mosfilm, for lunch in a private dining room. The menu includes vodka and caviar, and it is here that I discover that the stories I've heard about Russians chug-a-lugging whole tumblers of straight vodka are not myths. When a toast is proposed to

Soviet-American friendship, I have no choice but to down a huge glass of the stuff, fully expecting my esophagus to get burned out by the roots. I am amazed to find that the local vodka is very mild and mellow, as compared to the firewater that passes for vodka in America. It goes down all too easily!

Luncheon talk is devoted to comparisons of Russians and American production methods and equipment. My hosts are eager to hear about anything that is new in the American film industry and they bring me up to date on recent progress made in their industry.

After lunch, it's movie time. I am shown a stunning short film called "SPACE, EARTH, SPACE", which depicts the creation of the Universe in terms of strikingly beautiful visual images produced by a unique chemical special effects process developed at the studio. It is a mind-blowing experience that is comparable in audience impact to the stunning, slit-scan-created "Star-gate" sequence in "2001: A SPACE ODYSSEY"—although the methodology is totally different.

This is followed by a screening of "SOLARIS", an ambitious science-fantasy feature produced at Mosfilm. There are, of course, no English titles, but Volodya does a superhuman job of providing a running English translation of the dialogue as the film is shown. "SOLARIS" has been produced with great technical skill, but it is rife with obscure symbolism and esoteric philosophy—much of which, I'm afraid, escapes me.

LENINGRAD

We arrive by air at this attractive city (formerly St. Petersburg and the capital of Russia in czarist times) on a Sunday, so there is nothing for it but a bit of

sight-seeing at the fabulous Hermitage Museum. Housed in what used to be the Palace of the Czars is a vast collection of art masterpieces, reportedly more than 2,000,000 items. Our guide tells me that if you were to spend only one second of time on each one, it would take three months to see everything. A more generous allowance of one minute per exhibit would require 18 years for the full tour. Needless to say, with only a few hours available, we are able to see only a fraction of the displays, but they are most impressive.

The next day I pay a visit to Lenfilm Studios, where I am welcomed by Mr. I.N. Kiselev (Manager of the studio) and Mr. K.P. Sadovnikov (Vice-manager).

Mr. Kiselev very kindly conducts me on a tour of the studio, which is not unlike Mosfilm in character and facilities, but on a somewhat smaller scale.

Among the many fine films that have been made here are the magnificent screen versions of Shakespeare's "HAMLET" and "KING LEAR". I can truthfully tell my host that of the several dozen versions of "HAMLET" I have seen on stage and screen over the years, the Lenfilm production, in my opinion, is the finest of all.

"Our government has recently made the decision to build new Studios Lenfilm about 20 kilometers from Leningrad," Mr. Kiselev tells me. "Already they have built several new sound stages, a film processing laboratory and a workshop for set construction. In the future, all of our production will move there. At present there are 2,400 persons working at the studio. Every year we produce 16 full-length feature films, eight to ten features for television and dubbed versions of 20 more films. Our laboratories also process about 20,000,000 meters of film annually.

"We have five sound stages in the central area of the studio and two more in the secondary area. The cameras used here are mainly of Soviet design and manufacture, but we do have some French, German and American cameras. We have, I believe, about 27 studio cameras and 150 more cameras for location and special effects work. Our lighting equipment is primarily of our own manufacture and is made in Moscow, Kiev and several other cities. We use incandescent lamps, arcs and some tungsten-halogen lamps."

During a break in our tour, I am shown an extraordinary short film. It depicts someone walking into the ground floor entrance of a multi-storied building, after which the camera travels slowly and steadily up the exterior facade of the building and soars through an open window just as the person

At Studio Dovgenko in Kiev, a small museum is devoted to the artifacts and memory of Alexander Dovgenko, the great Ukrainian film director. On the walls can be seen storyboards and scene sketches from some of his films.



previously seen below enters the room. The movement is smooth as silk and precisely framed throughout the shot.

I am told that this stunning shot was made with Lenfilm's giant, remotely controlled crane. It has a 45-foot boom arm, at the end of which is a fully automated camera, sans operator, which carries a video viewfinder that permits the camera to be controlled by watching a TV monitor. An even larger crane of the same type, with a boom arm almost 60 feet long, exists at Mosfilm studios and was used to shoot the sweeping battle sequences for "WAR AND PEACE".

When I ask for a bit more information about this crane, Mr. Kiselev says: "It was developed over the past several years. You have just seen footage shot with the 35mm model, but we are developing one to hold a 70mm remotely controlled camera and expect to have it in operation soon, not only for location shooting, but for filming on the sound stages, as well."

I ask about the lenses used at the studio and he says: "We use prime lenses ranging from 18mm to 500mm. However, recently, as everyone knows, there has been great interest in zoom lenses, and we have one that is a



Main building of the Popular Science Film Studios "Kiewnautschfilm" in Kiev, a veritable wonderland of a place, devoted to the making of films which depict the achievements of science in terms clear enough to inform, and fascinate, general audiences. Many of these films are shown in school and on television.

10-to-1. Most of these lenses are domestically produced—designed and manufactured right here in Leningrad, as a matter of fact. Our tests show that they are on a par with the best foreign-made lenses."

I ask the inevitable question about whether any 16mm or Super-16 is shot in the studio, and I'm told: "Only recently have we made an experimental film in 16mm, because, up until now, we have not found 16mm feature production to be practical. However, there is a certain amount of interest in pop-

ularizing 16mm, because it is technologically good and is advantageous from the economical standpoint. Data on our experimental work with 16mm have been submitted to the USSR State Committee on Cinematography, which will decide how widely we will use 16mm technology to produce feature films for TV. If there is a positive decision, the Super-16 format will be very important for us, because it is a giant step forward compared to previous formats."

Continued on Page 982

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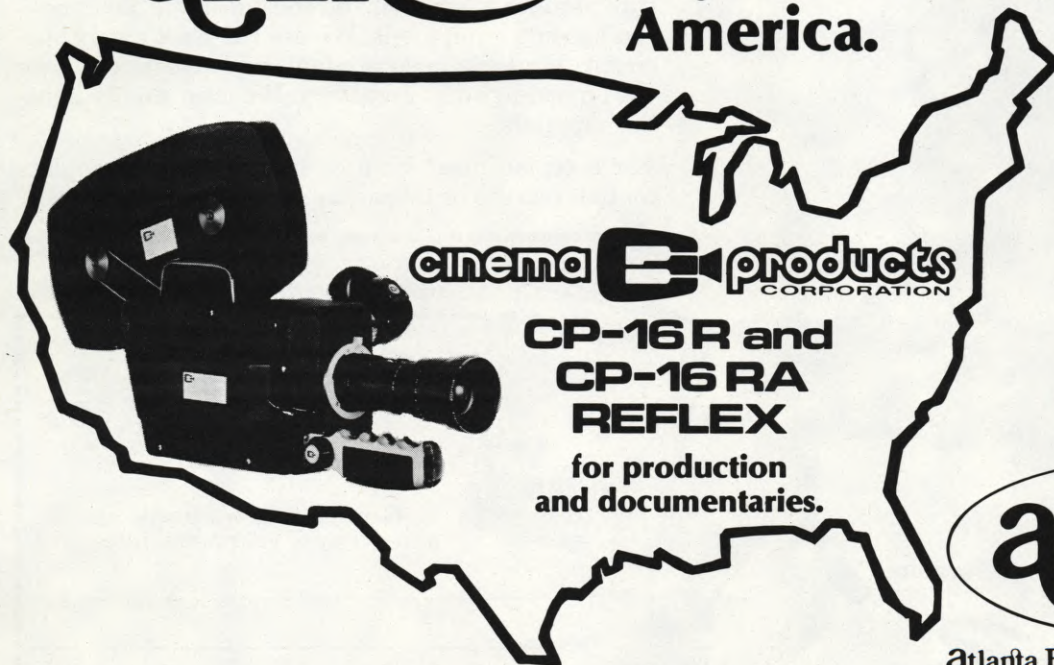
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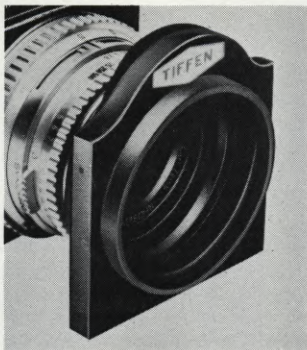
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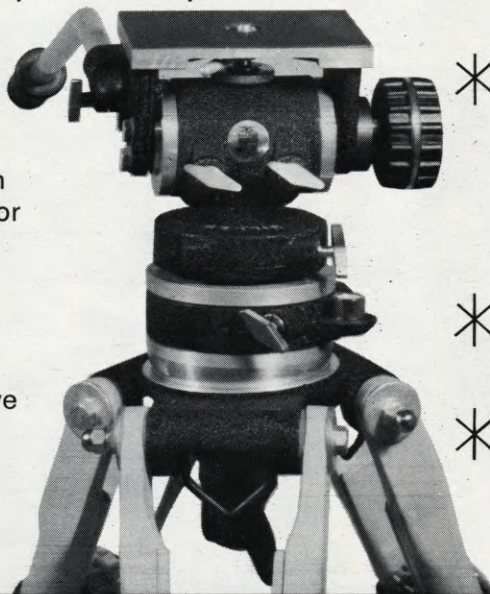
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HISTORY OF THE MOSFILM STUDIOS

Moscow's famed grand old studio, celebrating its 50th Anniversary this year, has been the birthplace of many memorable screen epics

The foundation of Mosfilm Studios took place after the October Revolution on the site of the old Moscow Motion Picture Enterprises (some very old stages built in the early days of silent movies).

The production of a first feature motion picture ("HIGH UP ON THE WINGS") was completed in January 24th, 1924. This date was assumed as the foundation date of Mosfilm studios.

Then in 1927, on new ground in the district of Lenin Hills, was started, and by 1930 completed, the construction of four new stages for the production of silent feature films.

Later on, with the arrival of sound, all the necessary modifications were introduced for synchronous shooting

and, in 1937, the first colour film was released with all the required modifications and developments for colour cinematography. At that time the production capacity of the studio was 10 to 12 features per year.

After World War II the studio was completely reconstructed and several new sound stages were added to increase the production capacity to 50 and more features per year. During the reconstruction period, new systems of cinematography were introduced: wide-screen anamorphic, 70mm cinematography, stereophonic sound, magnetic sound recording, stereoscopic cinematography and last, but not least, the poly-screen vario-scope system.

By now the reconstruction and mod-

ernization of the Mosfilm studios has been almost completed. However, a few more new sound stages are still to be built to satisfy the production requirements.

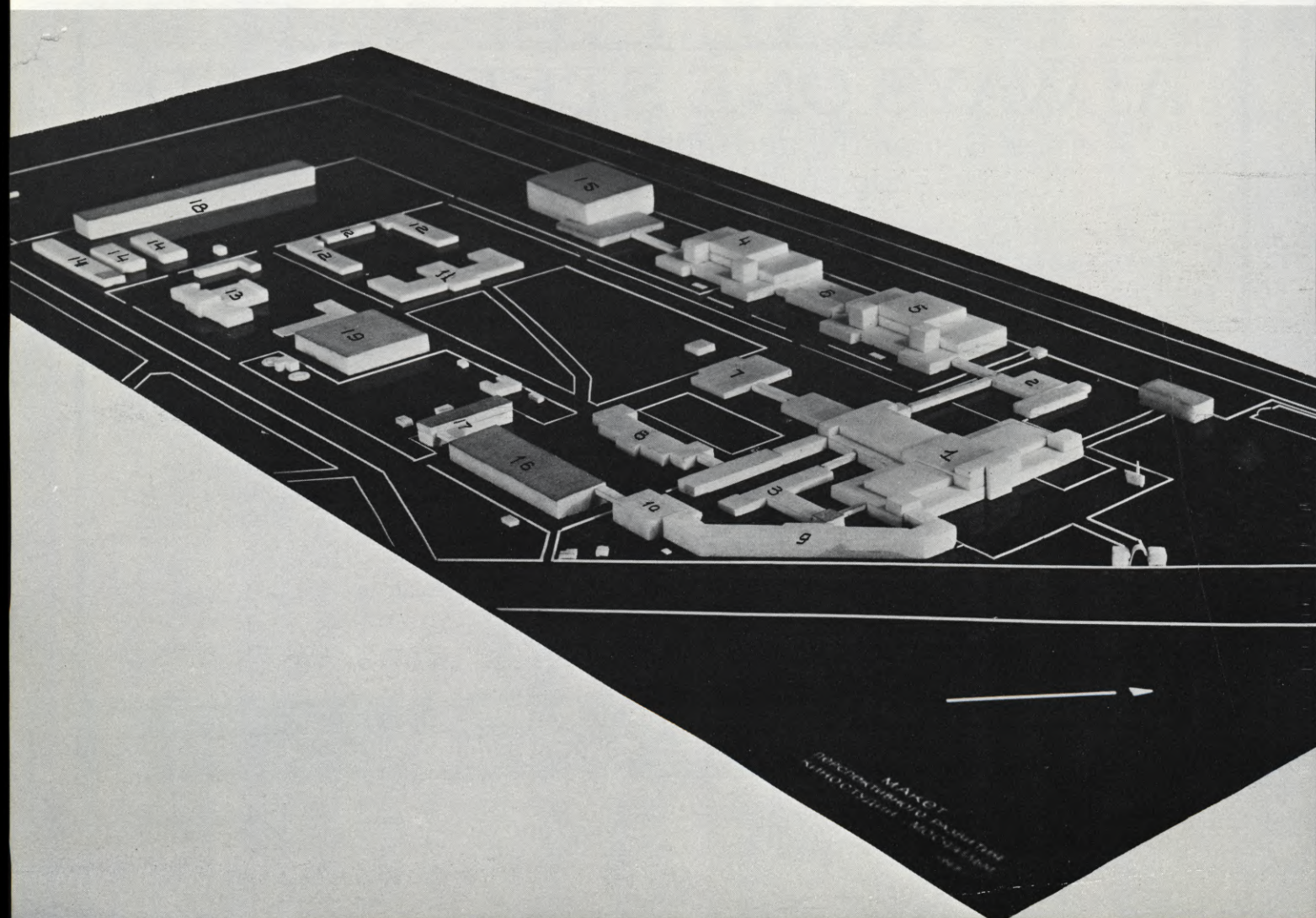
The entire area of the studio was increased by 3.5 times, as compared to the original site and now equals about 50 hectares, including the back lot for exterior shooting.

There are 13 sound stages at the Mosfilm Studios with the total shooting area up to 15,000 square meters.

For more efficient operation, the studio was divided into several creative units, each making 6-7 features per year; one of these units produces only TV films.

5,000 persons, including technicians

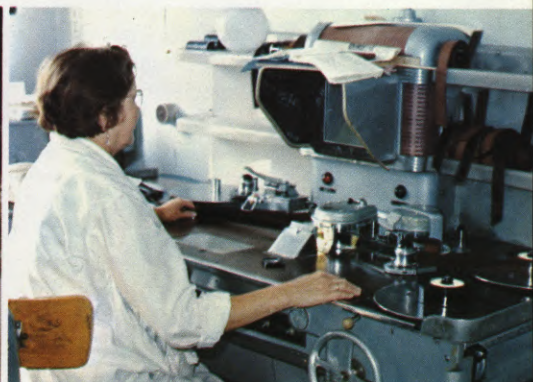
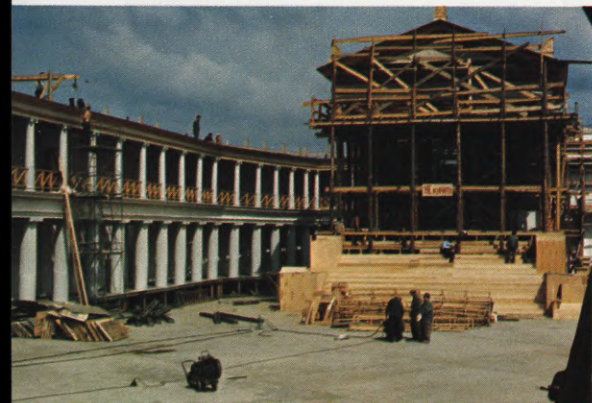
A model showing the general layout of the Mosfilm Studios complex in Moscow. 1. The main building, which houses four sound stages; 2. The mechanical shop; 3. Power substation; 4. and 5. Two new buildings built after World War II, with three stages in each and a power supply station (6.); 7. A building with three small-size sound stages; 8. Sound department, with four studios for post-synchronization, sound effects recording and sound re-recording; 9. Production building; 10. A large multi-purpose theatre of 1,000-seat capacity for mono- and stereophonic sound re-recording and preview of films in various formats, music recording (big orchestras, chorus, etc.); 11. Set construction complex; 12. Storehouses for the storage of film stock, prefabricated set parts, etc.; 13. Film processing laboratory; 14. Transport services. In the center an exterior lot is situated and, to the right of the main building, a large fruit garden with a pond. Planned for the future are additional buildings (shown here with gray roofs); 15. Auxiliary sound studios; 16. Engineering research laboratories; 17. New storehouses; 18. A new building for props and costumes; New laboratory with the latest control equipment.





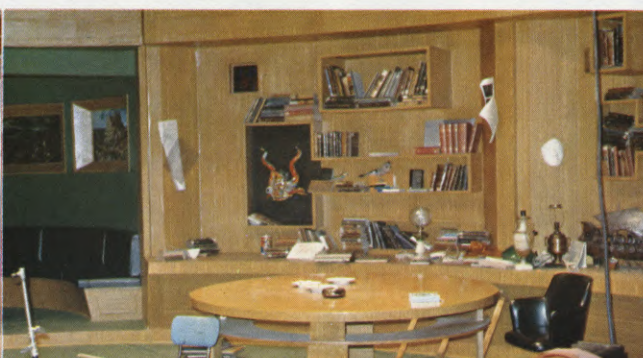
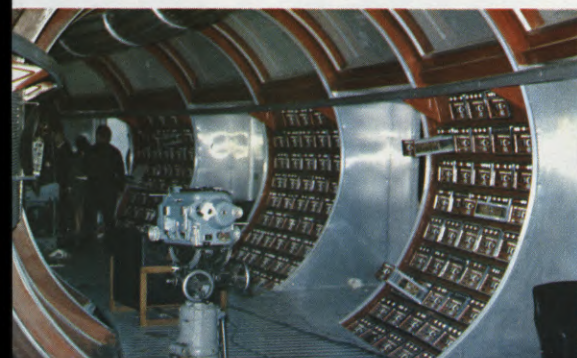
(LEFT) War Memorial at the entrance to the Mosfilm Studios in Moscow. (CENTER) Mosfilm from the inside looking out. (RIGHT) Mosfilm's 1,000-seat multi-purpose theatre used for mono- and stereophonic sound recording, music recording (big orchestras, choruses, etc.) and for the preview of films in a variety of different formats.

