

# American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

October 1974 / one dollar

*Pg 12/10*

~~ALW~~  
~~EMM~~  
~~ADB~~  
~~EJB~~  
~~WEG~~  
~~MMM~~  
~~JLR~~  
*Ret to New Office*



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# POST INVENTORY

# SALE

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City ..... State ..... Zip .....

— Trades accepted! Satisfaction guaranteed or money back within 10 days! —

### 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 Panchro 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 Panchro 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 case. 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 Panchro BNC mount .....	used	175.00
28mm F/2 Schneider Xenon Arri mount .....	used	150.00
35mm F/2 Cooke Speed Panchro 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 Panchro 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 Panchro 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 Panchro 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 Panchro BNC mount .....	used	175.00
100mm F/2.6 Cooke Kinetel Neutral mount .....	new	198.00
100mm F/2.5 Cooke Deep Field Panchro 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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camera department and see why so many motion picture credits say: "filmed in Panavision."



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# "My competition is starting to notice me."

When I opened Mobius Cine almost two years ago, I received six good luck cards and one potted plant from my competitors.

I've since lost the cards, the plant died, and my competitors treat me like a bad rash.

I can't say that I blame them.

With me around, the competition has

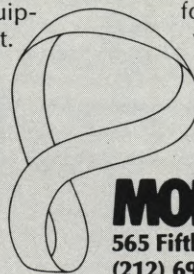


had to take a long hard look at their pricing structures on motion picture equipment. My prices are rocking the boat.

They've also discovered that expedience is no substitute for selling the right equipment for the right job. I don't look at customers with dollar signs in my eyes. Now they won't be able to, either.

It seems that the more customers who get comfortable with

the way I do business, the more uncomfortable my competitors get. So if you're a legitimate competitor, I'll be happy to send you a Sy Cane dart board (at cost, of course). It'll help you get rid of some tension.



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# American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

The American Society of Cinematographers is not a labor union 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 initials A.S.C. after their names. A.S.C. membership has become one of the highest honors that can be bestowed upon a professional cinematographer, a mark of prestige and distinction.

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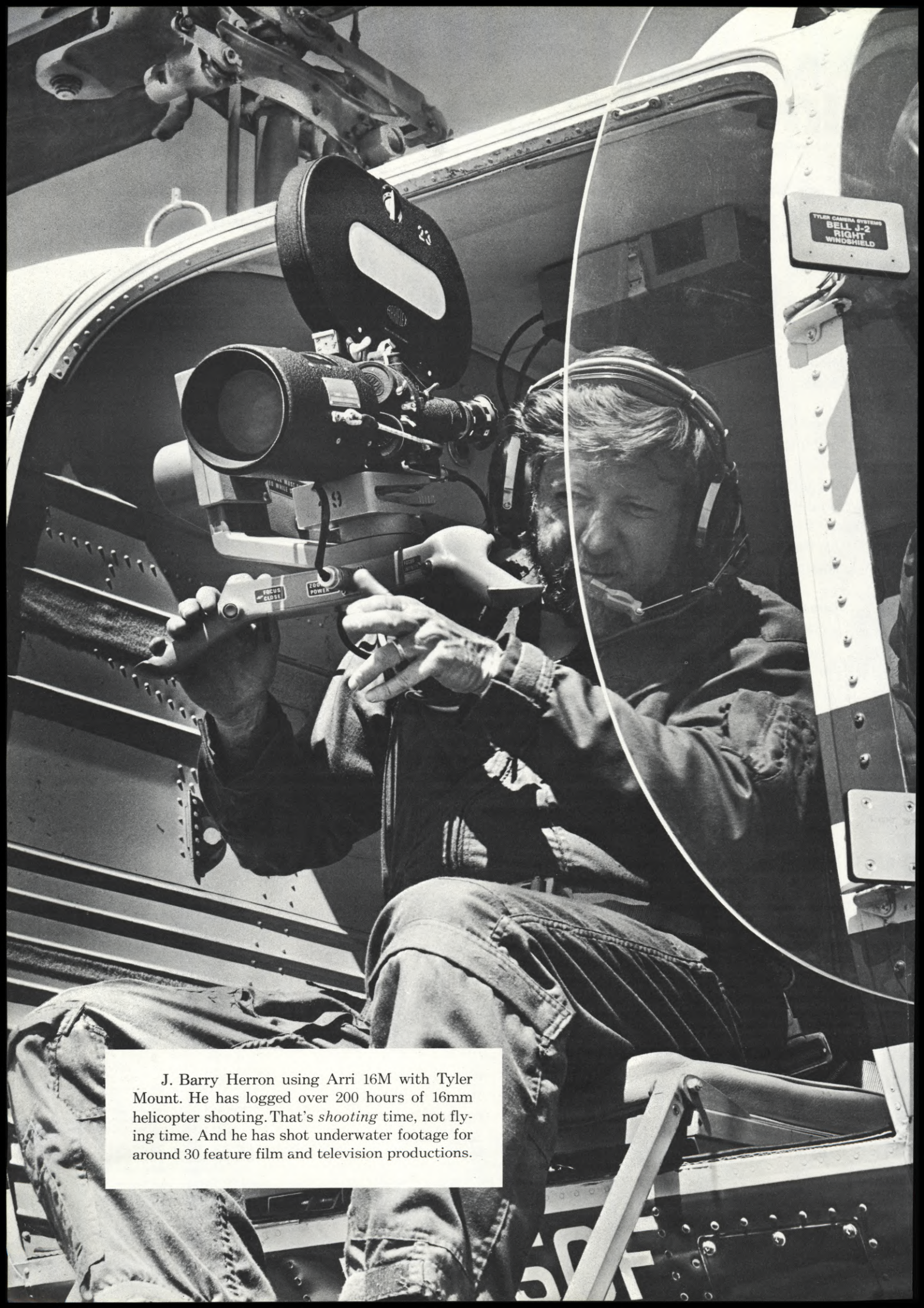
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ON THE COVER: The official symbol of EXPO '74, the World's Fair at Spokane, Washington, surrounded by views of the Fair. Color photographs of EXPO '74 on cover and following pages by TOM SALYER and CHARLES R. PEARSON. Cover design by DAN PERRI.

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J. Barry Herron using Arri 16M with Tyler Mount. He has logged over 200 hours of 16mm helicopter shooting. That's *shooting* time, not flying time. And he has shot underwater footage for around 30 feature film and television productions.



# In flying dollies and underwater rigs, Arriflex is the chosen camera.

Helicopter and underwater shooting have a lot in common. They're both *fluid*, and both are costly. And, more than usual, you're at the mercy of your equipment.

**C**lose-up: Faces of two people looking at camera. Pull back slightly. They're looking out at you through window of moving train. Camera is tracking beside train. See part of compartment, one wheel turning.

## Airborne Dolly

Pull back and round *in front* of train. It's on a trestle bridge, over water. Pull back again, and way up. Zoom out slowly. Trestle bridge is now a thin line surrounded by 1,700 square miles of blue water. Train is about 15 miles from shore, and barely visible below.

That's Barry Herron's establishing shot for the Great Salt Lake. Part of a series of ABC-TV Specials called "The American Idea," and produced by Alan Landsburg.

## Sunken Treasure

For another documentary Special, called "Treasure," and sponsored by the National Geographic Society, Mr. Herron



J. Barry Herron using Arri 16S with 400 foot magazine inside Birns & Sawyer underwater housing.

shot divers searching for sunken Spanish Galleons off Key West. First, a three-hour, 60 mile boat ride to the search site. There, currents were so strong that he could shoot only at slack tide—about an hour.

## Budget Strained

Helicopters cost up to \$200.00 an *hour*. It sometimes takes several hours to fly to the location. You frequently have to spend at least an hour teaching a new photo pilot how to maneu-

ver for the camera. Once you get there, you'd better get the shot.

## "Did You Get It?"

"It's the same with underwater shooting," says Mr. Herron. "You call the producer, with the film in the can beside you, undeveloped. Almost always, the first thing he says is: 'Did you get it?' You say: 'Yes!' You hope you're right."

## Depend On Arriflex

"On the ground," says Mr. Herron, "I've used several makes of camera. But up there and down there, I use *only* the Arri. Things can and do go wrong with helicopters, scuba gear, outboard motors—you name it. But in fifteen years, I've learned to depend on Arriflex."

# ARRI

ARRIFLEX COMPANY OF AMERICA

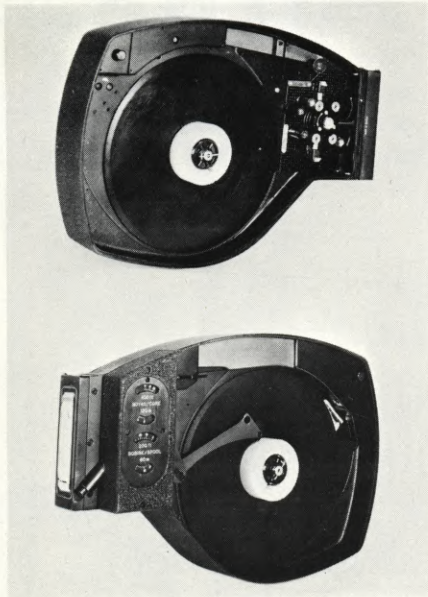
FOR FREE BROCHURES ON OUR 16MM AND 35MM CAMERAS, WRITE TO ARRIFLEX COMPANY AT P. O. BOX 1050, WOODSIDE, N. Y. 11377; OR AT 1011 CHESTNUT ST., BURBANK, CALIF. 91502.

## BACKED BY SERVICE



# WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE



## E-CAM ANNOUNCES AVAILABILITY OF NEW ECLAIR ACL 400' MAGAZINE

A new and improved coaxial 16mm x 400' magazine for the Eclair ACL camera is now available from E-Cam Company, exclusive U.S. distributors for the French Eclair cameras.

The new magazine, designed and manufactured by Eclair International in France, features a double-step light trap on both the supply and takeup camera cover and body casting.

The magazine is fully interchangeable with all ACL cameras now in use, according to E-Cam.

A new double counter similar to that used on the successful NPR magazines provides both feet and meter readings indicating the remaining unexposed footage. The counter operates accurately for both core wound film or daytime load spools.

Magazine dimensions are 11" long, 8" high and 2½" wide, providing a low center of gravity resulting in excellent shoulder placement which permits freedom of movement without strain.

The completely redesigned sprocket and belt drive system reduces the electrical current demand of the camera drive motor.

A traditional belt drive assures silent operation and dependable take-up action.

For additional details and price information, contact E-Cam Company, 5410 Cahuenga Blvd., N. Hollywood, Calif. 91601, (213) 466-3700.

## MODEL #TSL TRI-STAND LIGHTPOD

Just introduced is a new and unusual light stand that doubles as a sturdy camera tripod, known as the Tri-Stand Lightpod. When not in use with spots, strobes, or quartz lamps, a camera pan head can be quickly attached converting the entire unit into a rugged camera stand. The camera stand will support most 35mm and 120-size cameras at up to eye level height.