(LEFT) A gigantic set under construction on the Mosfilm "back lot". (CENTER) Exterior shooting of a war drama. (RIGHT) The atrium of a Roman house used as the setting for a period film. While the tendency in many countries is toward almost exclusive shooting on location (because of high studio overhead costs), many of the more important films in Russia are still made in the studios.



(LEFT) The camera maintenance department at Mosfilm Studios. (CENTER) Cameraman lines up to shoot a "traveling" shot in an automobile, photographed in front of a screen to permit the use of an unusual infrared matting process. (RIGHT) Film cutter using horizontal editing console. This is one of several types of editing equipment utilized in the USSR.

Three sets from the Soviet science-fiction fantasy, "SOLARIS". This ambitious production, which has been shown widely at film festivals, was photographed in the 35mm anamorphic format, rather than the 70mm format which, in the USSR, is usually used for major productions. It utilized unique chemically created special effects to lend an "other-worldly" feel to the film.





Separate film strips arranged in a multiple synchronizer for the cutting of a multi-image film. The Varioscopic process, as developed at Mosfilm, permits several images which are inter-related dramatically, to be presented simultaneously in varying shapes upon a 70mm (5-perforation) frame, thus permitting a wide variety of creative possibilities.

and creative workers, are on the staff of the Mosfilm Studios working in close cooperation, with their efforts directed towards development and practical utilization of modern methods of motion picture production.

The Motion Picture Actors' Studio is also on the Mosfilm lot. The actors of this studio have at their disposal a theatre with the capacity of 1,200 seats

where they can have necessary training and rehearsals, as well as give dramatic performances for general audiences.

Mosfilm Studios is governed by its General Director and his three Deputies (Technical Director, Production and Financial Managers).

The activities of different departments and workshops of Mosfilm contribute to the film production and

satisfy all technical needs of creative units. The above are: camera equipment department, with a big and well-equipped repair shop and a control laboratory for the necessary measurements and adjustments of motion picture cameras and lenses and a special laboratory manufacturing different types of camera filters.

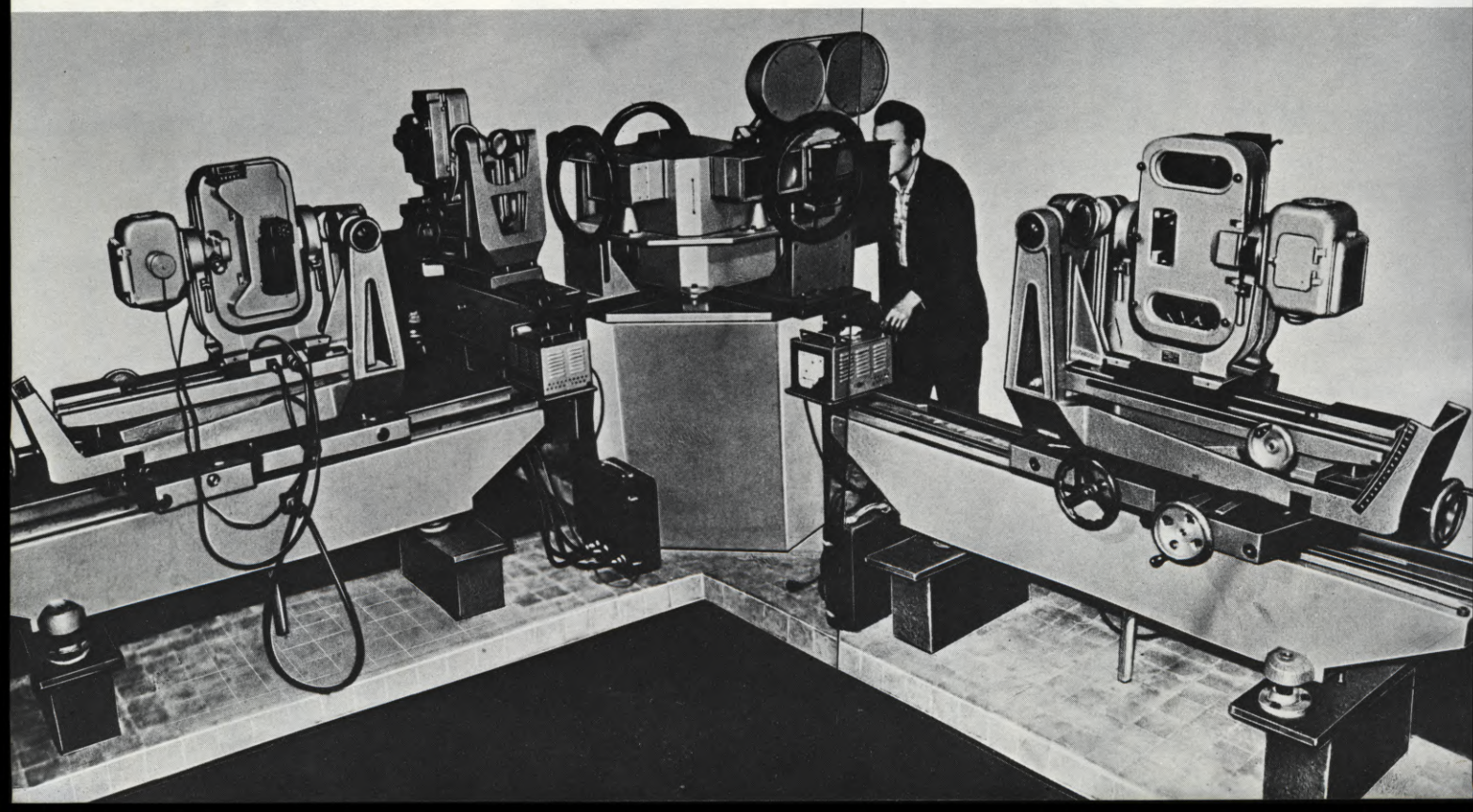
The sound recording department uses for original recording 6.25 portable magnetic tape recorders of Soviet design, as well as Perfectone, Nagra IV-L and similar equipment. Music scoring and mixing are done on stationary 35mm magnetic recording equipment of Soviet manufacture.

The special effects department has several optical printers for such effects as fades, dissolves, superimpositions, etc., for 70mm and 35mm films.

A makeup laboratory manufactures colour and plastic make-up not only for Mosfilm, but also for all other studios of the USSR, as well as for dramatic theatres and television.

A three-story building contains all the necessary workshops for set construction (carpenters', plastic moulding, props, etc.). The largest and the most impressive sets were built for the "WAR AND PEACE" production that won an Academy Award "Oscar" as the best foreign film of 1970. It is worthwhile to mention that for battle scenes in the above production a special camera crane had been built with a jib arm of 17 meters long. A remotely controlled camera mounted on the crane could per-

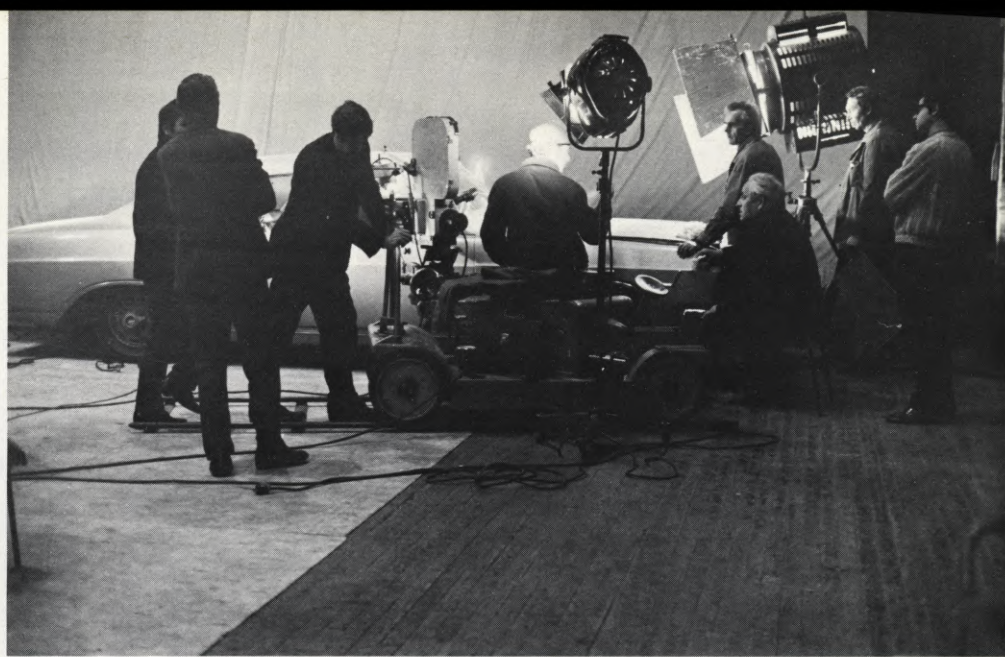
The "70-TM" triple-head optical printer at Mosfilm has been designed to work exclusively with the 70mm format, both black and white and color. It employs three single-frame projectors and a "70-KCK" camera. The machine has tremendous versatility, permitting the execution of an almost unlimited range of special effects. The machine has a control panel and a programming device which allows it to perform a number of operations in accordance with a pre-set programme.



form the panning in a circumference of 360°. The camera was equipped with a TV viewfinder, allowing the film director to watch the action scenes on the monitor screen.

A big film-processing laboratory has been equipped, in addition to standard developing machines, with a complete line of contact and optical printers for printing all kinds of 70mm and 35mm films (from 70mm to wide-screen anamorphic and 1:1.37; from wide-screen anamorphic to 70mm, etc.).

Mosfilm also has a lighting equipment department, a machine shop, film editing rooms, set and costume designers' rooms, make-up rooms, etc. The studio has its own museum and a big



Lining up for a process shot utilizing the unique infrared matting system employed in Soviet studios. Since Mosfilm studio facilities were reconstructed, following World War II, the studio has reached a production capacity of 50 or more features annually, and expansion plans now on the drawing board should extend that capacity considerably.

The general layout of the Mosfilm studios is given on fig. 1.

1. The main building with four sound stages
2. Mechanical workshop
3. Power substation
- 4, 5. Two new blocks built after World War II and locating three sound stages, each with a power supply station (6) in-between
7. A building with three smaller sound stages
8. Sound department with four studios for dubbing, mixing and recording sound effects
9. A production units building
10. A big multi-purpose theatre with the capacity of 1,000 seats for mono- and stereophonic sound

mixing (re-recording), scoring of big orchestras, choruses, etc. and projection of films in various formats

11. Set construction complex
12. Storehouses for the storage of film stock, prefabricated set parts, etc.
13. Film-processing laboratory
14. Transport services

In the center of the Mosfilm territory is located an exterior shooting lot and, to the right of the main building, a big cherry orchard and a water pool.

The future increase of the production scale of the studios will require the construction of new sound stages (15), auxiliary studios for sound recording

Continued on Page 975

Studio workers put finishing touches on a new set being readied for shooting. The studio has its own museum and a large library containing 80,000 volumes of books and magazines. The museum and library function as elements of the studio's research department which works closely with its set designing bureau.



ВЫПОЛНЕНИЕ РАБОТ НА 27 СЕНТЯБРЯ 1957		СН. ДЕНЬ	С НАЧАЛОМ
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МАЧЕХА	В. ПУШКИН, К. БЕЛЫЙ	ВЕРЕСА	7 108 4 71
УЧАННЕ ДОКТОРА КВЕНСА	В. ПУШКИН, К. БЕЛЫЙ		
ПРАВО НА ПРЫМОК	В. БИКИН, С. БЕЛЫЙ		2 700 26 68
МО СВОБЕДНОМУ НЕЛАННО	Т. ПУШКИН, К. БЕЛЫЙ	2 0	4 8 20 12 21 30
МНОГО ШУМА ИЗ ПИЧЕГО	С. АКИШИН, К. ТАКОВ	ЗВЕЗДНЫЙ	1 776 16 40
ЧЕТВЕРТЫЙ	В. ПУШКИН, К. БЕЛЫЙ	5 0	5 0 18 12 22 25
ДАЧА	В. БИКИН, А. КИРИЛЛОВ	ВЕРЕСА	1 08 5 9
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ШАПОВАЛОВ Т. П.	В. ПУШКИН, К. БЕЛЫЙ	ЗВЕЗДНЫЙ	1 258 12 39
ЕМНА-АТАМАН	В. БИКИН, С. БЕЛЫЙ	ЗВЕЗДНЫЙ	9 36 10 21
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В НА ГРЕЙНОЙ ЗЕМЛЕ	В. ПУШКИН, К. БЕЛЫЙ	ВЕРЕСА	5 419 55 03
ВЕНЕЦ ПИРОМАНОВ	В. ПУШКИН, К. БЕЛЫЙ	ВЕРЕСА	5 366 55 97
ДОУЧЕВ, ШКОЛЬНОГО УЧИТЕЛЯ	В. ПУШКИН, К. БЕЛЫЙ	5 0	5 0 18 7 6 0 4
СТРОЮ ДОМ	В. ПУШКИН, К. БЕЛЫЙ	2 5	3 0 12 14 14 4 8
БЕРЕГА	В. ПУШКИН, К. БЕЛЫЙ	ЗВЕЗДНЫЙ	3 25 3 55
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НА ТИХОМ ОНЕДАНЕ	В. ПУШКИН, К. БЕЛЫЙ		2 67
ВЕНЕЦ ПИРОМАНОВ	В. ПУШКИН, К. БЕЛЫЙ		2 360 24 11
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ВЕСНА ПИРОМАНОВ	В. ПУШКИН, К. БЕЛЫЙ		3 50 3 51
ВСЕГО ПО СТУДИИ		2 69	3 18

Mosfilm production chart lists all films currently shooting. Two columns at right compare footage planned with footage actually shot each day.

library containing 80,000 volumes of books and magazines. The museum and the library are part of the research department.

The description of Mosfilm would be incomplete without mentioning eight scientific research laboratories working on the problems of modernizing motion picture equipment and technology in the branches of sound, lighting, power supply, cameras, set construction, pyrotechnics and makeup. These also include a set-designing bureau.

FILMING "PEGGY FLEMING VISITS THE SOVIET UNION"

A half-Soviet/half-American motion picture crew, working together in the USSR to film a television special, discover that the international communication of cinema can overcome even serious language barriers

By **STERLING JOHNSON**

Director

LENINGRAD—The dead of winter, temperature zero, darkness falling rapidly, trying to play hurry-up with an American/Soviet crew working together for the first time. A nightmare experience? No. All of us at Bob Banner Associates have warm memories of that frozen visit to the Soviet Union and the human moments that we experienced during the filming of our show.

I have had the pleasure of working with Bob Banner Associates since 1970 on a variety of projects including directing three Peggy Fleming Specials—"PEGGY FLEMING AT SUN VALLEY", "PEGGY FLEMING—TO EUROPE WITH LOVE", and most recently "PEGGY FLEMING VISITS THE SOVIET UNION" which aired on NBC-TV October 28, 1973 and will be seen again on NBC, September 5, 1974.

As the titles indicate these shows are

location-oriented and present a variety of unique problems, especially when working in foreign countries.

We have labled our shows as "entertainment documentaries". We entertain through Peggy's skating, music, comedy and a variety of guest artists. We blend these elements with a number of locations to obtain a flavor of the various areas that we are visiting.

The guest artists on "PEGGY FLEMING VISITS THE SOVIET UNION" were supplied by the Soviet Union and included The Kirov Ballet, The Moscow Circus, Ludmilla Senchina, The Moscow Ice Ballet, The Obratzova Puppet Theatre and the Andreev Balalaika Orchestra.

It was a hell of a job trying to bring these elements together. Producer Dick Foster and Associate Producer Bob Bagley were in the Soviet Union one month

prior to our arrival, lining up locations and arranging for guest artists on the show.

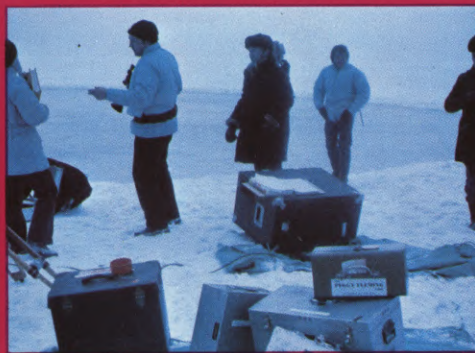
Peggy, the crew, and I were content to sit here in the United States waiting for our visas, doing what rehearsing we could, studying Russian culture, listening to Russian music and surveying the Soviet Union in picture books.

On February 28, 1973 we took off for the Soviet Union. Our concept for the film: one American performer and a handful of American film-makers visit the Soviet Union, find who and what they can, get it on film and make it entertaining.

On the evening that we arrived in the Soviet Union we were informed by Dick Foster that our first shoot had been scheduled two days later with the Andreev Balalaika Orchestra in Leningrad. I said "Great, the first thing in the



(LEFT) American ice skating star, Peggy Fleming, performs at the Moscow circus in one of the many production numbers filmed in the USSR for NBC-TV network special, "PEGGY FLEMING VISITS THE SOVIET UNION". (CENTER) Crew and equipment prior to shooting a number on the frozen (and freezing!) ice of the Bay of Finland near Leningrad. Shooting was done with the temperature at 18 degrees below zero—and a stiff wind blowing. (RIGHT) The "star of the show", radiant Peggy Fleming, had appeared in Russia during her amateur days and the Russians had not forgotten her.