This precision-engineered unit made of anodized aluminum will transform from its fully extended height to a portable system in less than a minute. The 3-section column extends from 41 inches to a maximum height of over 9 feet. The famous Safe-Lock clutch collar system locks the column at your desired height. The tripod base is braced with 6 solid aluminum struts which lock into place with the twist of one control knob. Two-inch ball bearing caster wheels with toe brakes on each wheel allow optimum mobility with positive anchoring. Gold-finished legs and column add glamour to what should prove to be an extremely useful and versatile system. For further information, contact: Glen M. Welt; Welt/Safe-Lock, Inc.; 2400 West 8th Lane; Hialeah, Florida 33010.

## PRE-AMPLIFIER ACCESSORY FOR CONDENSER MICROPHONES AVAILABLE FOR CP-16 REFLEX AND NON-REFLEX CAMERAS

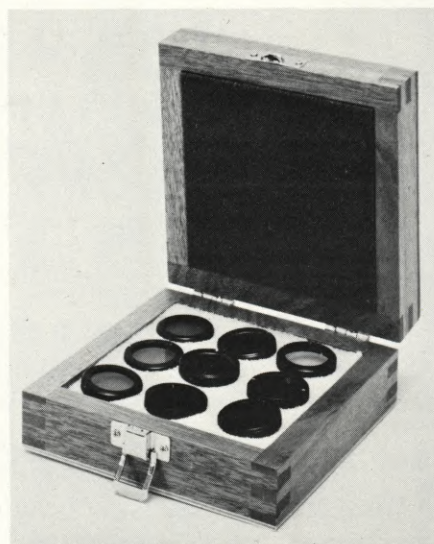
Cinema Products Corporation announces the availability of a new *Pre-Amplifier* optional accessory, designed to accommodate Sennheiser 804/805 series condenser microphones.

The *Pre-Amplifier* optional accessory provides the CP-16 camera system with an *additional* condenser microphone capability, without requiring the use of the Crystasound Auxiliary Mixer (Model 6C). When the *Pre-Amplifier* unit is plugged in, the CP-16 Crystasound built-in amplifier *will still accept* two low impedance microphones and one line input *as well as* one Sennheiser 804/805 series condenser microphone, with all systems controlling the Crystasound built-in amplifier remaining fully operational. All required power is supplied by the same NC-4 nicad battery pack

powering the entire CP-16 reflex and non-reflex camera system. The new *Pre-Amplifier* optional accessory is easily mounted or removed from the CP-16 Crystasound amplifier cover.

The *Pre-Amplifier* (Model CM-1) is priced at \$175.00; and the dove-tail *Pre-Amplifier* camera support is priced at \$22.00.

For further information, please write to Cinema Products Corporation, 2037 Granville Avenue, Los Angeles, California 90025.



## OPTICAL FILTERS

A wide variety of optical filters is available either as individual filters or as filter sets. Colored glass filters, multilayer interference filters and quartz neutral density filters are provided to cover the spectral band from 254nm to 1000nm. Also available is a mercury filter set to isolate the major mercury emission lines. The filters are normally mounted in a 1¼" x 20 threads-to-the-inch ring. Delivery is from stock. International Light, Inc., Dexter Industrial Green, Newburyport, MA 01950. Tel (617) 465-5923.

## GAF INTRODUCES NEW LINE OF SUPER 8 SOUND MOVIE CAMERAS

GAF Corporation has announced its entry into the Super-8 single-system sound movie market with the introduction of three new synchronized sound cameras, the GAF SS 250 XL, the GAF SS 605, and the GAF SS 805.

All are equipped with audio and visual monitors that permit sound checks to be made when the camera is not running. When the monitor button is depressed, a flickering indicator light

Continued on Page 1214



# Rain Drops Fallin' On Your Camera?

Even though wet winter weather is approaching, there's no need to postpone your outdoor filming. AGE Rain Covers, now available for all popular professional cameras, afford maximum protection against the elements and allow you full filming freedom even under the rainiest skies. Made of durable Nappa artificial leather with a special insulated lining constructed to give years of service, these attractive covers are extremely lightweight and waterproof. While completely covering the camera, they allow for all necessary camera functions and adjustments. Velcro fasteners permit the cover to be fitted or removed within seconds. Cameras with AGE Rain Covers may be used hand-held or on a tripod and, in addition to their weatherproofing function, the covers provide excellent protection from sun and heat. Available in Desert White.



CAMERA MODEL:	RAIN COVER PRICE:
Arriflex 16BL camera w/400' magazine	\$45.00
Arriflex 16S camera only	\$37.50
Arriflex 16S 400' magazine only	\$14.95
Arriflex 35 camera w/400' magazine	\$59.95
Eclair NPR camera w/400' magazine	\$45.00
Eclair ACL camera w/200' magazine	\$42.00
Beaulieu R16 camera	\$42.00
Beaulieu R16 200' magazine only	\$10.95
Bolex H16/RX camera	\$42.00
Bolex H16/RX 400' magazine only	\$15.95
Canon Scoopic 16	\$29.95
CP-16 or CP-16A camera w/400' mag.	\$49.95

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<b>16MM CAMERA OUTFITS</b>	
Arri BL, 10-100 Zeiss, APEC.....	\$9,450.
Arri BL, 12-120 Angenieux.....	6,900.
Arri S/GS, 12-120 Angenieux.....	3,250.
Arri S, 35-140 Angenieux.....	3,900.
Auricon Super 1200, opt. sound.....	1,695.
Auricon 600, 12-120, mag sound.....	2,650.
Auricon 200, optical sound.....	695.
Auricon 200, takes 400' mags.....	595.
Auricon Cvsn, 12-120 Angenieux.....	2,995.
Auricon Cvsn, complete body.....	795.
Auricon Cvsn, shell no guts.....	249.
Auricon Cine Voice, opt. sound.....	895.
Beaulieu R16B, 12-120 Angenieux.....	1,795.
Beaulieu R16B, 17-68 Angenieux.....	1,395.
Beaulieu R16B, 20-80 Angenieux.....	1,195.
B&H 70DR, 17-68 Angenieux.....	895.
B&H 70 Hispeed, 128 fps motor.....	349.
B&H 70 Hispeed w/o motor.....	249.
Bolex SBM, 16-100 PDE zoom.....	1,549.
Bolex EBM 400' outfit w/o lens.....	1,295.
Bolex Rex 5 body..... Brand new	
Bolex Rex 4, 17-85 Pan Cinor.....	795.
Bolex Rex 4 with 3 Switars.....	775.
Bolex H-16 Reflex, turret mdl.....	295.
Bolex non reflex, turret mdl.....	189.
Bolex non reflex, sgl-lens mdl.....	229.
CP 16 outfit, 8 months old.....	4,900.
CP 16 body, 400' mag, battery.....	3,150.
Eclair NPR, 12-120 Angenieux.....	5,450.
Eclair NPR outfit w/o motor.....	5,150.
Eclair CM3, 16/35mm outfit.....	2,250.
Cine Special II, 100' mag.....	295.
Cine Special I, 25mm lens.....	249.
Cine Kodak B, 16 fps 100' cap.....	49.
Kodak AC Hispeed, 1000 fps.....	195.
Reverse, 50' mag load, 5 speeds.....	35.
GSAP, 50' mag load, 24v motor.....	19.
Miniature GSAP for experiments.....	
<b>16MM CAMERA ACCESSORIES</b>	
<b>ZOOM LENSES</b>	
12-120mm Angen. C mt. 10' finder.....	1,150.
12-120mm Angen. C mt. 7' finder.....	1,150.
12-120mm Angen. Rx mt. no finder.....	895.
12-120mm Angen. Arri mount.....	795.
12-120mm Angen. Eclair mount.....	749.
20-80mm Angen. C mt. no finder.....	249.
17-68mm Angen. C mt. 7' finder.....	495.
25-100mm Cinor S mt. 7' finder.....	295.
17-85mm Cinor C mt. 7' finder.....	395.
20-60mm Cinor C mt. 3' finder.....	149.
8-26mm Monital f/1.6 C mt..... New	549.
12.5-75mm Zeiss, Arri mount.....	349.
<b>ARRI FIXED LENSES</b>	
12.5mm f/2 Cooke Kinetal.....	329.
11.5mm f/1.9 Schneider.....	329.
16mm f/1.9 Schneider.....	149.
25mm f/1.5 Schneider.....	149.
50mm f/2.0 Schneider.....	149.
<b>C MOUNT FIXED LENSES</b>	
10mm f/1.6 Rx Switar.....	149.
10mm f/1.6 Switar.....	139.
10mm f/1.8 Soligor.....	69.
16mm f/1.8 Rx Switar.....	129.
25mm f/1.95 Angenieux.....	225.
75mm f/1.9 Switar.....	169.
150mm f/3.3 Switar.....	169.
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# ROSCO says

## ROSCOFLEX

... some reflections on light control.

### Part I

The reflector board is one of the oldest lighting tools used by cinematographers. It allows the use of natural sunlight for exterior lighting, without power, noise or cables. The boards have usually been surfaced with paper-backed foil and signpainters leaf ("hard" and "soft" sides). Leaf application requires skill, controlled conditions and much time. These are not durable surfaces, degrading very rapidly in salt air or high humidity, and need to be replaced every few days. They are also very hard to remove.

Rosco, in cooperation with leading cameramen, developed the ROSCOFLEX part of the Cinegel family of Light Control Media, in order to overcome these problems. The 'FLEXES are made up of a tough plastic backing and a clear polyester facing, with a vacuum-deposited aluminum reflector sandwiched between them. The result is a rugged, tear-resistant, washable composite material, with stable and repeatable reflecting characteristics. These materials are not affected by environmental conditions.

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**ROSCOFLEX-H:** This has the characteristics of the traditional "hard" side. Used for long throws or situations requiring punch.

**ROSCOFLEX-S:** This matches the "soft" side, offering wider coverage at shorter throws.

**ROSCOBOND:** A new adhesive system for mounting the 'FLEXES and other materials to a variety of surfaces. Safe and effective.

The above are the basic elements of the ROSCOFLEX family, all supplied in 54 inch wide rolls. ROSCOFLEX materials with other surfaces and Light Control features will be covered in Parts II and III.

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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 recently attended Expo '74 and saw the film in the American Pavilion. I noticed that it was made in IMAX. I would like to know more about this method of filming. Does it use the anamorphic method, or is it another process of widescreen? Does IMAX involve more than one camera, and what size film does it use? Does any specific company make the camera that films IMAX? I also am interested in the method of projection. Is IMAX projected like Cinerama, or is it projected in the conventional manner?

**A** The IMAX system uses a single camera with 65mm film running through the gate horizontally. The frame is fifteen perforations wide.

Prints are made on 70mm positive, and projection of the horizontal 15 perforation film is safely accomplished by a special projector utilizing the ingenious "rolling loop" system. No anamorphosis is used. The system is described in detail in the August, 1973 issue of this magazine, page 988, and in two articles in the September, 1970 issue of the Journal of the SMPTE, page 778 and page 782.

**Q** Could you please explain the difference in job functions between a "gaffer" and a "key grip"?

**A** A "gaffer" is the head electrician on the set who, with his staff, executes the lighting devised by the Director of Photography. The "key grip" is in charge of the staff of grips on the set who execute the placing of shadow devices, dolly tracks and camera cranes as required by the cinematographer.

**Q** I have observed that when an incident light meter is used to read a light condition in comparison with a reflected light meter, that the readings obtained with the latter will vary considerably, depending on the light conditions. I note that as I approach a subject in making a reflected light meter reading that the indicator needle drops, whereas the incident light meter indicator remains constant. Suppose I wanted to photograph two people in closeup—one a white man, the other black. How would I base my meter readings?

**A** Careful analysis of exposure problems in general reveal that: (A) The function of the film in the camera is to record and preserve the identity of the surface reflectances of the photographic subject, and (B) The function of the camera exposure controls (lens aperture and shutter time) is to properly modify the intensity of the illumination which acts as a carrier for the subject reflectances. Therefore, it follows that a measurement of the incident light is most suitable for a determination of the appropriate setting for the camera exposure controls.

In the example set forth in your question, we may note that the constant reading given by the incident light meter will allow the high reflectance of the white man's face to be properly recorded as a high reflectance object, while the low-reflectance of the black man's face will be properly recorded as a low-reflectance object.

Some other advantages offered by the incident light meter are: (1) speed and ease of operation, since only a single reading is required; (2) freedom from error where backlight prevails; (3) freedom from error due to subject contrast; (4) freedom from chromatic error; and (5) exceptional accuracy to suit the requirements of color photography.

**Q** What source of light is called the "key" light? Also, can you explain, roughly, how directors of photography go about setting up their lights for motion pictures?

**A** The key light is considered the source or main direction of light used to illuminate the principal characters. Key light means source light. It may be strong, or very soft. It may be "hard" simulating sunshine, or soft—as the light reflected on the subject from some adjacent surface. It can be all-enveloping light, such as found in a shaded area.

Set lighting patterns are dictated by the requirements of the scene to be photographed (mood; time of day or night). In other words, where should the light come from and what are its visible sources? What is the mood required? These considerations set the pattern for the placement of lights.





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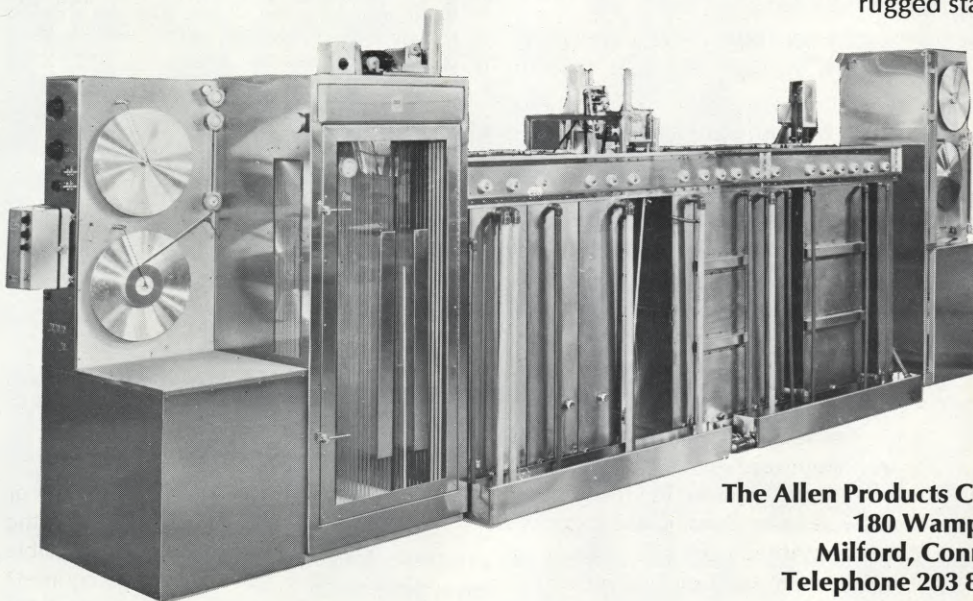
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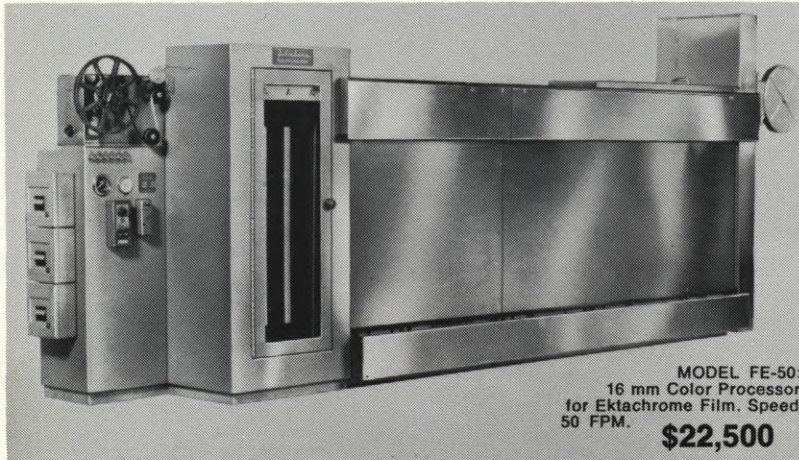
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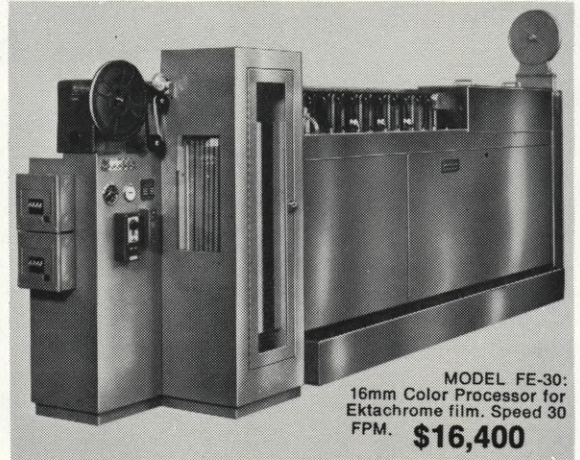
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# Eclair people.

Meet Walter E. Dombrow, cinematographer and Eclair user. "Emmy" won for filming *The Great American Novel*.

"I guess I find documentary filmmaking so fascinating because life is the most interesting 'theatre' there is. Of course, the trick is to be in the right place at the right time. Which is part instinct, part experience, part luck and part equipment."

*Black America*, with actor/narrator Bill Cosby, filmed on location, draws kudos for capturing the black viewpoint. And an "Emmy."

"When you're filming, you can't get in the way of the action. Once your presence influences what happens in front of the lens, you get 'artificial' footage that audiences sense, even if they're not conscious of why. In some situations, interference is not only bad creatively — it can literally be a matter of life and death."

*The Mexican Connection*, filmed for CBS, captures the 'bust' of a drug smuggler, and many other candid action sequences. Won an "Emmy."

"While I won't downplay luck and skill, equipment naturally plays an important part. Because with all your planning and anticipation, the best shots are often captured more with instinct than deliberation. You hear a noise, or see something out of the corner of your eye. You pivot and press the 'run' button before you even think about it."

"Emmy" won for *The Selling of the Pentagon*. And CBS' *60 Minutes*.

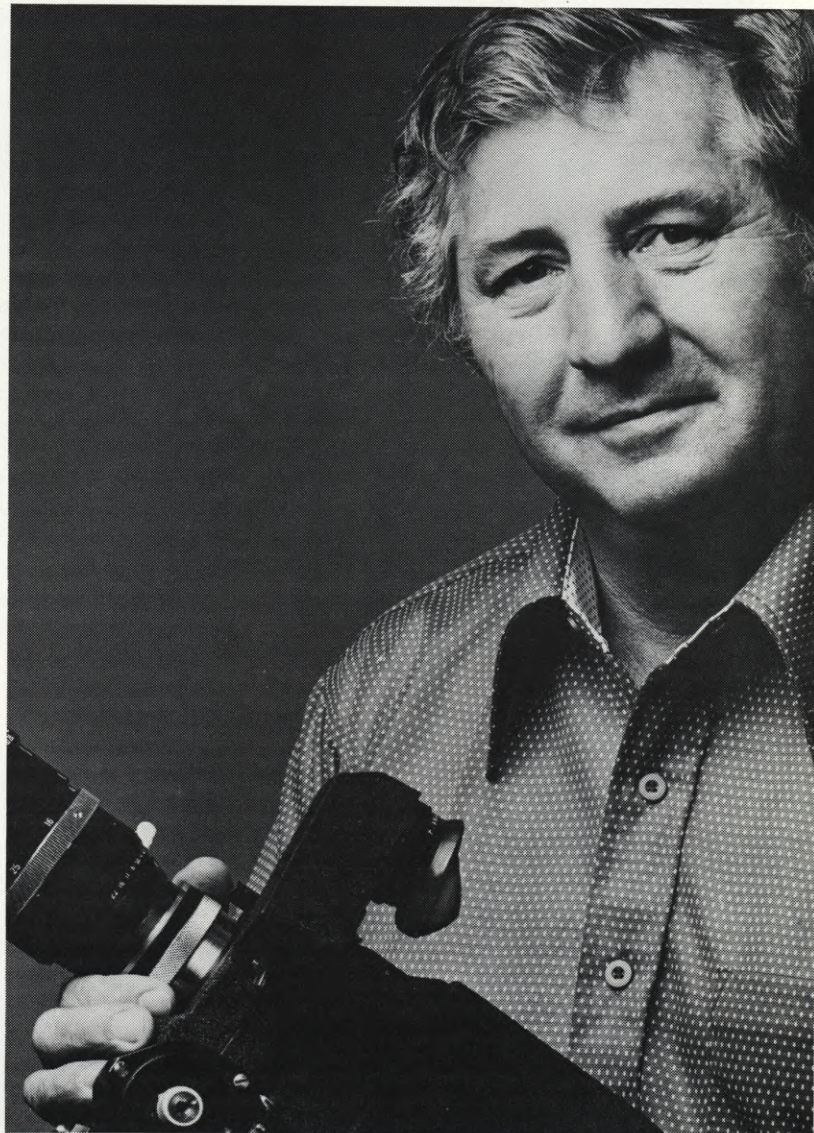
"I've always been an Eclair 'fan'... but the ACL is really something else. Without losing a shred of stability, versatility or ruggedness, it helps me film silently in the tightest quarters, rarely needing even a Barney. The way it's balanced, it works like it's part of my body, which is nice to depend on when I'm trying to follow action in a crowd.

The large, bright viewfinder helps, too. Especially in low-light situations.

And there's certainly no harm in knowing that any lens I want to use, I can use. And when I'm running out of film, it's nice to know that in a couple of seconds, I've slapped another 200- or 400-foot magazine on the camera."

"I could tell you a lot more about why I like the ACL, and how it's contributed to my work. But to any professional, my best endorsement of ACL is on film. Several hundred thousand feet of it, by now.

For more information about Eclair cameras, please write or call Eclair Corporation of America, 62 West 45th Street, New York 10036. (212) 869-0490, 7262 Melrose Avenue, Los Angeles, California 90046. (213) 933-7182. Telex: 14-7208.



## eclair corporation of america



# CINEMA WORKSHOP



By ANTON WILSON

## TWO-TRACK RECORDING

About two or three years ago, several manufacturers introduced professional portable stereo tape recorders. These units, for the most part, went unnoticed by the motion picture industry—who needs stereo?