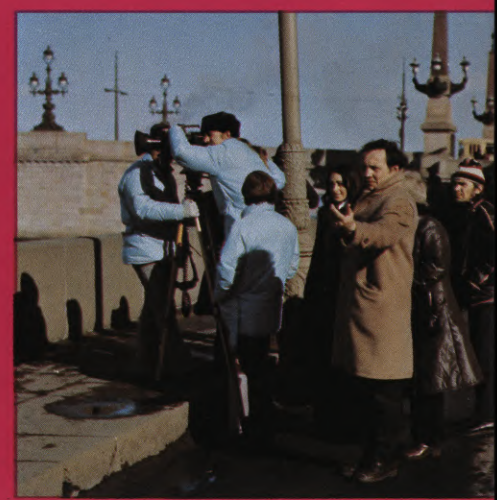
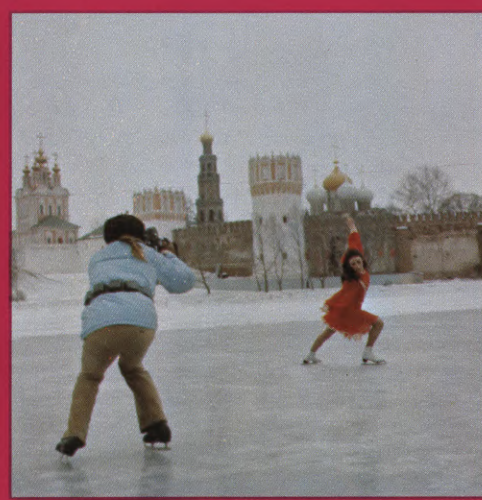


(LEFT) A cameraman sets up his Eclair NPR camera prior to shooting a sequence at the Moscow circus. (CENTER) Cameraman Flemming Olsen takes a reading from the bland face of a giant puppet, while Peggy Fleming stands by to shoot a sequence with the famous Obratzova Puppets. (RIGHT) Nadia Nicolita slates a scene with clapperboard that carried notations in both Russian and English. The language barrier was a constant problem in such a technical endeavor, but skilled interpreters provided by the Russians helped immensely to keep communications open between the two crews.





(LEFT) Director Sterling Johnson and Cameramen David Ayzavian and Fleming Olsen set up to shoot a scene in Moscow. (CENTER) Interpreter Ina Kolesnikova (back to camera), Leonid Volkov and Director Johnson discuss an upcoming scene. Volkov, from LENFILM Studios in Leningrad, is one of the Soviet Union's top documentary film-makers—a writer, director, producer, cameraman and editor. He provided invaluable technical know-how and assistance. The American crew describes him as "fantastic". Miss Kolesnikova, serving as interpreter, worked tirelessly to maintain communications between the crews.



(LEFT) Cameraman Bob Bagley, the cut-up of the crew, tries on one of Peggy Fleming's wigs, while keeping a protective arm around the star. (CENTER) Cameraman Olsen performs a unique "dolly shot" on ice skates as he follows Peggy around the outdoor rink, while hand-holding the Arriflex-S camera. (RIGHT) Peggy Fleming waits as Fleming Olsen sets up the camera in a Moscow location. Leonid Volkov in the foreground. All in all, the crew shot in a total of sixteen different major locations, in addition to filming atmosphere scenes in many other areas.

(LEFT) Peggy is the focus of attention with a group of Georgian dancers inside the Kremlin walls. (CENTER) The crew prepares to film Peggy outside the Nova Pievichy convent in Moscow. (RIGHT) Olsen zeros in on a shot, while Bagley looks on. "PEGGY FLEMING VISITS THE SOVIET UNION" was filmed in 16mm, using 7252, 7241 and 7242 reversal film stocks. The 16mm format is rarely employed in the Soviet Union, except for news and documentary work. However, they do have processing facilities for 7241 and 7242, which are being used more and more for newsreel filming.





Wearing only her thin skating costume, Peggy Fleming, a real trouper, whirls through a skating number with Moscow's colorful Nova Pievichy convent as a background. The corps de ballet of the Moscow Ice Ballet, asked to participate in such a number, at first refused because of the cold, but later agreed, after seeing to what great lengths the crew went to keep the skaters warm between takes.

morning I would like to survey the location with the crew." Not so easy. The next day was Sunday and there was no way that we could see the facilities. So, on Monday morning, we arrived at the Rehearsal Hall in Leningrad with a half-American/half-Soviet crew, a truckload of lighting equipment, a busload of camera equipment and lots of hope. I soon found that my biggest problem was going to be the language. When you're talking in American slang and film jargon and you're trying to get your point across to a performer or

Russian "complete film-maker", Leonid Volkov, shown at Bay of Finland with Bob Bagley, who seems to be leaning leeward (perhaps from the wind).



cameraman through an interpreter who doesn't have the slightest idea what you're trying to say, you're in big trouble.

We began shooting the orchestra at 12:00 Noon and by 4:00 PM we still had not photographed half of the number. The orchestra had a recording date and had to leave at 6:00 PM on the dot. The process of language translation is very time-consuming and, at this point, I announced that because of the time factor I would use only the American cameramen, Flemming Olsen, Bob Bagley and occasionally myself to finish shooting the number. The Soviets seemed upset and I thought that I had really screwed it up. Later that evening Flemming, Bagley and I had a meeting with Leonid Volkov and the other Russian Cameramen to explain what had happened. Much to our surprise we found that they didn't want to become involved in the actual shooting so rapidly until they observed our style of photography and felt more comfortable. There were many problems that we would all have to overcome. I knew that we had just solved one of those problems.

Peggy's opening number, "Midnight in Moscow" was photographed in the Yubalani Stadium in Leningrad. It was a special performance with the Moscow Ice Ballet, which is the equivalent to our Ice Capades or Ice Follies. Peggy had made some appearances in the Soviet Union during her amateur days and the people certainly hadn't forgotten her. We filmed two live performances—one at 1:00 PM and one at 8:00 PM to standing-room-only crowds of 14,000 people.

We promised the director of the Ice Ballet that we would not stop the show longer than one minute to set up and slate for Peggy's number. It was like being in the starting blocks of the Hundred Yard Dash. During the blackout prior to the number, we dashed to our camera positions; we had five cameras rolling. Associate Producer, Dee Baker and our interpreter, Ina Kolesnikova, rushed onto the ice to slate the cameras. We slated in both English and Russian so that the audience would know what was going on. Dee's slate in English was perfect. However, after Ina's interpretation she got her finger caught in the clapper, which received an ovation from the crowd.

The next shoot was really an American-Soviet effort. We filmed a number to *Swan Lake* with Peggy and Vladimir Luzin, one of the top male skaters in the Soviet Union. We made some outrageous requests to the ice experts in Leningrad and they always came through. For this shoot we had them prepare an ice surface one-half-mile offshore on the frozen Bay of Finland near Leningrad.

Filming on the Bay of Finland is not your normal everyday location. It was 18 degrees below zero and the wind was really howling. There were no such things as heated dressing rooms or hot catered meals. We had a small bus to shelter Peggy and Vladimir in between setups and our catered lunch consisted of frozen bread, meat and cheese, with cold coffee.

During the shooting we had a bus load of spectators, the Corps de Ballet from the Moscow Ice Ballet. We had asked to do a production number with the Corps but they said we were absolutely crazy filming outside in the dead of winter. So, we invited them to observe the filming of *Swan Lake*, be-

(ABOUT THE AUTHOR: STERLING JOHNSON was associated with ABC-TV, Los Angeles, for twelve years, directing both film and video tape. During that time, he directed and photographed "COMING OF THE ROADS", a documentary that won an Emmy Award in 1967. He has worked as a director and/or cameraman on segments of "LAUGH-IN", "GLEN CAMPBELL SHOW", "SMOTHERS BROTHERS COMEDY HOUR", "THE CAROL BURNETT SHOW", and specials featuring such stars as: Frank Sinatra, Perry Como and Andy Williams, as well as numerous commercial, industrial and educational films. He has directed three Peggy Fleming specials and won an Emmy for his direction of "PEGGY FLEMING AT SUN VALLEY" in 1971. He received an Emmy nomination for "PEGGY FLEMING VISITS THE SOVIET UNION". Together with Bob Bagley, he has recently formed a company called "The Weed Patch Camera Club" for the production of TV specials, commercials, industrials and educational films.)

cause we do our damndest to keep the skaters warm. Wraps are kept on until the take has been slated and the moment I call cut, Gordon Brockway, our wardrobe supervisor, is scurrying across the ice with an assortment of coats, hats, gloves, scarves and blankets for Peggy and Vladimir.

As you can imagine, skating costumes are not designed for 18-below weather. The Ice Ballet was impressed by our efforts and agreed to film a skating number on a reflection pond in front of Catherine The Great's Palace in Pushkin Village.

During the first week, things were uncomfortable between the Soviets and the Americans. The language is different, the work habits are different, the pace is different and we both had fears

and apprehensions about each other. We did, however, have one very important thing in common: the mutual pride we had for our show. While working toward this common goal, tensions began to relax and understanding grew and, of course, there developed the little things that meant so much. For instance, at the end of the day on Finland Bay we were all freezing our butts off when one of the Russian grips walked up. He could not speak a word of English nor could I speak a word of Russian. He stood there staring at me for a moment and then whipped open his big black coat and inside was stashed a bottle of vodka. There are times when you don't have to speak the language to get your point across.

The morning that we arrived at Push-

kin Village to shoot the production number with the Ice Ballet we discovered that the ice surface that had been cleared was 20 feet too short to accommodate our cast of 19 skaters including Peggy. The ice men did not have enough manpower to clear the snow in time to shoot. Everyone in the crew—whether producer, Director of Photography, interpreter or grip, became snow-shovelers and ice-scrapers. Soviets and Americans working side by side. When the cast bus arrived, we were ready to roll.

The Russian skaters were still a little apprehensive about filming outside. The
Continued on Page 965

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March 27, 1974

Mr. Herb A. Lightman
American Cinematographer
Hollywood, California

David Ayvazian, who was my assistant on "Peggy Fleming Visits the Soviet Union", was killed in that horrible plane accident on March 13, 1974, where a whole Wolper crew perished.

In my deep sorrow over his death, I wish to express my warmest feelings for David, who was a warm and wonderful friend and a hard working and progressive film man.

David's presence in Russia was essential to the spirit of everybody. He could speak and joke with the crew, he could not only translate words, but feelings and philosophies between us from The United States and our friends in Russia. He was at home there, as he was on every location. He enjoyed the experience and grew and learned so much. The education and impressions he soaked up in every foreign location were remarkable and made me think the whole world was his stomping ground.

People all over the world loved David from their first meeting. He was a charming and valuable Diplomat to the Motion Picture Industry.

His professional skill and dedication was unquestionable, but within all the work, he found time and energy to get close to the people he worked with and the places he visited.

Without David, locations will never be the same. We were a team who believed, that within film-making, there exist no borders, no social, no cultural barriers. We were doing our work to report on the whole world and for the whole world, and David was a man who could find peace, and create objectively anywhere. His death is a great loss to the Film Industry, and I feel deep sorrow with his family, over the personal loss of my very close friend, David.

His memory and thoughts will live on, his lust for life, enthusiasm for his work and appreciation of being a man, free to travel and live in the world he loved, have shown all of us, who knew him, a way to find peace of mind and happiness in a world so torn by turmoil.

David was loved and will be missed very much.

Flemming Olsen

(TOP) Peggy poses for a snapshot inside the Kremlin walls. (BOTTOM) Cameraman Volkov lines up a shot, while his assistant, "Oleg", stands by.



CHEMICAL MIXTURES FOR CREATING SPECIAL EFFECTS CINEMATOGRAPHY

By B. T. TRAVKIN

Director of Photography, Mosfilm Studios, USSR

Soviet cinematographer uses the most ordinary materials to create unique screen images of stunning visual beauty

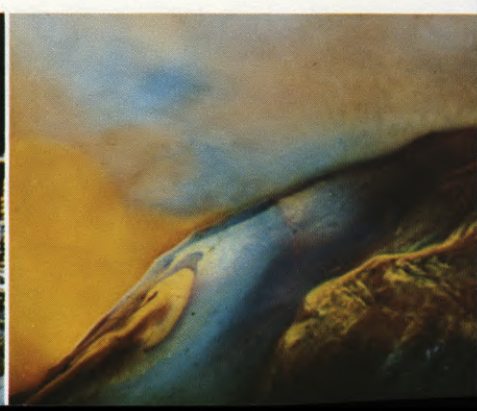
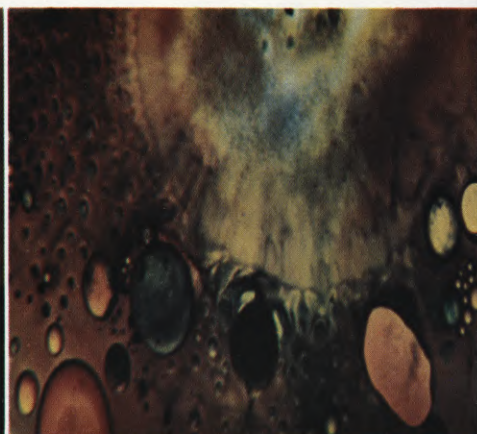
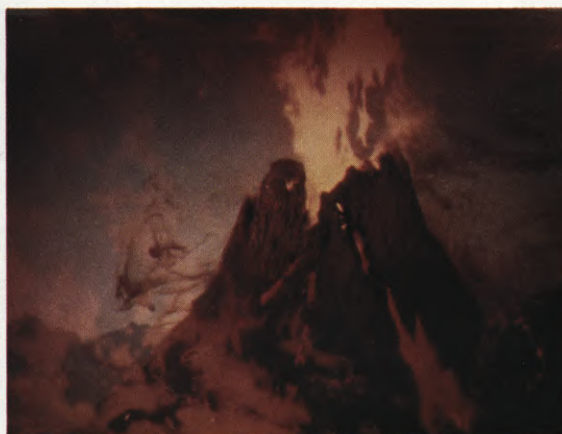
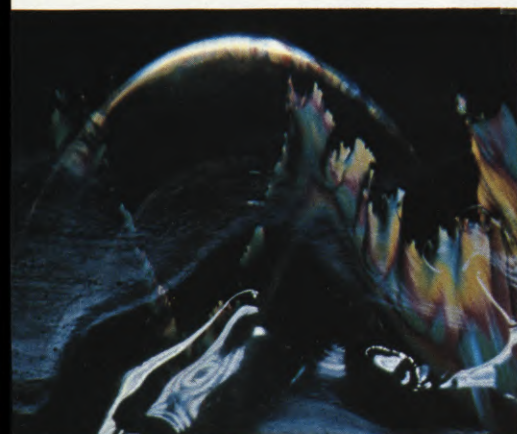
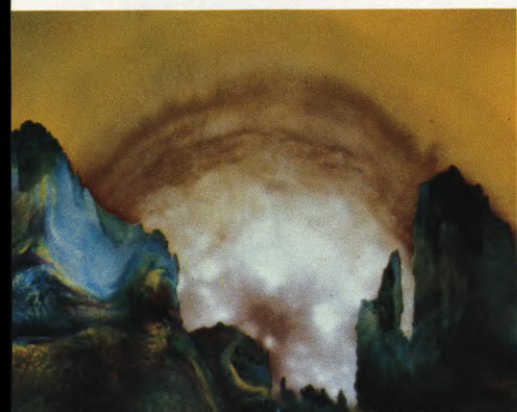
It is difficult to conceive the existence of cinematography without the achievements of chemistry which, as far back as a hundred years ago, laid down the foundations of photographic art. Chemistry is used in all branches of cinematography, beginning with raw stock manufacture and ending with con-

struction of plastic sets. And in such a variety of cinematographic art as the technique of special effects, chemistry also continues to take up new positions. There exists a number of methods for shooting special effects. Some of them, such as model shots, painted elements and travelling mattes, are in constant

use at our studios, others are being assimilated and introduced.

The process of elaborating technological means for practical solution of intricate scenes, laid down by the authors of a motion picture, involves permanent development of new methods for composite shots. As a matter of

A few of the more than one hundred composite images which appear in the award-winning Soviet film, "SPACE, EARTH, SPACE", which portrays the evolution of the Universe in strikingly visual terms. The frame blow-up in the middle row center depicts a volcanic eruption. The frame in the bottom row center symbolizes the emergence of civilization on earth, as indicated by lighted skyscrapers. Similar effects were created to represent the surface of the fantastic "planet-brain" which appears in the ambitious science-fiction feature, "SOLARIS". Scenes from "SPACE, EARTH, SPACE" were also incorporated into the science-fantasy feature, "EOLOMEYA", produced at the DEFA Studio in East Germany. These ultra-exotic effects were produced through the use of such common "household" chemicals as: liquid soap, shampoo, eau de cologne, tooth elixer and fountain pen ink.



course, some of the methods suitable for the given instance are not used further on; others are introduced as rationalization proposals and even inventions. This is a natural phenomenon, since the process of creating special effects is as much unlimited and surprising as the possibility to invent, attempt and create.

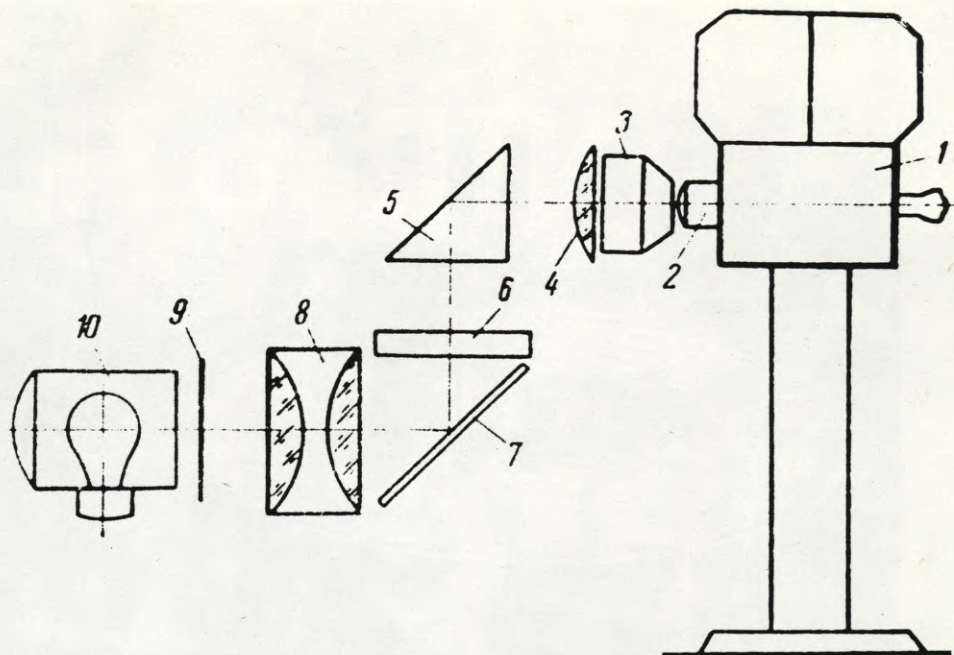
While working on a film the cameraman and the designer of special effects have to vary constantly the existing methods and create new ones, since each script always poses problems that cannot be solved by a standard approach. Thoughtful and ingenious work is required.