Soundmen and producers lend me your ears—these stereo recorders are probably the greatest breakthrough since pilotone. The reason most professionals have not bothered to consider the stereo models is due to the word "STEREO" which is really a misnomer. True, some visionary producers will record in stereo, anticipating stereo television, which is undoubtedly on the horizon. However, for the most part, these stereo machines should be called "Two-Track Recorders".

Why a two track-recorder? Under most circumstances a soundman will double mike. Whether it be an interview with two or more persons, a documentary, or an industrial, at least two microphones are employed to cover the dialogue.

When using a full (single) track recorder, these microphones must be mixed on the spot into the single track. In essence, the soundman is forced to perform a mix as he is recording. It may be found on replay that one microphone was at too low a level relative to the other, or that two people (one on each mike) talked at once, drowning out each other. Or possibly one microphone pick-up required some equalization while the other did not. At this stage there is little that can be easily done to rectify these problems, as the whole ball of wax is in one track. In addition, it is difficult for the soundman to properly ride gain, as both microphones are being read on one modulometer; he can never be sure which mike is actually peaking the meter.

Now consider the two-track recorder. The two-track recorder (such as the Nagra SL in FIGURE 1) is the same size and weight as comparable full track recorders. Surprisingly, the quality of each of the two tracks is the equal of the full track recorder in terms of signal-to-noise ratio and frequency response. Thus, if only one microphone

on one track is employed, the quality would be the same as that experienced with the more conventional full-track recorders. But the fun comes when two microphones are employed. Each microphone is recorded on a totally separate track. In addition, a double modulometer is employed, an indicator for each microphone level. The soundman can optimally adjust the level of each mike to obtain maximum signal-to-noise ratio. On the Nagra two-track recorder the two indicators are superimposed on one scale and color-coded red and green to correspond to the respectively colored level knobs. This feature is really great, since the sound man doesn't go cross-eyed trying to keep his attention on two separate level meters. Thus, recording with the two-track recorder is easier for the soundman. He doesn't have to worry about mixing or relative levels of the two microphones. He just rides gain for best signal-to-noise ratio (100% modulation) and lets the mixer in the studio worry about relative levels.

Meanwhile, back at the studio, the mixer is ecstatic. Because each microphone was recorded on a separate track, the mixer has full control of relative volumes and can independently equalize the individual tracks. Take our previous example where two people talk at the same time and both voices are garbled by each other. In the two-track instance, the mixer just kills the gain on the less interesting of the two voices and the remaining track comes through relatively clean and intelligible.

There are other advantages to the two-track recorder. In lieu of a neo-pilotone track, the two-track recorder employs a third center track (sometimes called synchro-tone) to facilitate sound sync. The center track performs the same function as the neo-pilotone track, namely the recording of the 60 HZ pilotone or crystal signal. However, because it is a conventional type head as opposed to the push-pull double-gap neo-pilotone head, the center track can record a broader frequency spectrum. It

Continued on Page 1212

FIGURE 1 The Nagra IV-S Stereo recorder, a "two-track" system





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CP-16 shown  
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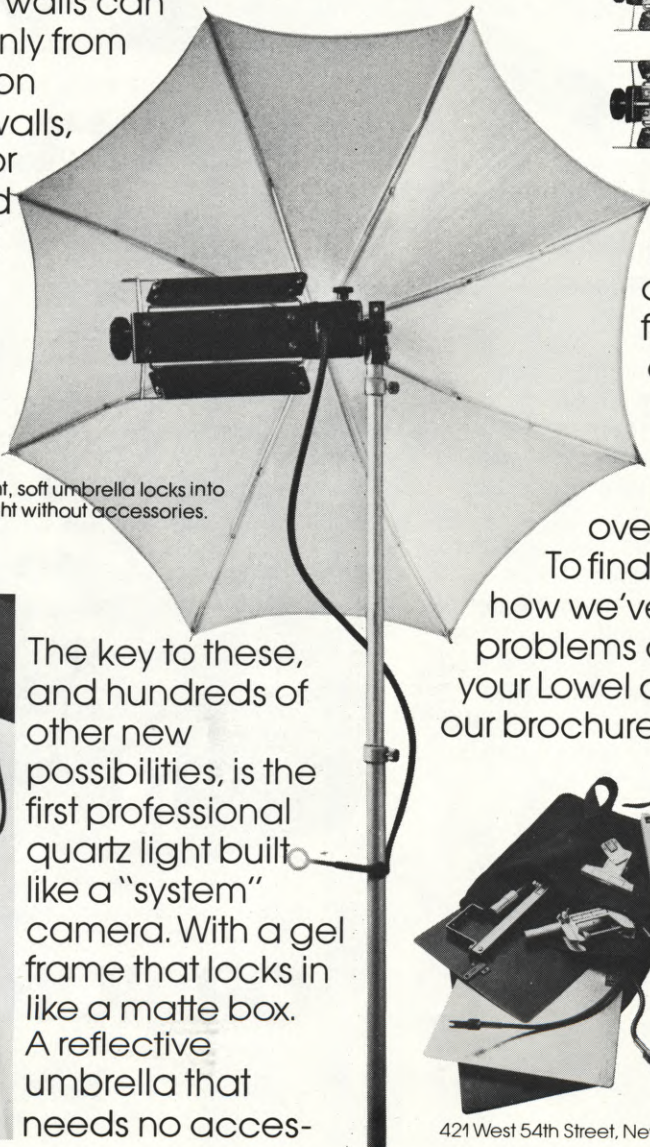


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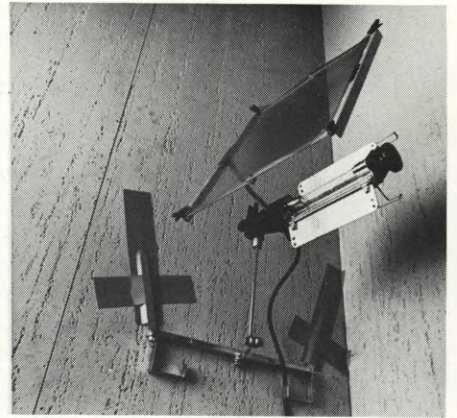
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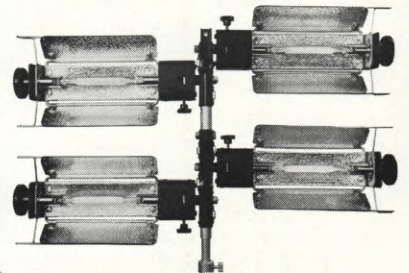


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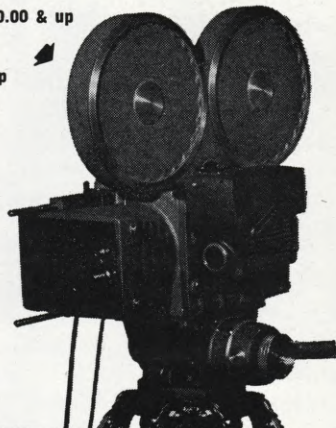


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Sophisticated VTR production techniques are discussed in the 1974 *ELECTRONIC FILM/TAPE POST-PRODUCTION HANDBOOK* by Gary William Jones. This excellent manual on time-code videotape editing, electronic photography and equipment, updates for movie studios, TV stations and film courses many creative opportunities made available through this inexpensive and novel technology. (Jones Family Reunion, 8825-88 Ave., Edmonton, Alta. T6C 1L5, Canada, \$4)

\* \* \*

A handy and substantial directory of 652 top cutting room technicians, with a list of their credits and awards, is compiled by René L. Ash in *THE MOTION PICTURE FILM EDITOR*, with Jerry Greenberg, Oscar-winning editor of *The French Connection*, and veteran editor Jack W. Ogilvie providing insights into this essential craft. (Scarecrow Press \$6.)

\* \* \*

Interviews with Czech film-makers who sparked their country's cinematic renaissance—Milos Forman, Ivan Passer, Jan Kadar and many others—make up Antonin J. Liehm's *CLOSELY WATCHED FILMS*. This informative anthology about a group of sensitive and dedicated artists includes a useful filmography and appropriate indexes. (Int'l Arts & Sciences Press, 901 N. Broadway, White Plains, N.Y. 10603. \$15.)

\* \* \*

A comprehensive, illustrated survey of the perennially popular cloak-&-dagger genre, *THE GREAT SPY PICTURES* by James Robert Parish and Michael R. Pitts covers some 500 memorable silent and sound films with detailed cast-&-credits lists, character names, plot summaries, plus reviews and editorial comments. (Scarecrow Press \$17.50)

\* \* \*

Ivan Butler's *THE WAR FILM* is a perceptive study of the treatment of war in U.S. and British films. From Vitagraph's *Tearing Down the Spanish Flag* (1897) to Dalton Trumbo's *Johnny*

# THE BOOKSHELF

By GEORGE L. GEORGE

*Got His Gun* (1972), the book documents in a thoughtful and informative approach the recurring themes in films dealing with the American Civil War, WW I, WW II, the Spanish Civil War, Korea, Vietnam. (Barnes \$8.95)

Norman Kagan's book on the same subject and with the same title, *THE WAR FILM*, pertinently asks whether these movies are true to war, to history, to their times, to cinema, to art and to themselves. Stressing the cathartic effect of such films, the author finds they convey authentically the experience of war in its multiform aspects of savagery, courage and futility. (Pyramid \$1.75)

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## GOOD OLD HOLLYWOOD

Mike Steen's *HOLLYWOOD SPEAKS!* is an "oral history" of what has been called a state of mind as reflected in 25 interviews with some of Hollywood's most celebrated denizens: cameraman James Wong Howe, directors William A. Wellman and Busby Berkeley, stars Henry Fonda and Rosalind Russell, as well as makeup artists, producers and assorted craftsmen. (Putnam \$8.95)

\* \* \*

In *ACADEMY ALL THE WAY*, columnist Grover Lewis reprises his pieces from *Rolling Stone Magazine*, spotlighting with wit and perception many unconventional aspects of the good and bad times in and around the film capital. (Straight Arrow \$7.95)

\* \* \*

Rex Reed's *PEOPLE ARE CRAZY HERE* is bound to provoke, delight or irritate almost anybody connected with show biz. His 40 portraits of screen and stage notables show him at his sharpest, meanest and cleverest, in a class by himself. (Delacorte \$7.95)

\* \* \*

Director Peter Bogdanovich and writer-producer Norman Lear are two film personalities included in *SUPERTALK*, a remarkable collection of unusually revealing interviews conducted by Digby Diehl, the respected book editor of the *L.A. Times*. (Doubleday \$8.95)

\* \* \*

A well-researched fictionalized account of the growth of the film industry, *THE BEGGARS ARE COMING* by Mary Loos, adroitly combines romance and fact, making for pleasant and informative reading. (Bantam \$1.50)

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The special merit of Arthur Marx's biography of Dean Martin and Jerry Lewis, *EVERYBODY LOVES SOMEBODY SOMETIME (ESPECIALLY HIMSELF)*, is its penetrating insight into the uncontrollable egos of the popular performers. How two talented individuals almost managed to destroy themselves and those around them is a devastating tale that Marx unfolds with compassion, tempered by a healthy dose of reproof. (Hawthorn \$9.95)

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# PROFILE: A.S.C.