There is one specific feature about the technique of special effects cinematography, i.e. imitation before a camera lens of some nature phenomenon or dynamics in a reduced, miniature form. It is quite possible, for instance, to shoot a model of a size a hundred times smaller than that of the real object. With regard to this, a number of technological methods and formulas were proposed which made it possible to imitate before a camera lens various complicated phenomena, occurring in nature and life.

It has been observed that some solutions of chemical substances, mixed under certain conditions, show an unexpected and curious pattern. For instance, when putting into water a drop of tooth elixir, the latter does not merely disappear in the mass of liquid but results in a dynamic splash of a peculiar pattern.

To have a better view of this phenomenon, one should add into the elixir some aniline dye (a drop of fountain pen ink) and then put a dose of dyed elixir onto the water surface by means of a medicine dropper. Then the picture of the elixir dissolving in water becomes quite evident: the drop scatters over the water surface and forms a figure resembling a flower. The experiment illustrates a simple and convenient method for revealing the pattern of colourless ingredients mixing—i.e. a method of dying of one of the liquids in contact. In the given experiment pure alcohol or Eau-de-Cologne can be used instead of tooth elixir. Other substances, mainly liquids, which can give any pattern, and form interesting dynamics with interdiffusion have been systematically sought.

As contact substances, mainly those widely available and well known in daily use were used: Eau-de-Cologne, liquid synthetic soap, glycerine sugar syrup, acetone, etc. Gradually the range of substances involved increased. Experiments were conducted on synthetic resins and chemical compounds, among



Block diagram of the installation used for filming the composite chemical special effects for "SPACE, EARTH, SPACE". (1) The "Mitchell-Rapid" camera. (2) Soviet-made "Industar-23" main lens. (3) "Satec" (France) anamorphic attachment. (4) Supplementary lens. (5) Prism. (6) Cuvette. (7) Mirror. (8) Condenser. (9) Ground glass. (10) Illuminator.

which the wetter 10-17, CMC (Carboxymethyl cellulose) and resin TF turned out to be highly interesting and useful. While performing the experiments, optimum conditions were determined under which the interflowing liquids could most clearly and fully reveal the visual picture of surface disturbance and interdiffusion.

A small (120 x 120mm area) cuvette with a flat glass bottom and wooden edges of 1 cm height was used in the experiment. The cuvette, on a special support, was placed strictly horizontally above the light source, since the picture observed is better seen in passing light. One of the liquids was poured in the cuvette more often as a layer of not more than 2-3mm thick. This liquid was called "medium". The second one (liquid), called dynamic element (D.E.), was added by a dropper or some other vessel onto various areas of the "medium" plane. A drop of dynamic element running over the surface of the "medium" formed a pattern peculiar only to those two liquids. It is quite evident that not every two of the randomly taken liquids produced an interesting pattern. Estimating the results of mixing, one should pay attention to the fact that an interesting pattern can be rather miniature, and exist in an area of not more than 1 cm².

In such cases, the method of macro-shooting should be brought closer to that of micro-shooting which, in its

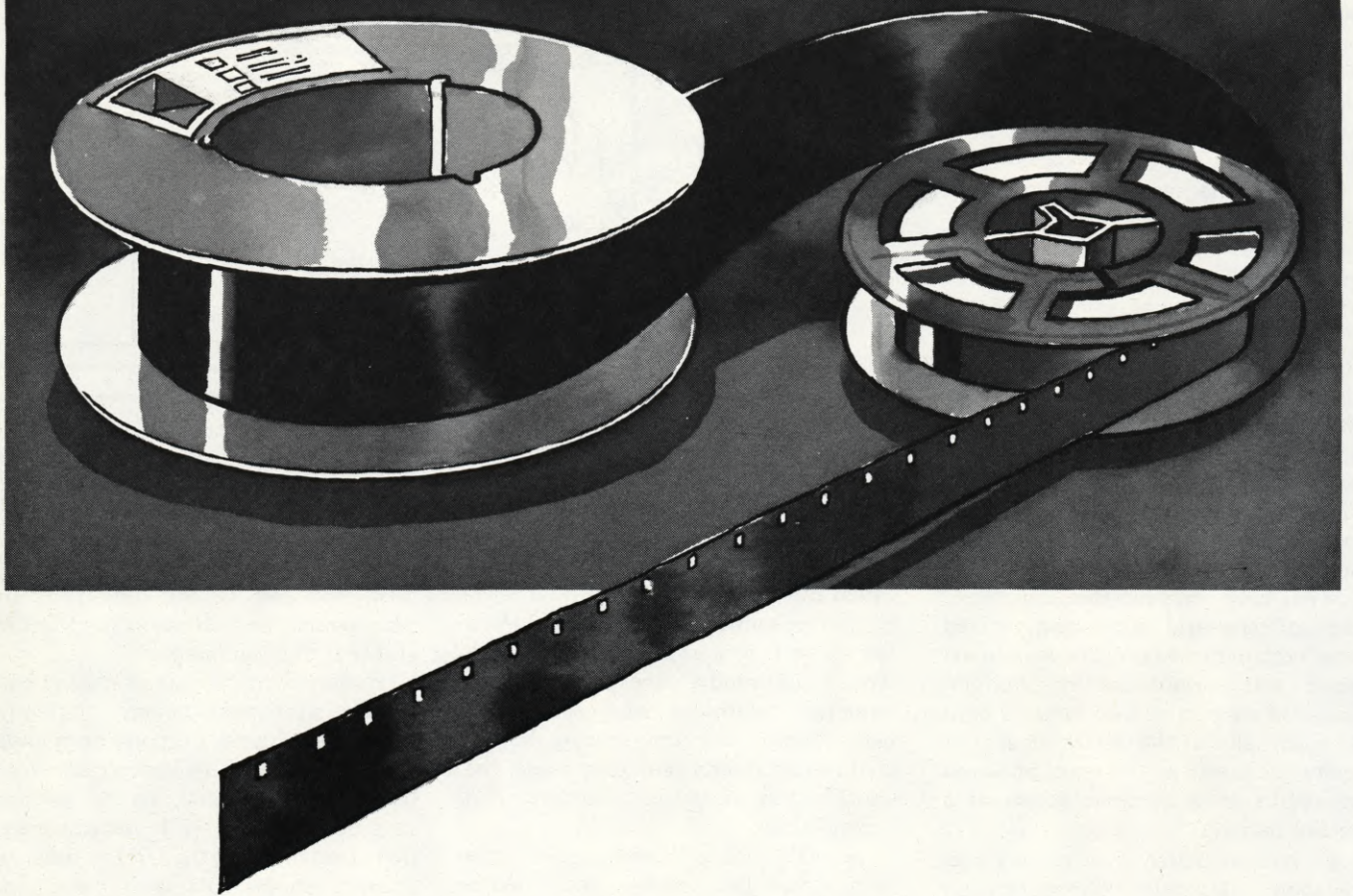
turn, will expose the details of the dissolvment and diffusion processes invisible at the beginning.

Hundreds of variants of mixing have been investigated, many "effective pairs" were found, the conditions under which the liquids in contact can form not one, but several, typical patterns have been determined. It was discovered that the nature of the picture observed depends on the volume of the liquids, their temperature, concentration, thickness, thickness of the "medium" layer, ambient temperature, volatility of the liquids, movement of the air above them, chemical purity of the liquids and a number of factors taken into consideration, but not known yet. For this reason, the observed pictures of diffusions and contacts can be divided into easily-reproduced, hard-to-reproduce and unique ones. The number of easily-reproduced pictures is much bigger; therefore, the pairs in contact can be systemized.

It is possible to complicate artificially the interdiffusion of the agents, i.e., to create such conditions under which a stylized earth or space landscape with dynamic or colour elements appears on the glass cuvette bottom. With a thin wooden stick or brush one can interfere in the "natural pattern", touch it up and thus create a picture better answering the cameraman's intentions. Such a method of creating a chemical ornament—

Continued on Page 991

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PEGGY FLEMING VISITS USSR

Continued from Page 961

temperature was hovering around zero and it was snowing. As they made their way down the snowbanks to the ice surface, I'm sure they were thinking ... crazy Americans ... crazy Americans. We kept our promise, the skaters' coats were kept on until after the slate and the moment that the cut was called the cry "Paltos! Paltos!" rang out and just about everyone on the crew came running with "Paltos" (coats in Russian). They were very appreciative of our efforts and gave a beautiful, if not heroic, performance.

The skaters did not speak any English, so our choreographer, Bob Paul, had to work through an interpreter. As I watched them work, something occurred to me. The interpreter, in this case Ina Kolesnikova, is running the whole bloody show. She's the Executive Producer, Producer, Director, Choreographer, Director of Photography—it's incredible.

After the shoot with the Ice Ballet we had a real Russian feast complete with umpteen toasts of vodka. Bob Bagley was asked to give a toast on behalf of Bob Banner and the American crew. Bags is a pretty articulate guy but definitely has his off-days. He stood up, tapped his glass, mumbled something and then, once again, the interpreter to the rescue. She translated a glowing toast that had the Russians on their feet applauding Bags. He thought he was fantastic; Ina just smiled.

We had exactly one month to the day to film our Special. We shot in sixteen major locations, as well as hundreds of setups for scenics and Russian color shots with Peggy. With this demanding schedule, most of the crew had to assume more than one capacity. For instance when Bob Banner wasn't shoveling snow, copying music, scraping ice, carrying camera gear or being rehearsal pianist for Russian singer Ludmilla Senchina he was the Executive Producer.

Once the production got underway we decided to do extensive documentation behind the scenes. At all of our locations we had one or two extra cameras set up to cover the action. Our motto: if you could run a camera, and you see something interesting—shoot it! Even Producer Dick Foster was pressed into service as a documentary cameraman. Dick quickly decided that he was one of the all-time great cameramen. He learned big words like *magazine*, *tripod*, *pan-handle*, *battery belt*. Unfortunately, the word he didn't learn was *focus*. Dick is a talented and energetic Producer and if he ever finds the focus ring he might

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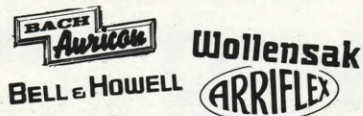


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become a decent cameraman.

Creating a television special like "PEGGY FLEMING VISITS THE SOVIET UNION" is not easy. It's not easy to cart crew and equipment halfway around the world; it's not easy to constantly withstand severe weather conditions; it's not easy to shoot an entire show and not see one frame of film until you return home; it's not easy to choreograph a major production number in a few hours. It's not easy to be constantly shooting from the hip and improvising on the spot, it's not easy to put all of your trust in the fact that the pond will freeze by Wednesday or that the Kirov Ballet will say yes before we have to leave. It's not easy to skate on bumpy ice and make it look great; it's not easy to take 60,000 feet of film and whittle it down to 2,000. But, then, if it were easy, how could it be worthwhile? It's a good feeling when you return home and the film looks pretty damn good and you have creative editors like Keith Olson, Alan Ferguson and Cris Lemmeyer to make it work. It's a good feeling when you have Producers like Bob Banner and Dick Foster who give us confidence and criticism and know what a show is all about. It's a good feeling to have a performer like Peggy Fleming who can make it look easy under incredible conditions, and it's a good feeling seeing our show on the air and then receiving great reviews and an Emmy Nomination.

But most important is the feeling that maybe, in some small way, we have helped two great nations to understand each other more fully and the great feeling when you say goodbye at the airport in Moscow that everyone is hugging and kissing and crying. ■

HOW TO ENJOY FILMING WHEN YOU DON'T SPEAK THE LANGUAGE AND YOUR FEET KEEP GETTING COLD

AN INTERVIEW WITH BOB BAGLEY

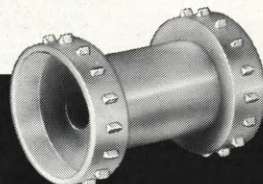
QUESTION: Other production companies have filmed in the Soviet Union, how was Bob Banner Associate's production: "PEGGY FLEMING VISITS THE SOVIET UNION" unique?

BAGLEY: *This was the first time an American company had co-produced a film with the Soviets. Many people had talked about doing it, but this was a first. Bob Banner, the executive producer and Dick Foster, the producer, explored the idea with the Soviets through regular channels by phone and mail, but didn't come up with any concrete answers—only the fact that the Soviets*

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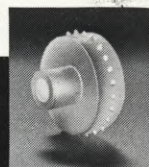
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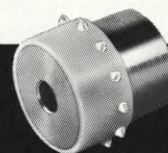
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were interested in a coproduction and Peggy Fleming was an acceptable subject. To say that Peggy was merely acceptable is an understatement. Anything involving ice skating is a "big deal" in the Soviet Union. Peggy had done skating exhibitions there after the Olympics and is not only well known, but very popular with the Russian people.

Although the Soviets were interested, they were cautious and nothing was finalized. Bob and Dick wanted to do the show, not just talk about it, so they applied for tourist visas and hopped on the first available flight to the Soviet Union. It must have been a little "scary" because they actually had no invitation, letter of introduction or any idea who the proper people were that they should contact. Somehow, when they arrived in Moscow, they found the State Central Television Committee Building and were granted a meeting with the Committee heads.

The Soviets were so impressed by Bob's and Dick's enthusiasm and direct approach that final details were worked out and "PEGGY FLEMING VISITS THE SOVIET UNION" was under way.

Mr. Banner took a Berlitz "cram course" in Russian, which didn't hurt his image with the Soviets. In the last couple of years, he has taken courses in Spanish, German and Chinese for various television productions. I don't know how he keeps all these "tongues" straight in his head. I mention the study of all these languages only because it points out his complete dedication and involvement, which I'm sure plays a large part in the success of his productions.

QUESTION: You mentioned the State Central Television Committee. Whom did you ultimately work with?

BAGLEY: Before answering that question, I should probably backtrack a little. Although arrangements were made and the show co-produced with the Central Committee, the Minister of Culture, Mme. Ekaterina Furtseva, more than anyone, made the show possible. She was enthusiastic from the beginning and, I'm sure, helped the Committee cut through any red tape that may have existed.

We worked with two branches of the State Television Committee: one in Moscow and the other in Leningrad. In Moscow, the Committee is headed by Evgenyi Oksiukevitch and Karen Asaturjan. In addition, they assigned to our production Irena Evgrafova as production coordinator and Yuri Pronin as production manager. In Leningrad, we

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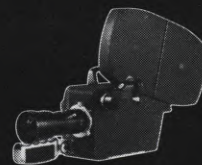
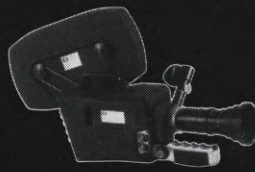
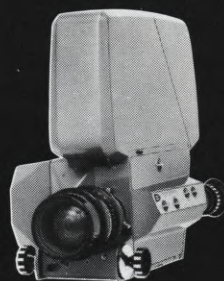
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worked with senior editor Irena Malutina and production supervisor Sasha Nicitin.

These people coordinated and headed the Soviet crew. They brought an unbelievable number of talents and enthusiasm to the project and without them, the show would have been impossible to do.

QUESTION: What was it like working with the Soviets? Did you feel restricted?

BAGLEY: We were not restricted in any way. You have to keep in mind that the Soviets were as interested as we, that the show be outstanding. We were able

to film anything we wanted. Needless to say, that did not include military or missile installations, but I doubt that we'd be allowed to do that here in the United States either.

You also must remember, we were not in the Soviet Union to make a political or propaganda film, and the Russians were trying to show us the very best of their culture, art and entertainment artists. When they could see by our actions, ideas and sincere curiosity, just what our goals were, they did everything in their power to show us everything.

We found the Soviets to be hard-working and completely dedicated to the project, once they understood our

methods and what it was we were trying to achieve.

One thing that stands out in my memory is the subject of job title. In the Soviet Union, people have a job which is normally confined within limited boundaries, or, better stated, highly specialized. For instance, they had some difficulty in understanding my job. My official title was Associate Producer, but I also function as a cameraman, which is my first love anyway. When I would also share the duties of the assistant cameramen, it caused some hurt feelings. I think this was because some of the Soviet crew members thought we were trying to take over their jobs because we didn't think them capable of doing them. After it was explained that none of us felt it was beneath us to help out wherever needed, the tension of the situation dissolved.

Everyone in the U.S. crew wore several hats and when the Soviets saw that all of our people would perform any task, whether it was their job or not, they abandoned their titles and hurt feelings and pitched in "shoulder to shoulder" with us. On one occasion, Bob Banner and Dick Foster stayed up all night, shoveling snow and scraping ice preparatory to filming one of Peggy's exterior numbers. This really "blew their minds", but only helped to point out how dedicated all the "American-skis" were to the film's success.

QUESTION: Can you tell us a little about the Russian technicians and their equipment?

BAGLEY: The Television Committee made arrangements for us to work through LENFILM, a Soviet Motion Picture Production company in Leningrad. The managing director is Mikhail Gendenstein. He is very professional and a very competent man, who would have equal position and stature if he worked for any U.S. production company. Even though I could not speak his language, he had an instinctive grasp of our needs and problems. I'm sure he foresaw and solved many problems for us that we didn't even think about.

From LENFILM, we were assigned one of the Soviet Union's top documentary film makers: Leonid Volkov. He was a perfect selection, because he is a complete film-maker—writer, director, producer, cameraman and editor. While he could not speak English, he proved the point that our craft is a common language and communication is not a problem.