By JOHN ORMOND

*(Editor's note: This is the second in a monthly series of articles, profiling distinguished members of the American Society of Cinematographers.)*

## WILLIAM MARGULIES, A.S.C.

The American Society of Cinematographers is comprised of men of many talents and backgrounds, from several different countries. From its inception, in 1919, the ASC has stressed excellence and integrity as the main ingredients for its distinguished membership, whether they demonstrated their skills in motion pictures or in television.

However, partly due to the worldwide scope of motion pictures plus the greater film budgets involved, the director of photography of a motion picture has received a much greater prominence than his counterpart in television. That situation is gradually changing, and with it is developing an increasing interest—and share of the credit with the public—in the men who work in America's great television complex.

One such exponent of the TV camera skill is longtime ASC member William Margulies, a cameraman who learned his art in motion pictures but who has been active in television for more than a decade.

The latest count indicated that Margulies has photographed no less than 443 television shows. But that's only the shows he's recorded in his own work logs. He says there are probably many more.

A good portion of Margulies' work has been done at Universal, during an

11-year period. Such shows as "Run For Your Life", "Wagon Train", "Checkmate", "Paris 7000", and "Emergency", to mention but a few of the series he has photographically supervised.

Margulies' views on television, then, are worth noting. Especially since he feels the medium is no longer providing the kind of excellence which the ASC has long stressed.

"In the early days of television," he says, "it was possible to deliver a TV show for \$15,000 to \$20,000. We did our own commercials, then, too.

"The cameraman always stressed better photography—and he would generally get his way with the production company and with the director.

"But in recent years, things have really deteriorated. There are many more inexperienced people on the TV set, and one frequent result is bad lighting. It's a fact today that many producers and directors, because they are inexperienced, just don't know what they want—and they accept poor work."

Margulies also noted that cameramen used to be hired in TV for 32 shows at a time. Then the number dropped to 13. Now, he says, it's almost a case of show by show.

Nevertheless, the financial aspect is still good. Margulies believes all cameramen are better off today than they were 20 years ago, from a monetary standpoint. And he says it's probable the average television cameraman on filmed series earns more overall each year than

his motion picture colleague.

By comparison, Margulies recalls, he used to earn \$25 (!) a week "with no overtime" when he first started in Hollywood in 1924, working at the old Fox studios as an assistant cameraman.

The first "big" picture Margulies worked was "What Price Glory" starring Victor McLaglen, Edmund Lowe and Dolores Del Rio.

"We worked day and night, including Sundays, for six months on that one," says Margulies. "Fox was headquartered then on the Western Avenue lot, and the exteriors were done over on Pico Boulevard, where the company later set up its main studios."

Margulies' favorite story concerning that picture refers to the night they staged the big battle sequence on the Pico lot, which was then an open area surrounded by a few homes and shops.

"We had ten cameras for the sequence. We made a lot of noise with shell explosions and machine-gun fire and so on. About 2 a.m., just after we'd finished a scene involving a lot of fighting before the cameras, a sheriff walked on the set and asked our assistant director who was in charge of the proceedings. The assistant, Jim Tinling, answered that he was. Whereupon the sheriff told him he was under arrest for disturbing the peace!"

Margulies chuckles as he recalls, "Seems some of the home owners were screaming because all the ruckus had caused many windows to crack and some stucco had cracked and peeled. Poor Jim just happened to be there when the sheriff showed up, and he gave the wrong answer!"

Margulies, New York-born-and-educated, attended the Artists League in Pittsburgh and the Chouinard Art School in Los Angeles, before he entered the Wonderful World of Movies.

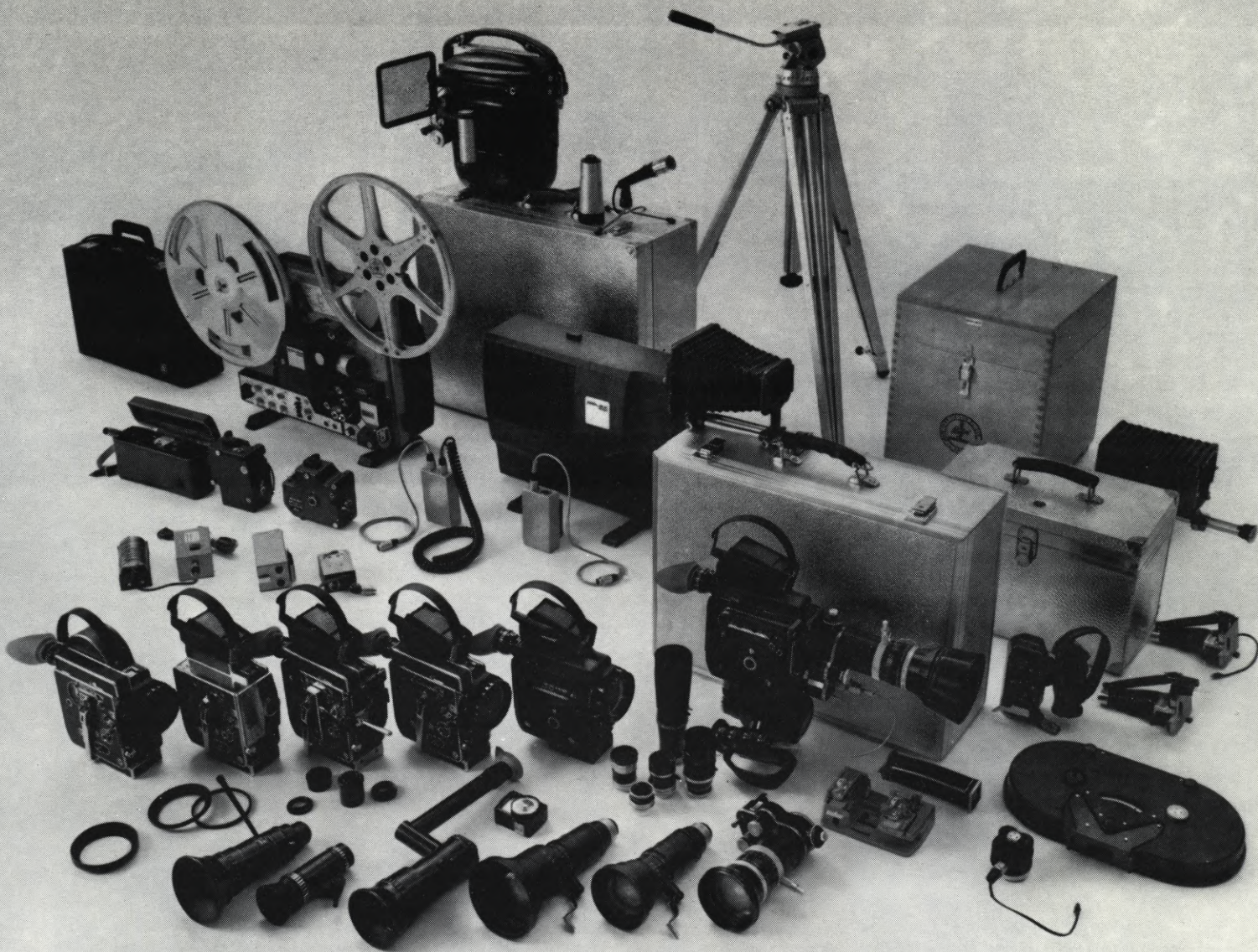
He became a first cameraman in 1956, on a picture titled "Broken Star", which Howard Koch produced. Among the movies he worked were "Fort Laramie", "War Drums", "Dateline Tokyo", "The Sword of Ali Baba", and "Easy Come, Easy Go". In all, Margulies photographed 30 motion pictures.

Among his many honors as a director of photography have been "Emmy" nominations in 1957 and 1958 for "Have Gun, Will Travel," and 1960 for "Lawless Years" and 1961 for "Outlaws." Recently, he has been working in the "Love Story" and "Family Kovack" series.

"I've had a long eventful career," says William Margulies. "I've seen a lot of things, and I've done a lot of things. But if I had to do it over again, I wouldn't change a single thing!" ■