Leonid taught us a few technical terms in Russian and I taught him the one word I felt best described him:

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"FANTASTIC"! After we would finish a take, Leonid would look over at me and ask questioningly, "... fantastic?"

Leonid became not only an indispensable member of the crew, but a friend and "vodka drinking companion". That's one thing that is not a misconception: the Russians really can put away the vodka! They can drink a couple bottles of vodka like Americans toss down a few beers.

LENFILM also supplied us with assistant directors, a production manager, art director, electricians, carpenters, grips, assistant cameramen and an entire busload of eager helpers.

Sincere, primarily, we were doing an ice skating show, one of the most important technicians provided by the Soviets was the ice engineer. He and his crew made ice for us in several exterior locations under less than ideal conditions. We were filming later in the season than originally intended and the weather was unseasonably warm. As a result, the ice man's job got harder and harder as the ice got softer and softer. Toward the end of the shoot, we began to wish we were doing a special on Mark Spitz instead of Peggy Fleming. I think a few of us even began to think about refitting Peggy with roller skates. As it turned out, we completed all our exteriors except one in Gorky Park, before the "spring thaw."

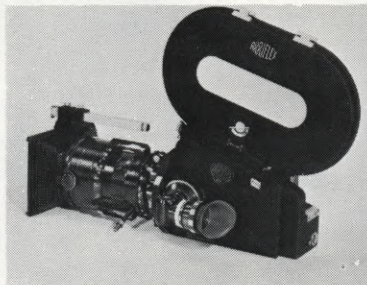
Most of the motion picture industry in the Soviet Union is geared to 35mm. They have their own cameras and I'm sorry to say I can't remember the names. I was a guest one day on location for a Soviet feature. They were using a 35mm reflex camera that was something like an expanded Eclair NPR. The film magazine was very similar, except that the supply and takeup sides were separated by an air space, but joined to a common plate which mounted or coupled to the camera.

The lens was also manufactured in the Soviet Union and was a 25-200mm, f/3.5. The reflex system seemed to be based on the mirrored shutter principle, but I couldn't be sure, due to the language difficulties.

16mm is reserved almost exclusively for news and documentary work. For this the Soviets use the Arriflex and Eclair. For raw stock, a negative material similar to Eastman color negative is used, but they have processing facilities for 7241 & 7242 reversal stocks, which are being used more and more for their news work.

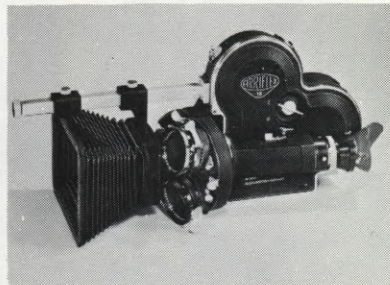
Their own 35mm film is also a color negative material with a speed of about one-half of ECN. As you would assume from the available film speed, the Soviets have a lot of "arcs" and use them. I

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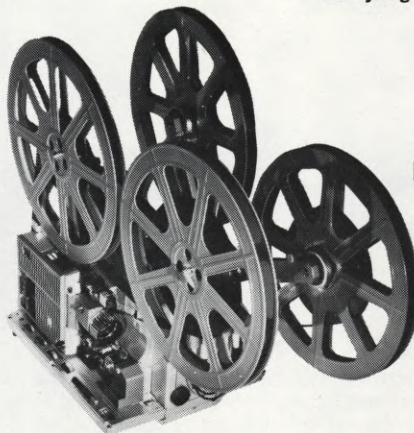
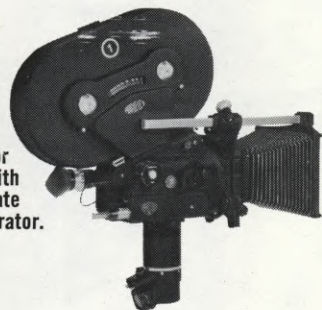
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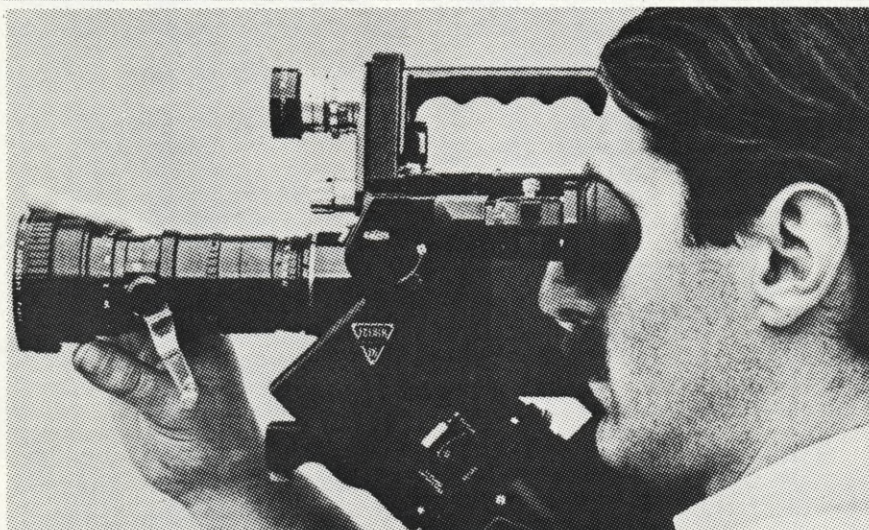


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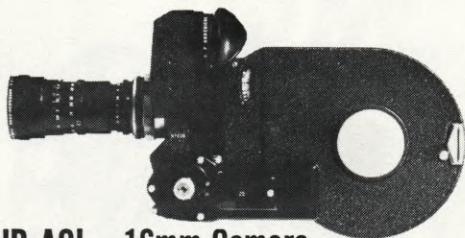
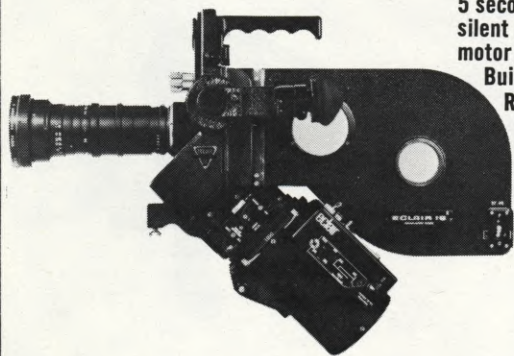
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was told however, that Eastman color negative is now being used more and more. I believe they have it processed in Finland, but feel sure they will soon have, if they do not already, processing facilities in the Soviet Union.

They did not have facilities to process 7252. This caused several problems which I'll describe later.

QUESTION: Did you use Soviet technicians exclusively?

BAGLEY: No. The concept was to do a joint production. Mr. Banner and the Soviets wanted the filming to be done as close to a 50/50 ratio as possible. We took as few people from the United States as possible and everyone picked to go was chosen because of his versatility, as well as his talent. Most of these people had also worked on previous Peggy Fleming shows and are more like a "family" than a crew.

The Director of Photography was Flemming Olsen, who is a Dane and speaks five or six languages. Although he does not speak Russian, and very few of the Soviet crew spoke English, some spoke some German which enabled Flemming to communicate without having to completely revert to sign language. This saved the day more than once. Flemming is also an outstanding cameraman whose talents and credits are well known to everyone in the industry.

We were also fortunate to have David Ayvazian, who speaks Russian as well as several other languages. David was head assistant cameraman and without him, I doubt that we would ever have finished on schedule. Every day David was responsible for a pile of equipment cases that resembled the entire Samuelson Film Service Ltd. rental inventory. It took a full-sized bus to transport all this gear to locations. Every morning, David organized the entire company into a sort of "bucket brigade" that wound its way from our equipment room, down halls, through the hotel lobby and out the front door past a puzzled doorman and into the waiting bus. After nearly two months and all this handling, not one piece of equipment was misplaced or damaged. With David, I know it was not just luck.

Our soundman was Dick Wagner, whom I had worked with on quite a few sports shows. This was Dick's first Peggy Fleming show, but he is now a full-fledged member of the "family". Dick is best described as the "invisible" soundman. He is self-sustaining and solves all his own problems without bothering anyone. As a result, you hardly ever know he is around, except when you

need his talents. Dick's only flaw, which is legend with those who have worked with him, involves a purselike bag in which he carries his pipe and personal items. Dick loses this "purse" an average of four times a day. On travel days, we always gaffer tape it to him. The important thing is that he has never missed or lost a piece of sound.

Dick has about 25 years of experience in sound and is also an accomplished violinist. Not only did he handle all the sound chores, but he assisted our musical director, Dick Freisen, not just with recording, but with music copying into the "wee" hours of the night. Also drafted for music copying was the assistant soundman, Baird Banner, and our other associate producer, Dee Baker.

Bob Paul, Peggy's choreographer and Olympic Gold Medal winner for Canada in 1960, is an integral part of all the Peggy Fleming shows. Bob had been to Russia before and his knowledge of the country, history and music, plus his talents, play no small part in the completed film.

John Green, who manages Peggy's live "Concert on Ice" show, came along with no title except "Mr. Indispensable". John did everything from helping to make ice, arranging transportation and meals to set decoration and keeping everyone's spirits up. He even kept Peggy's ice skates sharpened.

Also from "Concert On Ice" came its sound engineer, Baird Banner. Baird wears his hair in a ponytail which really attracted attention from the Soviets when we'd be out filming around Moscow. Baird assisted Dick Wagner with sound and put together a playback system for Peggy's exterior numbers that you could probably hear all the way back in the U.S. when he fired it up.

Rounding out the crew was Gordon Brockway, Peggy's wardrobe supervisor, Ingrid Thier, a makeup artist from Germany and Dee Baker, a staff associate producer for Bob Banner Associates who did everything except eat and sleep. Dee is an ex-dancer, who keeps himself in good physical shape. I don't think he ever weighs more than 150 pounds, so the fact that he lost over 20 pounds during filming tells you just how hard he works.

QUESTION: What did you do for camera equipment? Did you take it with you from the United States?

BAGLEY: Originally, we had planned to use Eclair NPR's supplied by the Soviet Union. As it turned out, due to the heavy documentary production going on at that time in the Soviet Union,

NPR's were pretty scarce.

Rather than bring equipment from the United States and pay the heavy air freight charges (we ended up shipping 168 cases weighing over 2,500 pounds), we had Samuelson Film Service Ltd. in London supply almost everything. I've worked with Michael Samuelson on previous shows and I can't say enough for him and his company. When Michael is involved with a production, your problems are his problems. Michael has called me on far-off locations on numerous occasions to alert me to possible problems I might encounter and to offer a solution. You soon come to realize that he is genuinely interested in your individual production and is still thinking about you, even though the equipment has been shipped and, for his part, the job should be over. This is not so; he is an amazing man, and a real professional.

On only three days' notice, Samuel-

son's supplied us with four completely winterized, crystal-sync, Eclair NPR outfits, cases and cases of lenses and support equipment and even took it upon themselves to go out and obtain Coleman lanterns to keep the cameras warm, plus some large insulated urns for coffee and soup to keep the crew happy. They are, to say the least, thorough!

All lenses, which included Angenieux 12-120's, 12-240's and an assortment of prime and telephotos, were also winterized. We never had any camera malfunction, nor did we ever have a lens or eyepiece fog up, under what can only be described as the severest of conditions.

The only camera brought from the United States was the Photosonics Actionmaster 500 high-speed camera. I've had a four-year love affair with this camera and feel naked without it along on a shoot. Not only is it the most trouble-free high-speed camera I've ever



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used, it does double duty as a back-up camera for 24 fps work. Also having a camera you can shoot at 500 fps and which uses standard Arri mount lenses is a convenience, as well as an asset. My camera has an integral heater which not only keeps the film from getting cold and brittle, but keeps my cheek "toasty" while filming on cold Russian days.

For sound, we used three crystal-sync Nagra IV recorders. Peggy's skating numbers are filmed both live and to playback tracks. Dick and Baird had a complete complement of microphones ranging from shotguns to the radio

transmitter variety. They also had the aforementioned playback system for use at large rehearsal rinks or the larger exterior locations, like Finland Bay. It consisted of a DC battery-operated power amplifier and some theatre-type speakers also borrowed from the "Concert on Ice" show.

QUESTION: What type of film stock did you use and how much?

BAGLEY: We used 7252 for all exteriors, both day and night, thanks to the abundance of arcs provided us by the Soviets. For the larger interiors, and

particularly when we filmed a public performance live, we used 7242. Whenever we were doing interiors where we could utilize some existing daylight, we used 7241. When it was all over we had shot over 60,000 feet of 16mm film.

QUESTION: What did you do about processing and dailies, and did the film undergo any censorship?

BAGLEY: There are no facilities in the Soviet Union to process 7252. We were, therefore, faced with the problem of finding someplace to send it nearby. It became immediately obvious that it would be impossible to have dailies or, for that matter, even "weeklies".

We were very concerned about shooting too much film before we knew for sure that all the equipment was functioning properly and that the film stock didn't have any peculiarities. We finally decided to have Keith Olson, the supervising editor on the show, fly to London where he received the first batch, put everything in sync, and screened it not only for quality, but continuity and content. Keith has edited two of the previous Peggy Fleming Television Specials and really knows if you've got what you need or not. Keith phoned us a detailed report on the film and assured us that everything was OK.

Keith was also responsible for working out our equipment needs with Samuelson's, so, even though he never got to the Soviet Union, he played a big part even in the production of the film, aside from the final editing.

Since we would never be able to get any film back from processing in the U.S. in time to see it and make reshoots, we decided to hold all the exposed stock in the Soviet Union. The entire show was shot without the producer or director seeing one frame of exposed film. That's what I call confidence in a crew.

Since the exposed film was shipped out of the Soviet Union unprocessed, there obviously was no censorship... that is, unless they have some top-secret technique we don't know about... hmmm???

QUESTION: What was the most difficult problem to overcome?

BAGLEY: The language. We were guests in a country where we could not speak their language. Fortunately Irena Evgrofa and Yuri Pronin from Moscow spoke English, as did Irena Malutina from Leningrad. Mr. Banner spoke some Russian, thanks to his Berlitz courses, and we were fortunate to obtain the services of a Pan American Airlines

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stewardess, Nadya Nikolajew, who spoke fluent Russian. We also really lucked out with an interpreter supplied by the Soviet Intourist Bureau. Her name was Ina Kolesnikova. Not only did she have a complete grasp of English and our sense of humor, she had a real knack for film production. She also had a great talent for getting the seemingly impossible done.

When you stop to think about it, since we couldn't communicate directly with hardly any of the Soviet technicians or artists, we had to put complete trust in the fact that your assistant and translator understood exactly what you were trying to achieve and that this intent was correctly relayed to the people concerned. In effect, it was they who were doing the directing, etc.

They did a fantastic job and I wonder if I could speak Russian, and if the shoe were on the other foot, what kind of job I could do for them here. I can recall many times trying to get my needs and wishes across to someone here in the U.S., only to be completely misunderstood . . . in my own language.

One instance stands out in my mind that really points out the problems we had with communicating. One day, without the aid of an English/Russian interpreter, I had to get some information from a non-English-speaking Russian in Red Square, Moscow. He was with his wife, who spoke some French (her husband didn't). Nearby we found an Italian who spoke some French, but no Russian or English. I speak a little Spanish, which is "kinda" like Italian, right? So from Russian to French to Italian to Spanish and back to English we finally were able to converse. Obviously a very slow and humorous way to carry on a conversation, but it worked and you make more friends this way instead of by the old one-to-one method. Our discussion must have resembled a mini-United Nations session.

QUESTION: Would you like to go back to the Soviet Union and do other films?

BAGLEY: If you'd have asked me that question a week or so before leaving the Soviet Union, I'd probably have said no. I had been away from the United States for almost three months and was just a little homesick. But on my last day in the Soviet Union it finally sunk in, just what an incredible experience I was having, and I was genuinely sorry to leave. It also dawned on me how close all of us had become with Russian friends. The country, its history and culture were great, but the people are what is important in my mind.

I learned so much about the country

and its film industry that future productions there would be much easier. My background in films is basically related to sports. I'd love to go back and do something in this area. There is so much going on in this country that would be really intriguing for U.S. television viewers.

There is a very strong possibility that Bob Banner Associates will do some more shows in the Soviet Union. "PEGGY FLEMING VISITS THE SOVIET UNION" was a rewarding experience for all of us who were fortunate enough to go. I'm sure I speak for all of us when I

say I hope to have the opportunity to return soon.

QUESTION: How is Peggy Fleming to work with?

BAGLEY: Working with Peggy is always enjoyable. This is the third television special I've worked with Peggy on, and I hope there will be a fourth. I can't say enough for all the talent, dedication and warmth she brings to these productions. All the logistics we've been discussing; pre-production conferences, surveys, transportation, crews and equipment,

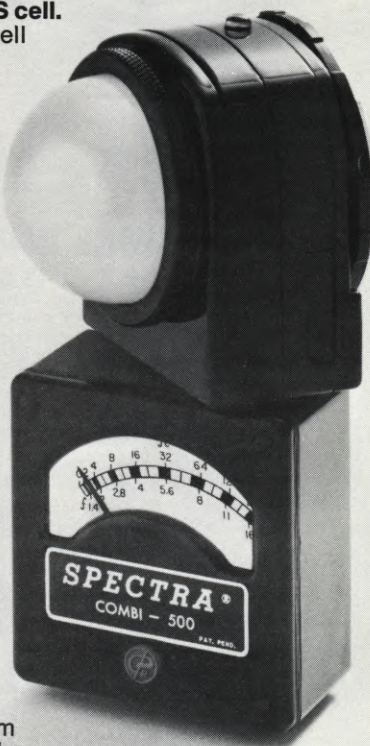
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mean nothing without Peggy. When you watch Peggy doing a number in any of her specials, she's a smiling pretty girl, skating to beautiful music, in a gorgeous setting. It looks like a "perfect" way to make a living. I'm not saying it isn't, nor would Peggy.

But what you don't see, is Peggy beginning her day at 5:30 AM with makeup and wardrobe, nor the long hours on location performing in a costume better suited to the climate of Miami Beach than Leningrad's 10 degrees below zero.

You don't see her trying to execute difficult and sometimes dangerous jumps and spins on ice surfaces more appropriate for a "steeplechase" than figure skating. You don't see the falls, when everyone holds their breath until Peggy gets up, dries herself off, rubs away the hurt and tries the seemingly impossible again and again.

You don't see the endless hours of rehearsals for the next day's shoot that sometimes last until midnight. And most of all, you don't see Peggy smiling through it all . . . giving really more than there is to give.

As a cameraman, all I have to do in my nice warm coat, is capture the performance on film. Peggy has to do it, and do it she does. My job seems pretty easy by comparison. ■

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MOSFILM STUDIOS

Continued from Page 957

(dialogue, music, sound effects) and mixing (16), technical and research centre housing all research laboratories, set-designing bureau and some technical services (17), additional storehouses (18) for props, costumes, etc. A future new film processing laboratory building (19) will be equipped with high-speed developing and printing machines, modern control and measuring, as well as auxiliary facilities.

Mosfilm now is the largest studio in the USSR and one of the biggest modern motion picture studios in Europe. Its annual production accounts for an essential part of the entire film production of the USSR. For instance, the number of films (mostly colour) produced at the Mosfilm studios for the period of 1973 was as follows:

70mm features	- 6
35mm features, wide-screen anamorphic (1:2.35)	- 25
35mm features (1:1.37)	- 9
Foreign films dubbed into Russian	- 30
Short-length films	- 30 (one-two reels)
Desanamorphed wide-screen films for the presentation with aspect ratio 1:1.37	- 20
Poly-screen varioscopic	- 1

Mosfilm studios is a self-contained enterprise with all necessary facilities and equipment for a complete production cycle (from a script to the final print). Release printing is performed at special release-printing factories in different towns of the USSR reaching up to 500-1500 copies of a film.

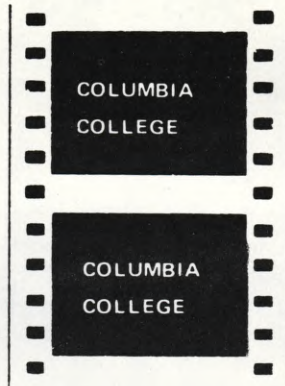
During 50 years of its activity Mosfilm has produced 1249 feature films of different types and formats, the general length of which has reached 2,455,112 meters.

Three films—"THE FATE OF A MAN", "THE BALLAD OF A SOLDIER" and "LIBERATION"—were awarded with Lenin premiums, 43 films have won State premiums and 136 films were awarded with various prizes at International film festivals.

The Mosfilm super-production "WAR AND PEACE" has won the American Motion Picture Academy prize—the "Oscar".

A number of Mosfilm features were awarded special diplomas for high quality of colour, special effects, photography and technical sound.

For high creative and technical achievements, Mosfilm Studios was decorated with the Lenin Order and October Revolution Order. ■



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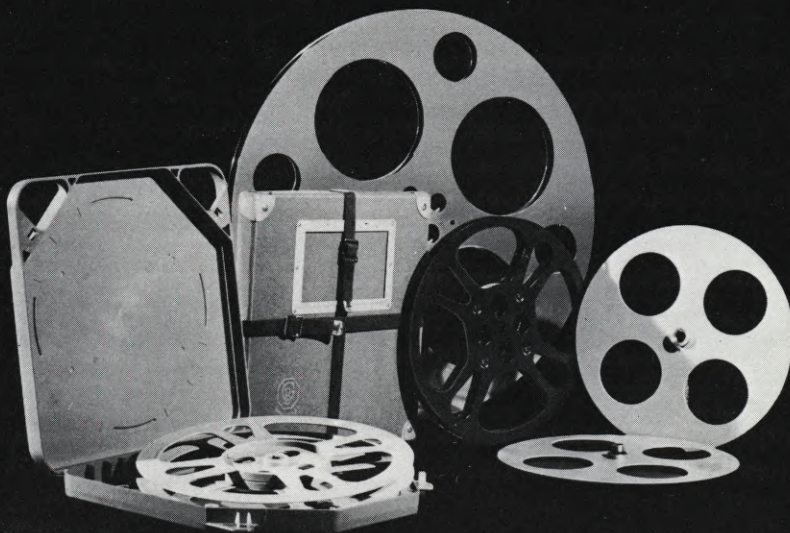
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A.S.C. MOURNS THE PASSING OF LEON SHAMROY

It was with the most profound sorrow that members of the American Society of Cinematographers learned of the passing of their beloved colleague, Leon Shamroy, ASC, on July 7.

At his funeral in Hollywood, more than 1,000 of his friends and former co-workers crowded the cemetery to bid their last farewells to this very special man. That evening, Los Angeles Channel 4, NBC-TV telecast a lengthy tribute to Hollywood's most-honored cinematographer, with the commentator referring to him as "the cameraman's cameraman", an appellation often applied during his long and illustrious career behind the camera. That it was quite apt was attested to by the fact that his peers in the film industry had honored him with 18 Academy Award nominations and four golden "Oscar" statuettes for "Best Achievement in Cinematography".

Born in 1902 in New York City, where he studied engineering at Peter Cooper Institute, he entered the motion picture industry in 1920 as the lowliest worker in the laboratory of the Fox Film Corp. holding down a position then known as "hyppo shooter". He later

described this period of his life as "like working in a sewer." But on his own time, what little there was of it, he was teaching himself photography—learning the craft that would eventually propel him to the very pinnacle of his profession.

After a long, arduous day among the evil-smelling solutions of the lab, he would walk onto the stages of the studio (they worked ungodly hours in those days) and watch the cameramen at work, studying how they used light and set up their camera angles. He procured a still camera and took hundreds of pictures—trying out all kinds of effects, correcting the errors which initially plagued his work, polishing his technique.

Eventually he got a job as assistant to cameraman Andy Miller and his responsibilities included taking care of Miller's Bell & Howell camera, operating a Pathé camera himself and shooting still pictures.

In 1924, Charles "Hurricane" Hutchison (an actor-stuntman who starred in his own pictures) gave Shamroy his first opportunity as a full-fledged cameraman, and they made eight pictures a year together, taking a whole week to shoot each one. He became associated with the late Robert J. Flaherty in the filming of a documentary during 1928-29 and, for two years (1930-31) he served as cameraman for the Huntington Ethnological Expedition, covering Japan, Siam, Burma, India and Egypt.

His first of a multitude of awards to follow was the Honor Film of 1928 Award, granted him in 1928 by the National Board of Review in recognition of his work as co-producer (with Dr. Paul Fejos) and cinematographer on "THE LAST MOMENT".

In 1939 he went under contract to 20th Century-Fox studios and remained in that status until progressive illness forced his retirement a few years ago.

An acknowledged master of the use of colored light in cinematography, he was honored by *Look* magazine in 1945 for that and other unique contributions to the art of color photography. In 1949 he also received the *Look* Award for his photography of "TWELVE O'CLOCK HIGH".

The pictures which won him four Academy Oscars (the highest honor which can be bestowed by co-workers

of the film industry) were: "THE BLACK SWAN" (1942), "WILSON" (1944), "LEAVE HER TO HEAVEN" (1945) and "CLEOPATRA" (1961).

Among the pictures for which he received Academy Award nominations were: "THE YOUNG IN HEART", the first CinemaScope picture: "THE ROBE", "SOUTH PACIFIC", "THE KING AND I", "LOVE IS A MANY SPLENDORED THING", "THE SNOWS OF KILIMANJARO", "A TREE GROWS IN BROOKLYN", "PORGY AND BESS", "THE CARDINAL", "DAVID AND BATHSHEBA" AND "THE AGONY AND THE ECSTASY".

Though he would have scoffed at any such high-flown designation, Leon Shamroy, ASC was a consummate artist of the camera in the most literal sense of the term. As a person, his straightforward honesty and often-picturesque speech etched him as a one-of-a-kind personality—a true original. Beneath his sometimes seemingly gruff exterior was a very warm and wonderful, extremely sensitive human being, beloved by all who knew him and worked with him.

He gave unstintingly of his time and talents to further the progress and dignity of the motion picture industry. He was Past Chairman of the Research Council of the Motion Picture Association of America, Past President of the American Society of Cinematographers (which he joined in 1932) and Past President of Photographers Local 659, International Alliance of Theatrical Stage Employees.

He was one of the only two Directors of Photography whose name has been immortalized in Hollywood's famed "Sidewalk of the Stars", his "star" being located on Hollywood Blvd. at Highland Avenue, not far from the A.S.C. Clubhouse.

With the passing of Leon Shamroy, ASC, the motion picture industry, world-wide, has lost a great artist of the camera. Those of us who were privileged to know him intimately have lost a dear and irreplaceable friend.

But his genius will live on in the work he left behind, and the many wonderful pictures he photographed will—especially through the medium of television—continue to delight audiences for many years to come. ■

HERB A. LIGHTMAN

LEON SHAMROY, ASC
1902 - 1974



VARIOSCOPIIC MULTI-IMAGE

Continued from Page 935

film has resulted from specific requirements of film script and visual approach. Accordingly, up to 80% of black-and-white duplicating positives of sequences from old films had been used which were shown on a multiple-image screen simultaneously with scenes from 35mm and 70mm modern colour films.

Black-and-white dupes of old films were printed only in film archives by a standard printing process and on a standard film stock.

Our great challenge was to utilize up to the maximum all the possibilities of the varioscopic multiple-image presentation system. For this purpose, such a technological process had to be developed which would allow presentation of several images upon one frame. Moreover, the colour and the configuration of these panels with separate images had to change from scene to scene, and the images had to move smoothly across the screen.

The third important feature of the film "OUR MARCH" was that it was intended for wide demonstration in ordinary theatres without any technical limitations.

All these requirements, combined with a very limited production time schedule, have demanded a well-prepared highly improved technology, along with the modern technical facilities described below.

The Choice of Rational Technology and Technical Means

The 70mm 5-perforation format was chosen, in view of its possibility to place into one frame the maximum visual information, as compared to other existing presentation systems.

The type of film stock chosen was meant for printing black-and-white and colour interpositives from 35mm and 70mm masked negatives, and for direct shooting.

Two different shooting processes were used in the production of "OUR MARCH": first, the shooting of separate scenes for future multiple-image sequences on a colour 70mm film negative. This included the interior shooting at the Mosfilm sound stages, the re-shooting of still photographs, posters, leaflets, etc. From this original picture negative a master positive was printed which served for subsequent production of picture release negative.

This also included the superimposing of animated titles on a film stock already carrying a latent image.

The second process was the re-shooting from black-and-white and colour

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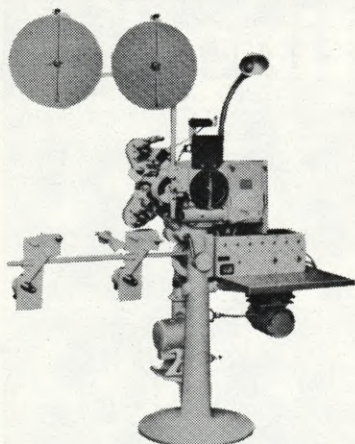
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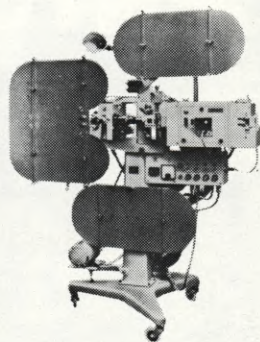


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inter-positives onto a 70mm colour nega-
tive stock type LN-5. This was a very
sophisticated process developed for this
particular film, and requiring special
care, since the resultant negative served
for final editing of the film.

Mosfilm studios possesses all the nec-
essary equipment for this kind of tech-
nique, namely:

1) Frame-to-frame projectors for
35mm and 70mm formats projecting
the image upon a diffusing retro-reflex-
ing screen.

This method of re-shooting the re-
flex-projected image has its limitations,
due to a rather low light intensity and
parallax appearing at the same time of
projection.

2) The same projectors equipped
with collecting lenses for a standard
back projection operation.

Here the preference should be given
to the so-called "aerial screen" system
which gives no loss of image quality.
This system has been used at the Mos-
film studios for composite photogra-
phy: the travelling matte process and
the superimposing of titles.

3) The triple head optical printer
TM-70 ("projector-lens-camera")
equipped with many automatic devices
and providing efficient operation.

This optical printer had been success-
fully used in "OUR MARCH" produc-
tion for the creation of multiple-image
composites.

A new feature of the printer was the
"Pentovar" zoom lens attachment on
the projector head with variable focus
lenses 150mm, 200mm and 300mm, an
aperture of F/5.0 and zooming ranges
of 100mm-to-400mm, 150mm-to-
600mm and 200mm-to-800mm. For
shooting with "Pentovar" at definite
distances, two special lens attach-
ments with diameter 140mm were de-
signed and manufactured. These were
attached to the projector head for
projecting and shooting at the distan-
ces beginning with 450mm.

While changing the scale of the
image, it was desirable that one small
area of the image remained unchanged.
This was achieved by changing the
positions of the projector without mov-
ing the lens. For this purpose, the
corresponding locking devices were pro-
vided on the projector plate.

The main problem with variable fo-
cus lenses attached to projectors was
the non-uniform brightness of the pro-
jected image during the changing of its
scale. To balance these changes, we
correspondingly changed the aperture
of a variable focus lens. This method
proved to be quite good, because the
aperture changes did not practically
affect the uniformity of brightness dis-

tribution on a frame area within a camera. A special device had been also designed for using the "Pentovar" zoom on a frame-to-frame projector PPU-3 for second exposures.

Cardboard masks (mattes) and counter-masks of proper sizes and configurations were installed in the intermediate plane on a collective lens between the projectors and the camera in place of the control ground glasses. When necessary, glasses with counter-masks of corresponding shapes were inserted into these notches. The sketches of these masks were designed by a film visuals designer, A. Brusilovsky. Their composition in an optical printer, as well as the position of counter-masks, was controlled visually through the camera viewfinder.

The smooth transition of images was accomplished by means of a frame-by-frame exposure of masks. A set of interchangeable masks was provided for each scene (42 pieces per 1 meter of film) to provide a smooth change of size and shape of images.

The Selection of Original Materials and the Final Composition of Scenes

The basic problem in a varioscopic multiple-image production, the essential part of which consists of composite photography, is a very careful pre-planning of all components of each scene. In the very beginning, one has to design the sketches of future scenes. Keeping in mind the selected photographic material, the visual designer should specify in his sketches the number, the shapes and the sizes of images in a multiple-image frame. The experience has shown that photo-montages were very useful for this purpose.

Since most of the chosen originals for multiple-image sequences were the fragmentary scenes from various films, they were re-photographed from the screen during their previewing and selection. Later, a visuals designer specified the sizes on the prints. The still photographs of selected scenes were assembled and pasted on a piece of cardboard forming a photo-montage with aspect ratios in accordance with the format of a future film.

The length of the multi-image sequence is usually from 10 to 50 meters, and sometimes even more. Considering that the images change their shape and size on the screen, several sketches (Photo-montages), sometimes up to 10-15, had been prepared for each scene.

It was necessary to achieve the uniform photographic characteristics of dupes during their printing from different original materials which had to be



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selected very carefully, considering this problem.

The practice of optical printing has shown that all individual scenes selected for future multiple-image composites should be prepared bearing in mind their scale and position on a composite multi-screen frame in accordance with the demands of the script.

In the case of fades, dissolves or some intricate inter-frame movement, it is desirable to prepare all this well in advance on the optical printer, in order to simplify the time-consuming image registration procedure. This also refers to such scenes as collapsing staircases, animated titles, falling-to-pieces image of a crowd and other special effects which were photographed beforehand, simultaneously with optical printing. It is possible to photograph these separate scenes directly upon a 70mm film (for instance, scenes with animated signatures). In the case of inter-positives, better photographic results are always achieved by re-shooting them on a 70mm film.

The Editing of Multiple-image Sequences

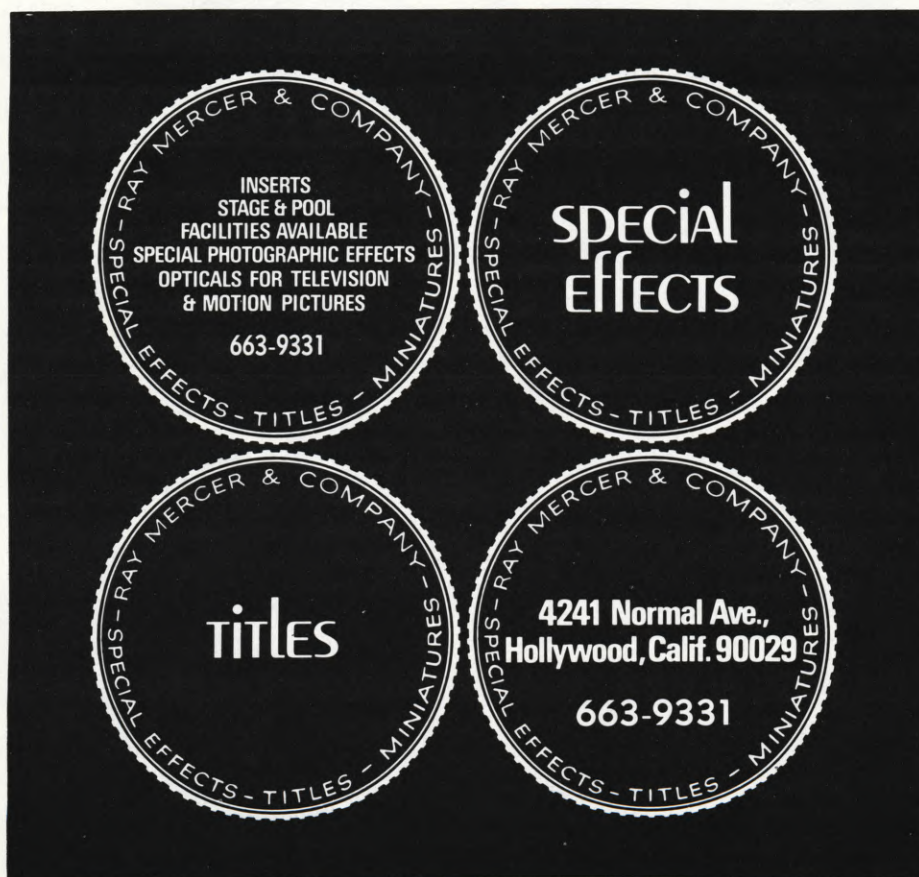
The editing of multiple-image sequences is one of the basic and the most important creative processes in the production of varioscopic multiple-image films, involving a difficult task of handling several strips of film at a time. For this purpose, the editing table was provided which allowed the simultaneous running of as many as 12 separate strips synchronizing the beginning and the end of each scene. To check the coordination of movements, and the timing and the position of each scene within a frame, these strips were projected upon a screen by a special projection system consisting of seven projectors remotely controlled from a single console. By changing the distance between the projector and the screen, one can get some visual idea of a future multi-image composite.