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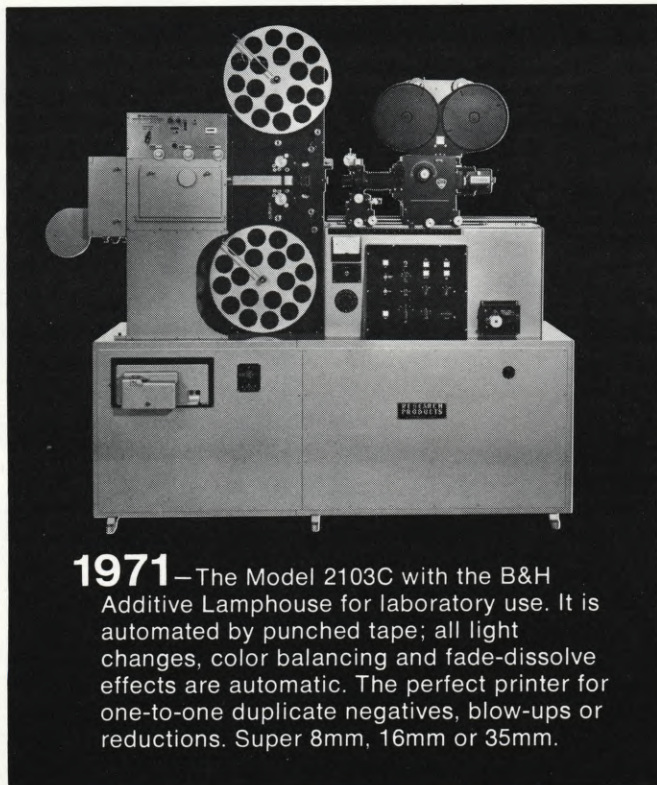
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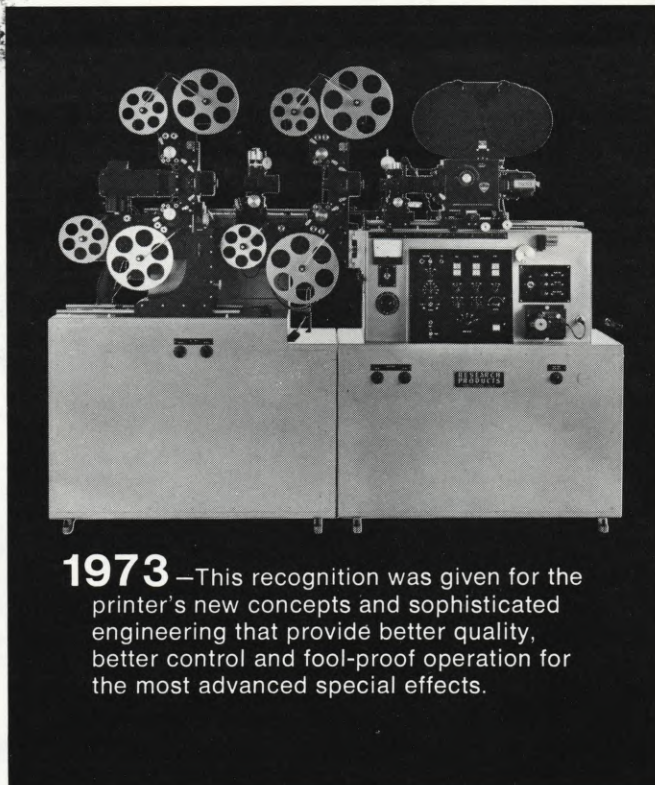
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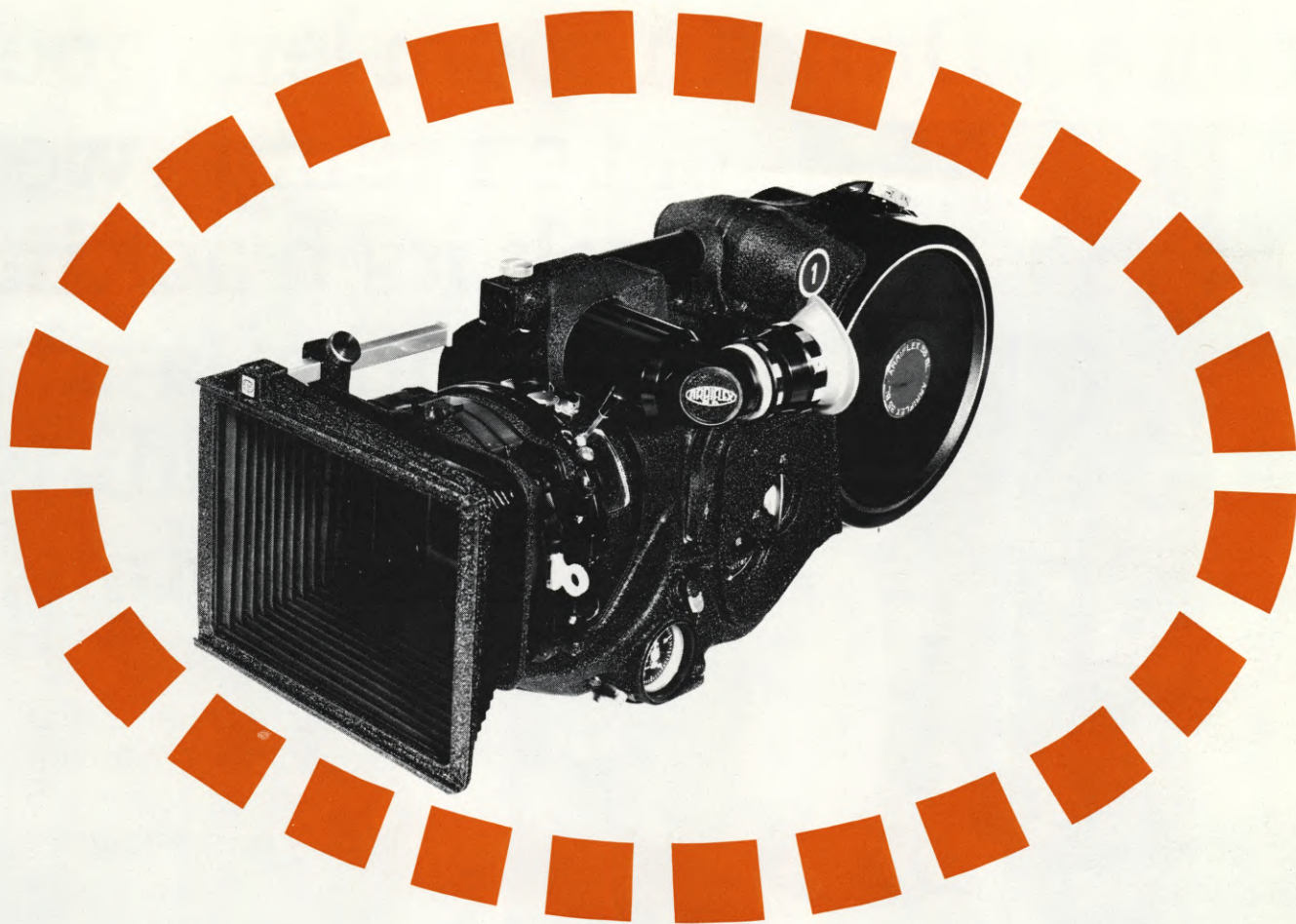
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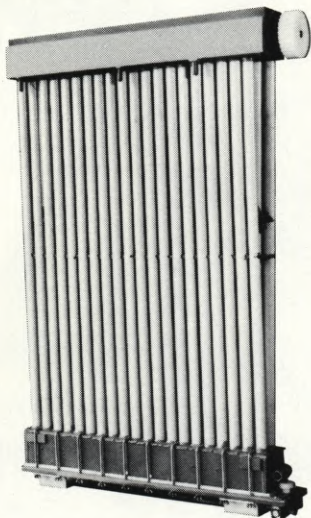




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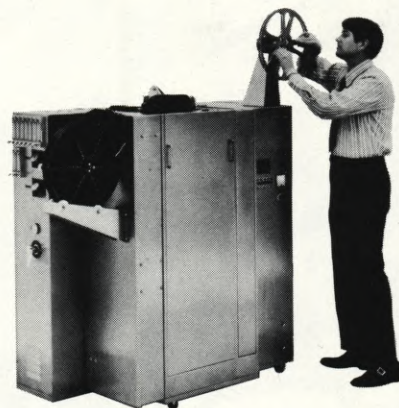
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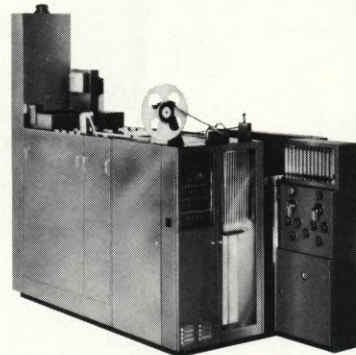
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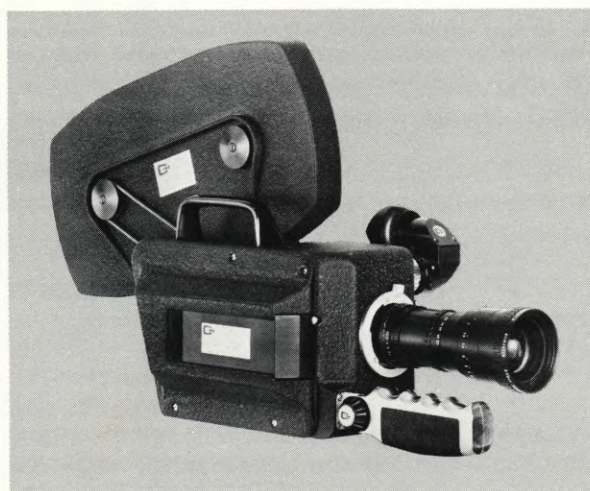
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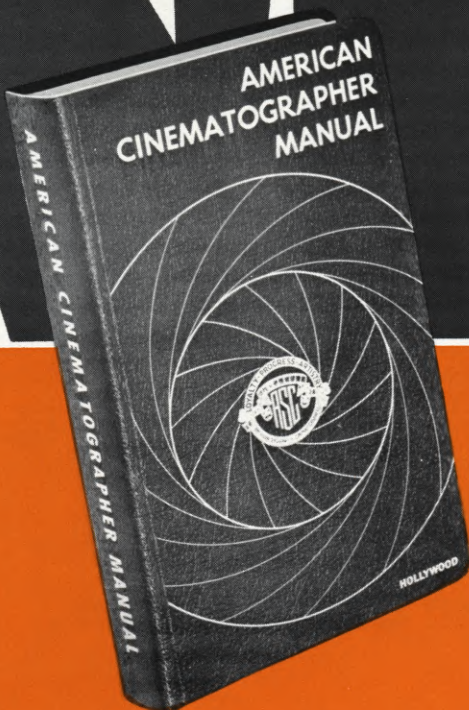


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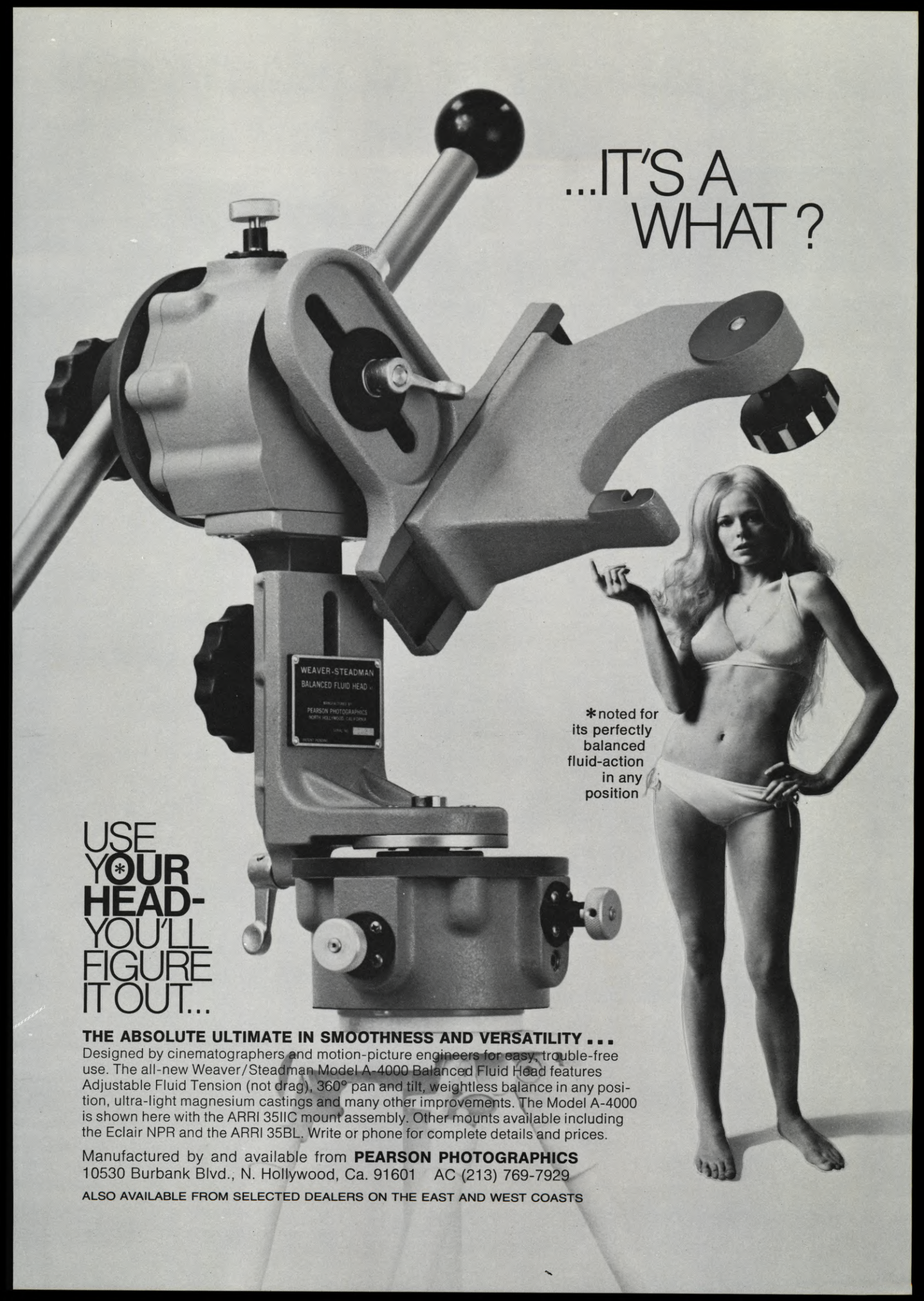
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**METRIC EQUIVALENTS** when lens distances are given in metres and you think in feet and inches, or vice-versa.  
**RUNNING TIME** How long will a length of film run on 35mm or 16mm cameras?  
**PICTURE WIDTH AND HEIGHT** What lens is required to take in a certain width of scene?  
**LENS ANGLE** What is the angle of coverage of lenses when used for different film formats?  
**COLOUR TEMPERATURE** What is the effect on colour temperature when using a different colour conversion filter on the camera and on the lighting?

## FOR DIRECTORS AND EDITORS

**TIME AND FILM LENGTH** How long a scene will run in seconds when shot or shown on 35mm or 16mm, at 24fps or 25fps, measured in feet or metres.

## FOR TV DIRECTORS

**LENS ANGLES** Focal lengths in millimetres converted to degrees of angle.

## FOR ART DIRECTORS

**FIELD OF VIEW** How far a camera must be able to go back to take in a certain width of picture with a certain lens and how high the set must be for a given aspect ratio.

## FOR GAFFERS

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For the last 10 years, Super-8 film has been "silent". Without sound, your Super-8 movies were "incomplete".

Today, there is "Ektasound" film, a revolutionary film which provides the means to record sound (directly on the film) as you're filming. You, therefore, can shoot "complete" movies.

With the new Beaulieu movie camera, you will go even further in Super-8. The "5008S" benefits from the advanced technology provided by Beaulieu: an image with a professional touch, and now sound with a high quality level.

## Professional Sound Quality

Pop in a new Super-8 sound ("Ektasound") film cartridge. Focus. Then, plug in the mike. That's all the preparation you need. With the Beaulieu "5008S", you're now ready to start filming professional quality Super-8 single system sound movies.

An amplifier is built into the camera which records the sound directly onto the magnetic stripe of your sound film. The camera records high fidelity sound, both in treble as well as bass (*frequency response*: 50-12,000 Hz  $\pm$  1.5 dB; *distortion*: less than 0.75%; *signal-to-noise ratio*: 57 dB; *wow and flutter*, attenuated peak: less than 0.4%).

The "5008S" modulates the single system sound recording automatically. However, there is also a "manual" setting so that you can modulate the sound as you are filming (by using the VU meter).

## "XL" (Existing Light) Filming Capability

The "5008S" has "XL" (Existing Light) filming capability which is provided by: a *super-fast* lens (f1.2, 6-80mm Angenieux zoom), a longer exposure time for the image (1/40 second), and a through-the-lens metering system that sends 100% of the available light to the film.

Since many of your sound movies will be filmed indoors, this feature will enable you to shoot films in the available light of your scene (whether that "light" is bright or not).

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Angenieux succeeded in creating a new zoom lens that covers all the focal lengths from 6-80mm (a 13.3 to 1 zoom ratio).

Imagine such a lens in 35mm still photography. It would go from a 35mm wide angle to a 500mm tele.

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## New Dolly Shot Style

The power zoom of the Beaulieu "5008S" is continuously variable. You can travel the full focal length range in 4 seconds, or 12 seconds (*or any speed in between*).

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To film macrocinematography with the "5008S", just zoom to 80mm and focus. At the minimum focusing distance of 2 feet, 8 inches, you get all the light available since the lens doesn't actually touch the subject. For example, at this distance, a postage stamp

(1½" x 1-1/5" in size) completely fills the viewfinder (and consequently, the screen—when projecting).

## Forget the Exposure

With the "5008S", you can concentrate totally on framing and sound recording. The diaphragm operates automatically and stops instantly at the right aperture. (This feature has "Manual Override".)

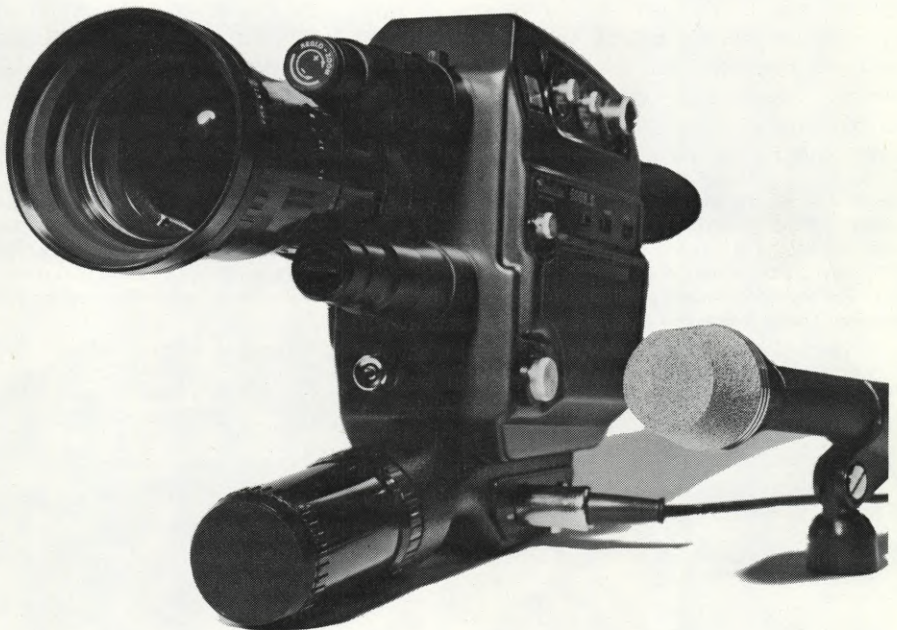
## Lens Interchangeability

The "5008S" is the only single system sound camera with an interchangeable lens. It accepts 35mm still photography lenses (by means of an adapter), as well as all 16mm "C" mount lenses.

The choice is yours. You can interchange an unlimited amount of different lenses in order to create a certain "feeling" or effect in your films.

For full information on the new Beaulieu "5008S" Super-8 Single System Sound Camera, please write to:

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## The Beaulieu "5008S" Sound Movie Camera



# FILM AT expo'74



Spokane, Washington does itself proud with a lively World's Fair dedicated to the theme: "Celebrating Tomorrow's Fresh New Environment"

By HERB A. LIGHTMAN

## SPOKANE, WASHINGTON

Compared to such spectacles as EXPO 67 (Montreal) and EXPO 70 (Osaka), Spokane's EXPO 74 is not a big World's Fair, but its dramatic location on the Spokane River (overflowing onto an island and straddling a waterfall) and the fact that there are many interesting things for visitors to see have given it a very successful run since its May opening. It is expected that the Fair's popularity will draw many more visitors up until the closing day, November 4.

Like the two previously mentioned EXPO's that preceded it, EXPO 74 leans very heavily on audio-visual presentations to further its theme: "Celebrating tomorrow's fresh new environment." Almost every pavilion features some sort of audio-visual production, with the main emphasis on film.

The most stunning cinematic presentation takes place inside the United States Pavilion, the largest and most imposing structure at EXPO. The pavilion combines a translucent white vinyl canopy supported by cables and suspended from a high mast, and a permanent building of concrete and glass.

Aerial view of the site of EXPO '74 World's Fair in Spokane, Washington. In the center of the photo is Havermale Island, once a decaying railroad yard. The circular structure is the U.S. pavilion. To the left is the International Pavilion housing West Germany and the Republic of the Philippines. Above that is the Russian pavilion, the largest foreign exhibitor with 52,000 square feet. The upper left hand portion of the picture shows the Washington state pavilion, which will house an Opera House and art galleries.

Beneath the vast canopy is a three-part floor plan which is comprised of (1) a specially designed 850-seat theatre, (2) a central courtyard for theme exhibits, and (3) the Federal Action Center in the permanent building.

Sitting in steep tiers before a 90 by 65-foot screen, visitors view the spectacular documentary, "MAN BELONGS TO THE EARTH", produced by Paramount Pictures in the world's largest film format, IMAX. Because of the unique design of the theatre and the huge size of the screen, the degree of audience involvement in the action reaches a maximum degree—so much so, in fact, that attendants keep on hand brooms, absorbent material and other supplies needed to cope with occasional viewers who develop "air sickness" from viewing aerial footage of a wild ride through the gorge of the Grand Canyon.

Running this film a close second in terms of dramatic impact is the Washington State Pavilion's presentation of "ABOUT TIME", a color motion picture backgrounded with an original musical score. Using a rear screen projection technique, in conjunction with strategically-located mirrors, the production sur-

rounds the viewer with sight and sound. The mirrors, placed along the sides of the screen, give the impression of images stretching to infinity.

The film's theme deals with man's inter-relationship with time and his environment. It is presented inside a handsome new structure which houses a theatre and an exhibition hall with a grand mall in between. When EXPO 74 closes, this ultra-modern complex will remain as a permanent cultural and convention center on the south bank of the Spokane River.

The Republic of China Pavilion houses a 236-seat theater in which visitors view an *ELECTROVISION* presentation, "THE TAIWAN EXPERIENCE", projected by means of 28 Ektagraphic slide projectors and three 16mm Pageant motion picture projectors. These are linked by computer into a multimedia marriage of sight and sound. The resultant audience-involving audio-visual experience is presented on a giant screen forming an 180-degree viewing angle in the theatre.

Through this spectacular medium are depicted the inventions and masterpieces of China, the economic development of Taiwan, and the loveliness of a region which 16th Century Portuguese mariners christened "Illa Formosa"—beautiful island.

Although the Soviet Union Pavilion at EXPO 74 includes none of the spectacular formats featured by its counterpart at EXPO 70, it is, nonetheless, heavily oriented toward the use of film to underscore its theme: "The Role of the Soviet State in the Preservation of Nature and Effective Use of Natural Resources."

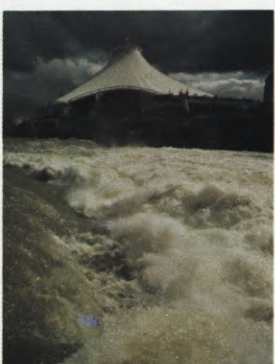
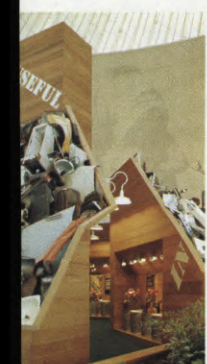
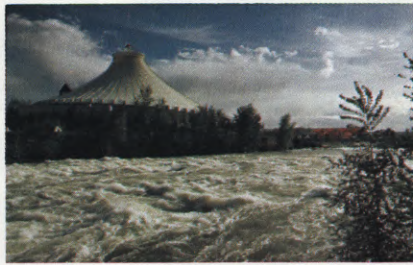
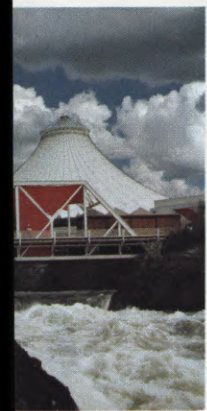
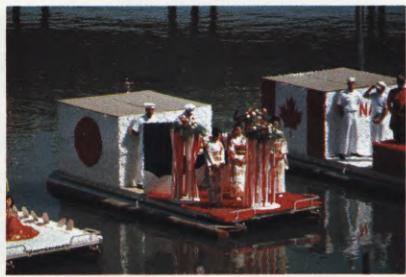
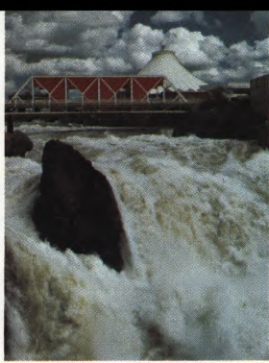
The opening stage of a tour of the pavilion leads to a panoramic multi-screen film presentation—"THE BIOSPHERE", based on a concept of noted Soviet ecologist V.I. Vernadsky.