Each edited reel with multiple-image composite sequences was correspondingly identified. This assembled footage served as a guide for editing the inter-positives.

The establishing graphical designs of compositional sketches with accompanying short descriptions were used for shooting the final multiple-image composites.

The Photographic Process

The shooting process of multi-image sequences was preceded by careful preparations. The dupes which the Director of Photography receives may have different formats and, consequently, a



different number of shots in one meter of film. Some scenes should be re-photographed on the optical printer for obtaining special photographic effects, etc. For this purpose, a detailed "blue-print" had been prepared which contained all the necessary details for a photographic process. The main problem was the matching of density and colour.

Sound Recording

The sound recording process in the film "OUR MARCH" was rather complicated, considering a large variety of components.

Speech and sound effects were recorded in sound studios with simultaneous projection of black-and-white dailies in cinemascope format. To simplify the subsequent re-recording process, sound effects were recorded on two separate magnetic tapes for the left and the right sides of a screen. The music was recorded by multichannel stereophonic technique. Many novelties were introduced into the sound recording technology.

At the International film contest in Paris during the 9th UNIATEC Congress in 1970 the film "OUR MARCH" was awarded for special technical achievements. ■

Translation of an article published in "Technika Kino i Televidenia" Journal (USSR) No 1, 1971.

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SOVIET FILM-MAKING

Continued from Page 951

KIEV

If this pleasant city, capital of the Ukraine, appears to have many areas that seem relatively new and modern, it is because those areas were leveled to the ground during Hitler's furious assault on the city during World War II. Now everything is peaceful and calm along the picturesque bend of the Dnieper River that curls through the center of the city.

We are greeted at the airport by Prof. Kudin Vjatsheslav of the Kiev State University and a lady colleague whose name, unfortunately, escapes me at this writing. She presents me with a bouquet of beautiful wild flowers which she has personally gathered in the fields and I am deeply touched by this generous gesture of friendship.

Our first official stop turns out to be one of the most fascinating highlights of my trip to the USSR. It is a visit to the Popular Science Film Studios "Kiev-nautschfilm", a magical place where scientific films are made on a popular level for showing to the public and in schools. We are given a conducted tour of the studio by Mr. Yevgeny Zagdansky, Editor-in-Chief and Mr. Felix Sobolev, film director and State Prize Winner of 1972.

I learn that this studio turns out more than 400 films annually. About 100 of these are educational films for schools and colleges. Another 100 are advertisements for television and theatres. About 50 others represent a sharing of work in some scientific field and are used to train people for new professions. There is a number of work safety films and about 60 "popular science" films designed to depict the achievements of science for general audiences. A considerable number of children's films are made, utilizing both cell and puppet animation. Finally, the studio produces a monthly film "magazine" called "AGRICULTURE OF THE UKRAINE", which functions to acquaint the people with new techniques in agriculture.

I ask how the subjects for these films are selected.

"Some of them are proposed by the writers and directors who will work on the films," I am told. "Others are commissioned by various government offices and ministries—such as the Ministry of Higher Education, the Ministry of Transport or the Ministry of Industry. There are specialized theatres where some of the films are shown and others are shown in schools and colleges. Much of what is produced here is also shown

on television."

We are next shown several short "popular science" films that were produced in this studio. They are all superbly made, but the real mind-blower of the lot is part of a series called "DO ANIMALS THINK?". This segment, a *tour de force* of macrocinematography, is devoted to the incredible behavior of ants and bees.

The most amazing scene in the picture is what appears to be a "follow shot" of a bee in extreme closeup and held centered in the frame as it flies through the air. My hosts let me in on the secret: "The bee was actually fixed on a long metal pin, which was behind its body so that it could not be seen. A background of flowers and sky was moved behind the bee to simulate flight. The only problem was that we couldn't get the bee to fly for the camera. Then someone recalled that a bee has a phase of instinctive flight just after it stings someone. The assistant cameraman held out his finger so the bee could sting it. Then the bee got excited and started to fly."

That's what I call sacrificing one's self for one's art!

"Part of the success that we have had at this studio is due to people who are closely watching developments in various fields of scientific endeavor and who keep in close touch with us," I am told. "Creatively and technologically it is a constant challenge, however, because in our age of acceleration things change so fast that they quickly become obsolete. Therefore, we have to keep constantly updating our methods of filming in order to stay in the front line of science. Working through the language of experimentation on the screen gives people a sense of participating directly in the experimentation and provides them with the means to develop a scientific way of thinking. That explains some of the success we've gained here. This studio has received more than 150 domestic and international awards."

I can well believe it!

While in Kiev, we also pay a visit to Studio Dovgenko. This is a studio founded by the late great Ukrainian film master, Alexander Dovgenko and there is a very interesting small museum dedicated to his memory.

The studio, set in attractive parklike surroundings, has a "homey" feel to it and we are given the tour of facilities by Technical Director Vladimir Trusko, who tells me: "We are producing 26 full-length features annually at this studio—12 for theatre release and 14 for television. Half of these are in color and half in black and white, but I believe

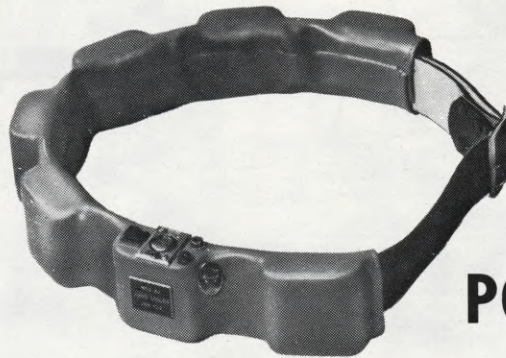
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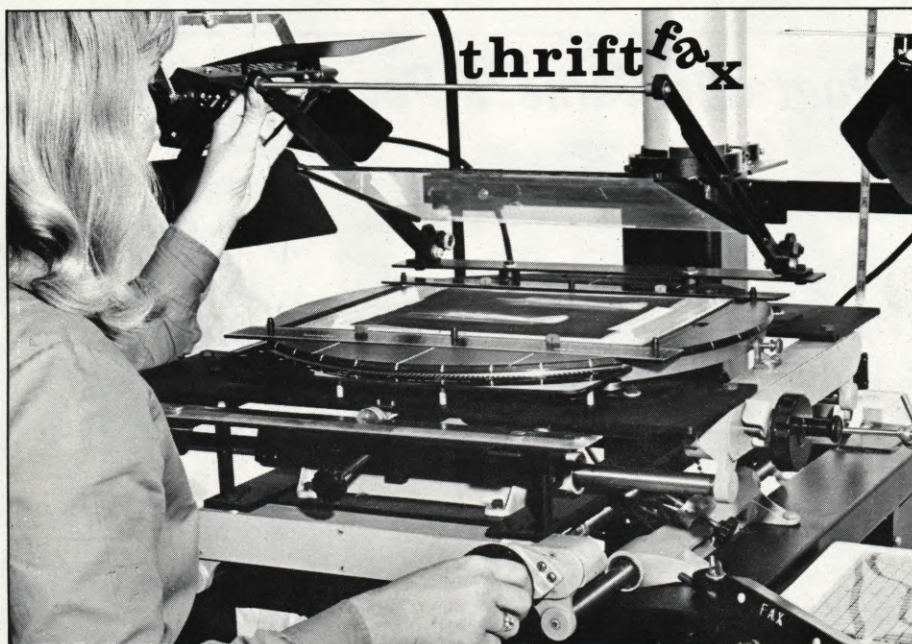
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that in the next few years we will switch to color completely. It's not a problem of technology, but rather a matter of creative approach. Not all of our directors want to shoot in color."

We are invited to screen two of the films made at Studio Dovgenko and they are both beautiful pictures. The first is called: "THE WHITE BIRD WITH A BLACK SPOT" and is a period film having to do with the Ukrainian peasantry. It is very well acted, directed and photographed in color.

The other film is a rousing epic in 70mm color, based on a classic book by Ukrainian author Ivan Franko and called "ZAKAR BERKUT". It is a rousing, spectacularly staged reenactment of the Tartar invasion of what is now Kiev, which took place in 1242 A.D.

BACK TO MOSCOW

We return to Moscow and I visit the Central Documentary Film Studio, where Mr. Anatol Koloshin screens for me several of the excellent short documentaries made there.

We are rejoined by Dr. Wysotsky, who accompanies us on a visit to the quite incredible Cinema and Photo Research Institute—NIKFI (*See Page 930*). Here I have a chance to renew acquaintances with Deputy Director Igor M. Bolotnicov and his colleague, Dr. Naham Bernstein, the two very cordial gentlemen who were kind enough to conduct me behind the scenes of the spectacular film presentations in the Soviet Pavilion at EXPO 70. It is also a pleasure to meet again NIKFI Director Prof. Victor G. Komar, whom I had originally met at an SMPTE Conference in the United States.

On my last day in Moscow, Miss Epstein asks me to come to the Dom Kino early in the evening and I arrive about 10 minutes late, due to slow service in a restaurant. I am very embarrassed (and also very complimented) to find awaiting me about 50 of the very top artists and technicians of the Soviet cinema industry. I apologize for having kept them waiting and we settle down to a most interesting roundtable discussion of production methods in our respective countries.

I leave the Soviet Union with fond memories of the cordial welcome extended me by the Association of Film Makers of the USSR, all of the help (beyond the line of duty) provided by the long-suffering Volodya, and the warm communications I have enjoyed with the many talented film technicians it has been my pleasure to meet and come to know during my visit to their country. ■

70mm CAMERAS IN USSR

Continued from Page 945

70-mm films in both directions with the time of projection of each frame ranging from 0.5 to 2 sec.

Capacity of spools—60 m.

The film moves intermittently, driven by a claw mechanism with a pilot claw.

The spherical pressure gate precludes the film from warping at the gate when it is heated by the stream of light passing through it, which serves to preserve the constant smoothness of the film. The stability of the frame in the gate is secured with an accuracy of 5–8 micromillimetres.

The feeding device is driven either manually or by the single-frame motor 24-M5.

The light source—K-22 projection lamp (30 volts, 400 watts) and an optical system of the projector (3-lens condenser and projection lens OKN1-200-1; F=200; 1:3.5)—guarantees screen illumination of about 1,000 luxes on a 500X230 mm screen.

The glass heat-filters preclude the film from overheating at the gate, which secures the definition of the image on the screen for 7–10 min. without blowing off the film.

The lamp is installed in a lamphouse of the hanging type, which has a device for registration of the lamp and is fed by a regulator which allows for a smooth changing of voltage from 0 to 30 volts.

The projection head of the projector can be rotated around the optical axis to an angle of $\pm 120^\circ$.

It is possible to install on the projector three light-filters in separate holders. The projector has a frame counter.

The projector operates from electric mains of one-phase electric current of 220 v (for the motor) and 127 v (for the lamp) and 50 hertz frequency.

Dimensions—500X700X280 mm.

Weight—48 kg.

The "70-TM" Machine for Optical Printing

The "70-TM" machine is intended for obtaining various composite shots by means of special optical printing method.

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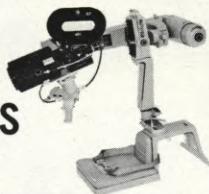
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Besides that, the "70-KCK" camera makes it possible to perform contact printing of the image with illuminating the frame gate by the single-frame projector.

The single-frame projectors and the cine-camera are driven by the single-frame motors "24M-5" and secure the frequency of no more than 1 frame per second.

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The term "experimental film" will be interpreted as embracing all works created for cinema or television, which attempt to regenerate or to extend the film as a medium of cinematographic expression. The Competition is restricted to films not previously shown elsewhere. Exceptions to this ruling may be presented by the Selection Jury to the organizers of the Competition.

In addition to the Film Competition, a series of non-cinematographic art expressions (music, drama, arts, video) will be scheduled during the Fifth International Experimental Film Competition. Provoking encounters between artists belonging to different disciplines, the programs will offer a survey of recent experiments in the arts.

Persons interested in EXPRMNTL 5, either as non-cinematographic participants or desirous of entering the Film Competition should contact: EXPRMNTL 5, c/o The Royal Film Archive of Belgium, 23 Ravenstein, B-1000 Brussels, BELGIUM. Tel: 13.41.55. Cables and Telegrams: TLX 230.22. Telex: 230.22.

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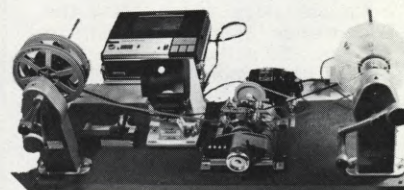
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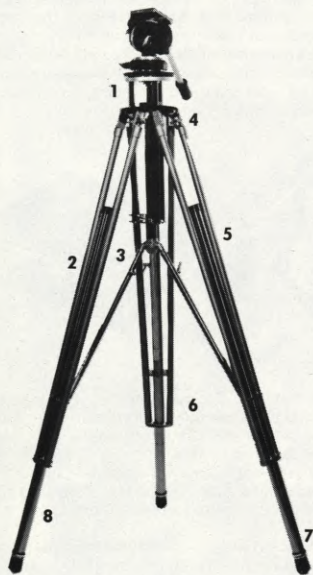
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CINEMATOGRAPHY INSTITUTE

Continued from Page 941

mov-Strazh, E. Bogorodsky, B. Doubrovsky, Bela Balas, V. Volkenstein, I. Pyriev. For several years directors G. Kosintsev, G. Roshal, S. Youtkevitch, G. Alexandrov, Y. Raizman taught directing at the Institute.

Let us turn back to 1919; there were only 25 persons at the Cinema School then. Now over 1600 people are studying at the day, evening and correspondence departments of the Institute of Cinematography. They represent 32 nationalities of the Soviet Union.

Among this friendly multinational student family there are many envoys from all continents—Europe, Asia, Africa, America, Australia.

In one of the classes there is a big map of the world on a wall. Both hemispheres of it are dotted with many little flags. Each flag represents a country which has sent its students to the Institute. There are over sixty countries altogether. Some students have come from countries with a highly developed cinema with strong traditions, and some from countries where the cinema is making the very first steps and the basis for a national cinema industry is just being laid. There are flags of Japan and Tanzania, England and Nepal, Mexico and Switzerland, Ethiopia and German Democratic Republic, Argentine and U.A.R.

Foreign students study according to the same programme as the Soviet students. They have just as wide choice between the cinematic professions.

Students from abroad are admitted to the Institute in accordance with the governmental agreements on the cultural and scientific exchange. Admitted to the day department are only people under 35, irrespective of their nationality, sex or religion. For an applicant it is necessary to present a school graduation certificate, for the post graduates—a diploma. Those who do not know Russian at all may join a special preparatory course for a year. Education at the Institute of Cinematography is free of charge for all students. Students are provided with scholarships and room at the Institute's Hostel.

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There are also general subjects for all students, such as the history of philosophy, aesthetics, psychology, political economy, Russian, Soviet and foreign literature, the history of world cinema and art, the theory of music, foreign languages.

A vast programme of scientific and research work is done at the Institute. Future scientists and pedagogues are trained at the post-graduate course. In 1963-70 there were maintained about 40 theses for a Master's Degree and six theses for a Doctor Degree.

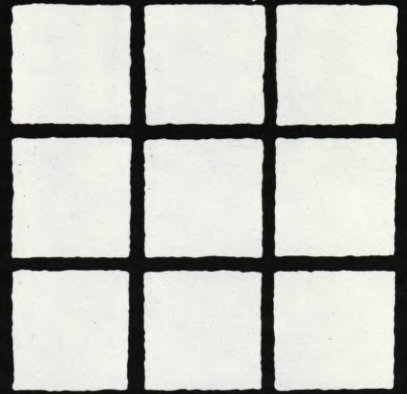
The Scientific research Department of the Institute constantly publishes special textbooks and manuals, shorthand reports of the lectures and works on directing, scriptwriting, camerawork and acting technique, as well as the theory and history of the Soviet and foreign cinema.

The library of the Institute comprises about 180 thousand volumes. Its collection of the special literature on cinema problems is unique.

The film library numbers over three thousand Soviet and foreign films. All the most important and famous works of the world's leading film-makers are represented here.

From the very beginning the system of creative studios was adopted as the leading system of education at the Institute. The first studio was founded in the twenties by a talented director and pedagogue, Lev Kouleshov. "The studios have become a practical system of education at all the faculties of the VGIK"—writes professor Sergei Guerassimov. "Constant personal contact with the master during the whole course of training gives the students an opportunity not only to adopt their teacher's creative and professional experience, but also his world outlook, his ideology and aesthetic

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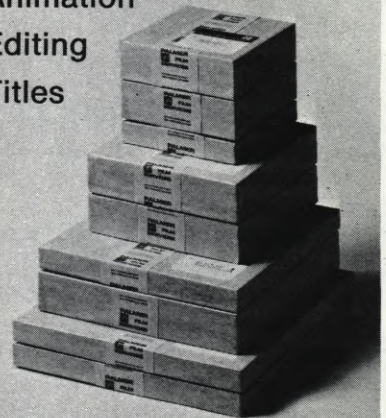
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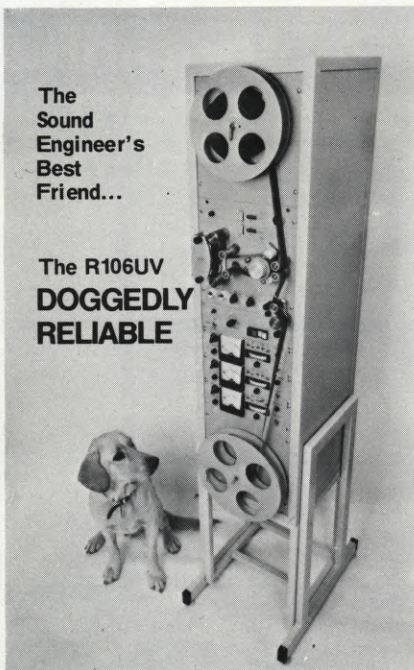
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views, that is the main thing that unites all Soviet artists, allowing at the same time for each of them to stay original and inimitable."

In 1966 a new block was added to the Training Studio of the Institute. It is a modern building with a total space of five thousand square meters and a capacity of shooting 250 reels annually.

Four stages with the most modern equipment make it possible to film various subjects from the smallest chamber sequences to large scaled spacial scenes.

The Studio's capacity is perfectly sufficient for educational purposes. Beside students' course works, some of the graduation works are also filmed at the Studio.

Various types of films are produced at the Training Studio: features, documentaries, popular science films, instructional and animated films.

A new device was recently added to the Studio's equipment: a television network of the "regional" type. Three channels of the Institute's TV are for direct reporting from the place of events; the fourth is reserved for film library material.

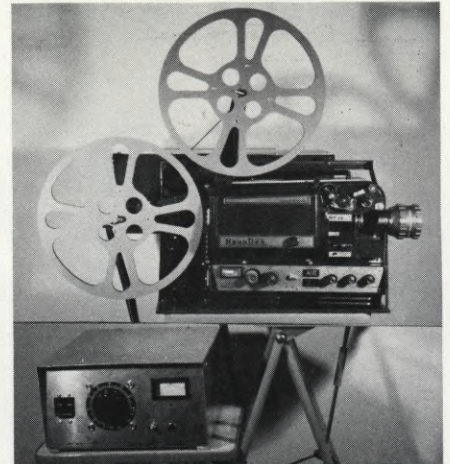
The whole educational process is actually pursuing one important aim, to let the students learn their lesson creatively, to make them defend their own opinion in a discussion. That is why a system of creative discussions is widely practised at the Institute. Each year a theoretical conference on the results of the cinematic year and a traditional Student Film Festival are held in the Assembly hall.

It is often said about the VGIK: "The future of the Soviet cinema is created here." This is true, and one can add to this: "... and the present also."

The best films of the last ten years have been made by VGIK graduates. Here are just a few titles: "Destiny of a Man", "War and Peace" by Bondartchuk, "Ballad of a Soldier" by G. Tchukhrai, Tcheheidze's "A Soldier's Father", "Nobody Wanted to Die" by Zhelakya-vitchus, "Chairman" by Saltykov, "The Blue Notebook", by Koulidjanov, "Hello, It's Me" by Dovlatyan, "Ivan's Childhood" by Tarkovsky, "The First Teacher" by Kontchalovsky, "The Elusive Avengers" by Keosayan, "Falling Leaves" by Yoseliani and "There was a Guy" by Shukshin.

Almost everything significant that has been done in the Soviet cinema during a long period is somehow or other Connected with the graduates of the USSR State Institute of Cinematography. Many interesting things yet await them. In their hands lies the future of the great art of the millions.

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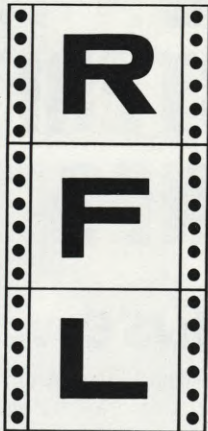
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Continued from Page 963

tal composition offers unlimited creative possibilities.

On the plane bottom of the cuvette it is possible to imitate various nature phenomena, such as clouds, whirlwinds, sand-storms, flares, lava-streams, smoke, boiling of melted metal, sea waves, and also minerals, mountains, woods. The given method is especially valuable for shooting scenes for fairy tales and fantastic films. When the necessary skill was gained and a big number of "effectively contacting" solutions found, experimental shooting began. For this purpose a simple unit was built.

The "Mitchell-Rapid" camera was used for shooting. The main lens (Soviet make)—"Industar-23", $f=110m$.

The anamorphic attachment used was the "Satec" (France) with an extra lens, $f=220mm$, $d=90mm$ (plano-convex). This lens caused aberration and reduced image sharpness. Therefore, the relative aperture 1:8 to 1:22 was chosen for shooting. Illuminator "Babic" with an incandescent bulb 110 V, 500 W without Fresnel lens served as a light source. As scattering medium, a sheet of arcasole 150x150mm size was used.

A condenser of two 250mm diameter plano-convex lenses produced a powerful light flux that ensured shooting at 24 frames/sec rate, even with $f/32$. The horizontally positioned cuvette was slightly inclined (up to 10°) in various directions for shooting the draining liquids.

Attention should be paid to one of the peculiarities of shooting. Since the picture, produced in the cuvette, did not contain, as a rule, details familiar to the viewer it was possible in most cases to shoot without the anamorphic attachment.

Such scenes spread two times on the screen but their artistic quality did not suffer from it. In case it was necessary to show on the screen round or spherical objects—for instance, planets or the sun—an anamorphot was used. The size of the shot area in the cuvette ranged normally from 100 to 10 cm^2 .

Camera and lens vibration often interfered with shooting of small areas and to get rid of this, different means were used such as change of shooting rate. If, with test starting of the camera at 24 frames/sec rate, image vibration in the magnifier was observed, the shooting rate was changed. Sometimes at 30 or 20 frames/sec the vibration disappeared. The relative apertures ($f/8$ to $f/22$) ensured the depth increase of the sharply representable space, which permitted us to shoot the foreground

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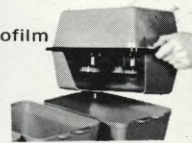
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details in some scenes depicting cosmic landscapes.

The powerful light flux, and also the fact that the shot objects were almost always transparent, permitted us to shoot not only on colour films Type DS-5 and LN-5 of Soviet make, but also on low-sensitive black-and-white and colour positive films and raw stock for sound recording.

Experimental work aimed at choosing such optimum conditions and means of shooting that would allow us to extend the creative possibilities of the given method, made possible the use of the following process: a dynamic picture is shot on black-and-white film, the latter is developed and then, from a contrast negative, a contrast positive is printed on the same type of black and white raw-stock. Let us call the two obtained films mask (negative) and counter-mask (positive). Further shooting is made by "bipack" method. The mask is loaded in the camera in contact with colour negative film and some chemical mixture is shot. After that the mask is replaced by the counter-mask and another chemical reaction of different colour and dynamics is shot. A ready-made composite shot contains three combined images.

Other methods of composite shooting, based on those already existing, have been developed. For instance, the one involving single-frame projection. Dynamic mixtures were shot at a rate of 1 frame/sec against the single-frame projected background of earlier-shot chemical reaction.

When it became evident that, by this method, the required quantity of interesting scenes can be shot, a script was written and, after a three months' period of work, an experimental film of fabulous genre consisting of two reels was edited. It was given the title "SPACE, EARTH, SPACE". This wide-screen film shot on raw stock DS-5 and LN-5 shows, in a conventional stylized form, against the background of music and noise effects, the pictures of space depth: Thickening of space dust; formation of earth; appearance of first life embryos in original medium; origin of flora, fauna, human race; stormy activity of people; conquest of the atom; breakthrough into space and landscapes of other planets. The film ends with a scene signifying the triumph of life in the universe.

In October 1970, in Paris at the VIIth Congress of UNIATEC the film "SPACE, EARTH, SPACE" won an honorary prize. There are more than a hundred composite scenes in the picture. The sound director of "Mosfilm" N. Lyubchenko and the composer O.

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Karavaichuck worked on the picture.

We shall try to explain how some fragments of the motion picture were made.

1. Beginning of the film—the process of substance thickening in the depth of the universe. The particles are poured together into a fiery ball.

For making such shots various liquids were poured in the cuvette as "media", namely: water, polish liquid soap FF, shampoo, coal-tar liquid soap. As a dynamic element, a mixture of benzine and block oil paint was used. A drop of D.E. was poured on the required area of the "medium" plane. The drop began running in various directions. The shooting was run in reverse. Since it was necessary to have in that scene light movable details against a dark background, the negative instead of positive picture (dyed in orange colour) of the process was used.

2. Lava streams.

To shoot the lava a thick mixture of following composition was prepared:

- small swollen-in-water pieces of laundry soap;
- glycerine;
- silicate glue;
- black gouache;
- orange or red aniline dyes.

The mixture slowly flowed down an inclined piece of glass. Shooting was made at a normal rate in transmitting light.

3. Life originates—alga and co-cervate drops appear in water.

In the scene—the green-brown mass of the original medium with movable drops, beads, lively points. For shooting, a layer of synthetic resin TF in dichloroethane of 2-3mm thick was poured on the bottom of the cuvette. Brilliant green and a tincture of iodine were used as D.E. Some drops of the chemicals were put on the surface of the "medium" so that they did not contact each other. When running, the drops mixed, forming a live multi-coloured picture resembling the natural micro-world in a drop of water from a bloomy pond.

4. The first green sprouts appear.

To execute the shooting, a thin layer of thickened glycerine (perfumery for hand) was put by means of a brush on the cuvette bottom. Green ink with a 5% addition of Eau-de-Cologne served as D.E. The drop spread over the glycerine layer like a branch plant.

5. Origin of the human race.

The phenomenon was shown in the film symbolically—dynamic colourful landscapes resembling cities appeared on the screen. A piece of copper grid of 120x120mm size with 0.2x0.2mm holes was used for shooting.

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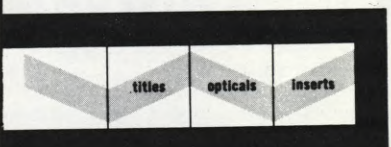
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Preliminarily, by means of black gouache paint, a silhouette of a city was simulated on the grid in such a way that, in the places of buildings, the grid remained clear, but in the "sky"—painted, before the camera started working—the "buildings of the city" were covered with pure acetone by means of a wide soft brush. After that, the whole grid field became practically opaque for light beams, since each cell of the grid (window of a building) filled with acetone turned into a strong negative lens.

As the acetone was evaporating the acetone lenses in the cells burst and the camera lens "saw" a window "lighting" in the house.

6. "Atomic explosion".

A 2mm-thick layer of Eau-de-Cologne was poured on the bottom of the cuvette. The cuvette was slightly tilted, but in such a way that the bottom was not revealed. Black ink served as D.E. A small puddle of ink encircled by Eau-de-Cologne flowed slowly down toward the inclined side of the cuvette. While moving, it acquired a dynamic form and a contour, due to edges diffusion in the Eau-de-Cologne. A boiling cloud was formed resembling the ball of an atomic explosion.

The picture image was negative.

7. "Pulsar".

On the screen it looks like a white pulsating circle, from which, in radial directions, arrows of radiation fly out.

As "medium", a mixture of almost equal proportions of water, alcohol and glycerine was used. For the preparation of D.E. mixture TF resin, dichloroethane and drops of black ink were used. The resin was dissolved in dichloroethane in order to thicken it; upon being shaken the ink put into this solution formed a lot of small black balls of 0.1 to 1mm in diameter. The "medium" was poured into a vessel with a concave bottom—a watch glass 100mm in diameter. The concave bottom was required to prevent the puddle of D.E. from moving outside the centre. A small portion of D.E. put in the "medium" remains in the centre as a circle 15-20mm in diameter, since dichloroethane does not dissolve in the mixture of water and alcohol. The balls of ink in the mass of D.E. do not remain immovable. They rush in different directions, resembling living organisms.

The movement is caused by energetic evaporation of dichloroethane in that part where D.E. comes into contact with the air. While moving, the ink balls sometimes approach the place where D.E. contacts with the "medium" mass and, since the ink dissolves well in the mixture of water, alcohol and glycerine,

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the ink balls move instantly into the "medium". The break through the border, resembles the black arrow flying into the transparent "medium" mass. Such fly-outs are presented in the film in negative images symbolizing light "pulsar" radiations.

By pouring together solutions of different densities and colours, one can rarely obtain a finished shot. Generally, the produced picture lacks some dynamic, colour and compositional elements and, therefore, before shooting, it is important to analyze the prepared pattern and add it at the moment or later by means of some other elements. As such, a spring of whimsical shape, a piece of mineral or an artificially made mould of fusible metal can be used. For this purpose, tin was used, poured into water in the molten state.

When filming the scene, the cuvette with the prepared liquid pattern was covered by a piece of glass so that a space of 5-10mm was left between the water and the glass. A foreground object was put onto the glass. In such a way, a strange planetary tree was made. For shooting some other scenes, miniature aquariums of 0.5 litre volume were used. The following shots were made in the aquarium: eruption of a volcano, fantastic pale blue forest, growth of brown plants.

For shooting other different scenes, the following substances were made use of: water, Eau-de-Cologne, ethyl alcohol, spirit varnish, glycerine, sugar syrup, shampoo, acetone, dichlorethane, solution of TF resin, iodine, benzine, liquid soap, dibutylphthalate, oil paint, aniline dyes, fountain pen ink, nigrosine solution, aluminium powder, tin, brilliant green, nitro lacquer, hard soap, linseed-oil, gouache, blue vitriol copperas, sulphate iron, silicate gum, potassium sulphocyanate.

The cameramen and the designers of composite shots can use the above-mentioned chemical mixtures as a means for shooting not only scenes for fairy tales and fantastic films, but also quite realistic ones. For instance, the episode depicting liner destruction in the picture "THE COMMITTEE OF 19" was made using this method. This new "method of producing motion picture effects"—as it is called in the author's certificate (patent)—will undoubtedly find wider application in future, since there is hope that a much greater number of features about interplanetary journeys and other worlds will be shot at our studios.

It has become known now that the science-fantastic film "EOLOMEYA" of the DEFA Studio includes several scenes from "SPACE, EARTH, SPACE".

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Those fragments of the film "SOL-YARIS" which show the surface of the fantastic "planet-brain" were also shot by this method.

The director of special effects photography, V. Sevostyanov, and designer A. Klimenko used the dynamic pattern formed on the surface layer of acetone and aluminium powder mixture. In the given instance, the pattern resulted from the acetone's intensive evaporation in the contiguous-to-air surface layer. Over 100 metres of the film were shot by this method.

Research work has not been stopped. At present many new "effective pairs", threes and fours of substances and solutions, have been found. The unbounded world of chemical compounds provides us with an ample opportunity for experimenting and discovering new effective chemical mixtures.

At present, the colour problems of various musicals are being solved, using the above-described method.

This method of producing the motion picture effect has been given an author certificate for invention No 305445 (author—B.T. Travckin, with priority of January 4, 1970, published in the bulletin "Inventions" No 18 July 12, 1971).

In conclusion, it should be noted that the described method of producing the motion picture effect also ensures a considerable economy, since it permits us, in quite a simple way, to present on a screen very interesting composite scenes, which either would be shot using rather complex and expensive means or not shot at all.

* / Translated from journal "Technika Kino i Televidenija" No 11, November, 1972 (USSR)

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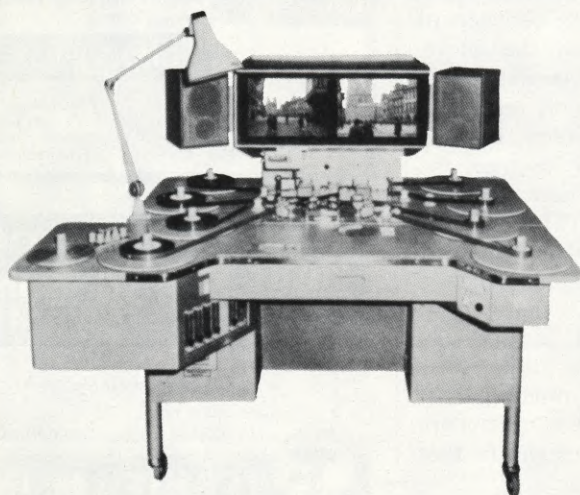
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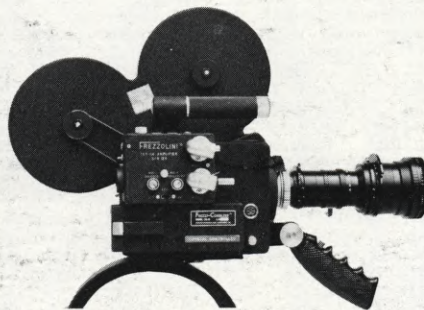
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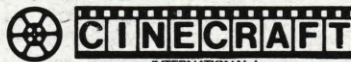
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PHONE: (201) 427-1160



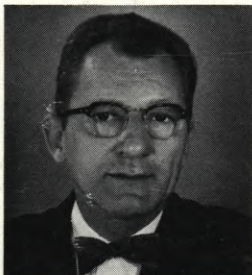
Right side
view
showing
amplifier

byron/ changing and growing because you do

Customer Service, your representative in the lab, reports directly to Sales.

Our men managing sales in both tape and film are fully competent to consult on the technical aspects of your job.

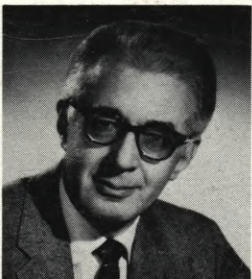
Our top management reflects the extensive background of our staff in all areas of tape and film.



Byron Roudabush
President
President SMPTE &
Past Pres. ACL



Dudley Spruill
Executive V.P. &
General Manager
Past Pres. ACL



Neal Keehn
V.P. Sales & Services
Past Pres. ACL



tape

Fully equipped post production center

Volume 3/4" cassette duplication

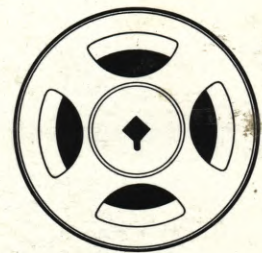
H.S. 200 computerized editing system

2 inch high speed duplication

Permanently installed long lines for transmitting and receiving

Digisonics tape coding system

To come: CBS Laser Beam Color Film Transfer Recorder



film

Complete post production services

7247/5247 Eastman color negative developing

High production panel printers—16mm and Super 8

Eastman and Hazeltine color analyzers

Liquid gate optical printer—reductions, blow-ups, 1 to 1 printing

35mm slides and filmstrips—including negative photography

And of course, Tape to Film transfers

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