The natural beauty that Soviet citizens seek to preserve is the colorful subject of a second film, "MY SIXTH PART OF THE PLANET"—a scenic visit to various regions of the Soviet Union.

Continued on Page 1196









# "ABOUT TIME"



By BOB MARONA

Producer

Nothing warms a filmmaker's heart more than the sight of long lines of people waiting anxiously to see a film to which he and his partner/director have dedicated two years of their lives. Happily, our latest film is playing to capacity crowds at the newest World's Fair, EXPO '74.

Prior to winning this assignment, we spent twelve months in an unsuccessful attempt to get our first full-length feature into the works. I'm not so sure that the frustration of that experience didn't play a major role in our approach to "ABOUT TIME", the name of our new film for EXPO.

We wanted to entertain people, to motivate them and most of all, we wanted to do a feature. So, when the State of Washington came to us for a concept for their pavilion at EXPO '74, we strongly recommended a major film effort. Ed deMartin, my partner in filmmaking, and I were still in a "feature" frame of mind, but I don't believe it was a conscious act on our part to make a 20-minute feature film, suitable for a fair-going audience! Yet, if I had to categorize "ABOUT TIME", I'd have to call it a "mini-feature."

The central theme for the World Exposition, *"Man and His Environment"*, stressing the many facets of ecology confronting our world today, is a timely theme, and one future outcome

hoped for by the EXPO Commission is that the EXPO site will become a permanent meeting center for environmental study and planning. We reasoned that the fair would abound in anti-pollution technology and prognostications as to what the future holds for planet Earth... and so we elected to avoid a documentary or an educational approach. Instead, we took a less traveled road, dealing with a specific aspect of *"Man and His Environment"*—that of man caught in the "time squeeze"—a theme we felt could offer both dramatic impact and entertainment value.

The State of Washington, as the host of EXPO '74, to be held in Spokane, Washington, was most anxious to make a very favorable impression, to display its largely unspoiled beauty and grandeur for all the world to see.

The friendly rivalry between Spokane, the urban center for the eastern half of the state, and Seattle, the western cultural center, was an added incentive to the men who conceived the fair. They knew that everyone would be comparing their efforts to the successful "CENTURY 21" Exposition, which Seattle hosted in 1962.

Intensive scouting trips throughout the state made it quite evident that Washington was, indeed, a microcosm of Earth itself, bordered on the entire west coast by the ocean, and comprised of

many inland streams and lakes, snow-capped mountains, desert flats and a jungle-like Rain Forest. Tempting as a "grand travelogue" was, we averted that trap and decided that the versatile beauty of the state would be ever-present, but as a stage-set background, against which a dramatic story would unfold.

## BEHIND THE CAMERA

The screenplay was based on an original story by Ed deMartin, who also directed the film. In his desire to emphasize the passage of time in the limited twenty-minute span allotted to the film, a dramatic device was required that would seem to span millennia. We elected to tell a story with a beginning, a middle and an end, confining our point-of-view to one aspect of man's struggle with his environment: that of his mad dash to ever-compress *Time* to a point where he suffers a time "implosion"... where time can be compressed no longer, without devastating results. (The frightening implications of this phenomenon were dramatically presented in Alvin Toffler's book, *"Future Shock"*.)

To compress time in our film we chose to show the cycle of development of a new-born baby growing to maturity. Her life is portrayed against that of the other main "character" in the film,

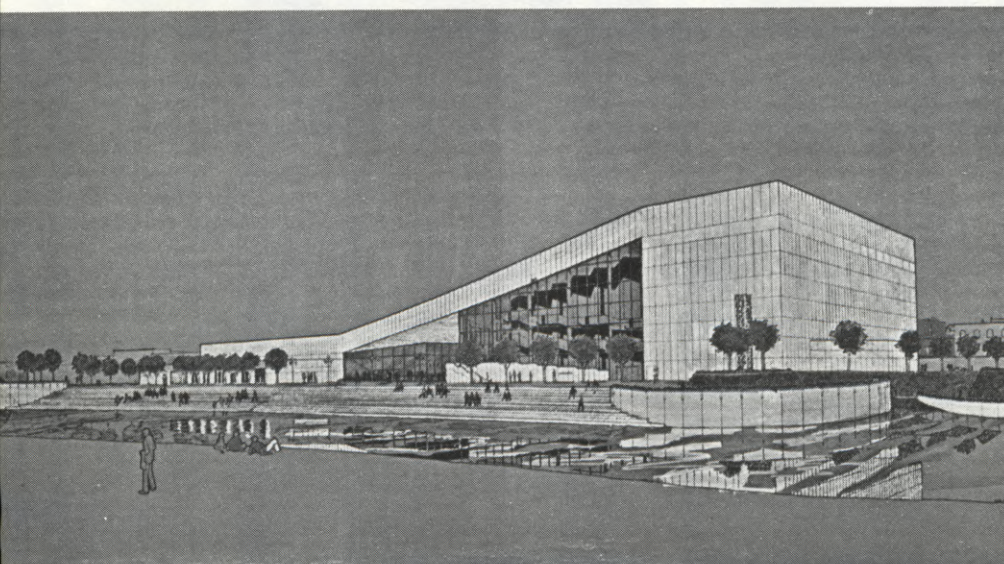
Artist's rendering of the striking new Washington State Pavilion at Spokane's EXPO '74, wherein is shown the 20-minute film "ABOUT TIME". Located on the south bank of the Spokane River and including a large auditorium, exhibition hall and 10,800-square-foot open mall, the complex will become a permanent cultural and convention center after EXPO closes.

(ABOUT THE AUTHOR: Co-founder of deMartin-Marona & Associates, Bob Marona trained as an industrial designer. The firm offers a "total communications" philosophy—that is, all creative services under one roof. At EXPO '67, in Montreal, they designed the pavilion and multi-media presentation for the Canadian-Pacific Pavilion.

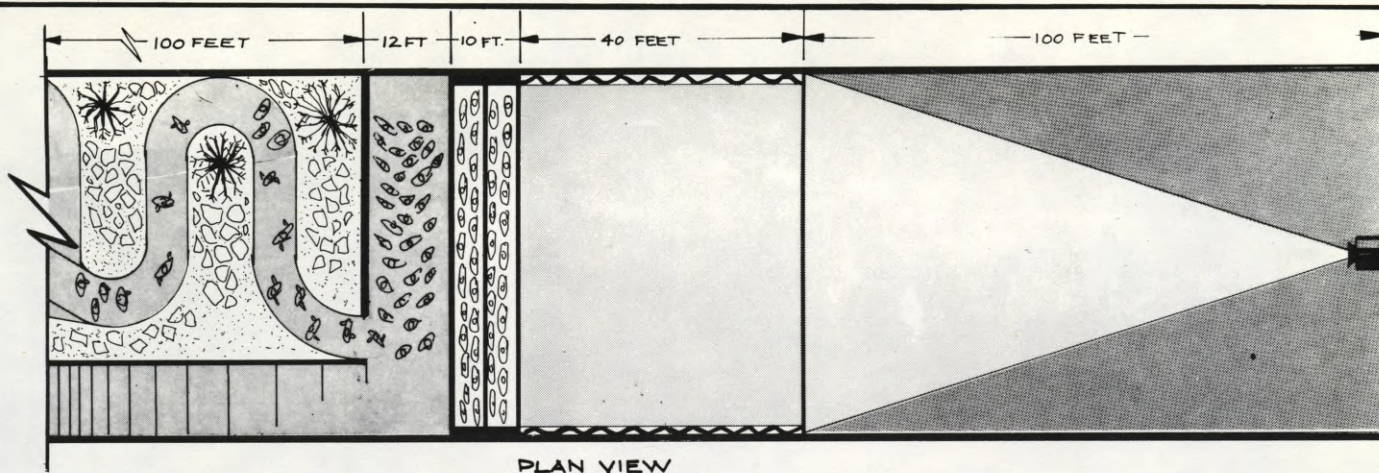
Five years ago, Marona and Ed deMartin, who directs most of the company's films, caught the film making "bug." They have, in that short time span, produced an impressive list of special category films and documentaries, for which they've received several major awards, here and abroad.

Their latest production to date is a \$500,000 film for the State of Washington, which premiered at EXPO '74 in Spokane, on May 5th.

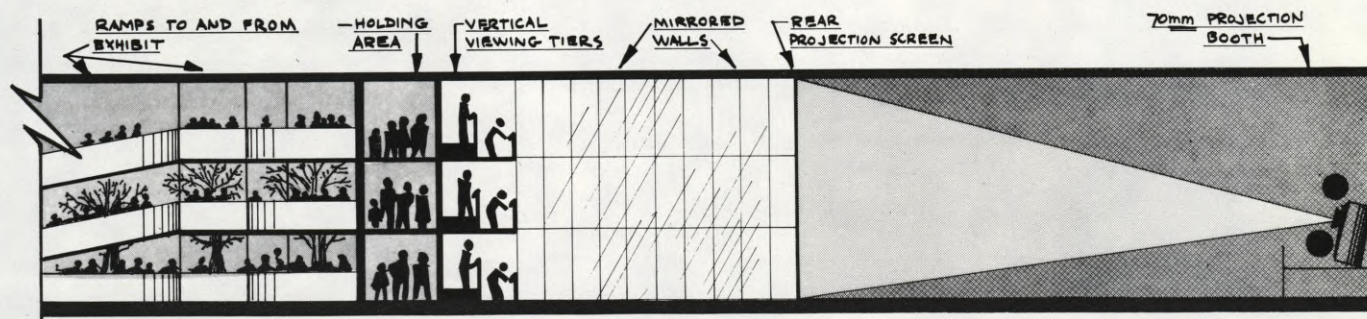
They refer to this effort as a "mini-feature", which has whetted their appetites to produce a full-length feature.)







PLAN VIEW



SIDE VIEW

Schematic view diagrams of the Washington State Pavilion interior, showing relationship of rear-projection screen to mirrored walls and audience. Network of ramps running through "inside garden" conducts audience up to the three vertical viewing tiers.

an ancient tree which, we imply, has been there before man was present on earth. The contrast between the two would become a vital vehicle through which the message of the film would be established. The tree selected, after many months of searching the entire state of Washington, was in fact, "only" 300-400 years old, with a spread of 125 feet and a trunk circumference in excess of 24 feet. It is a Big Leaf Maple (*Acer Macrophyllum*), which lives in Friday Harbor, in the San Juan Islands. It projected all of the strength, character and mystique that "Jessica", the little

girl in our story, believed was "the place where God lived."

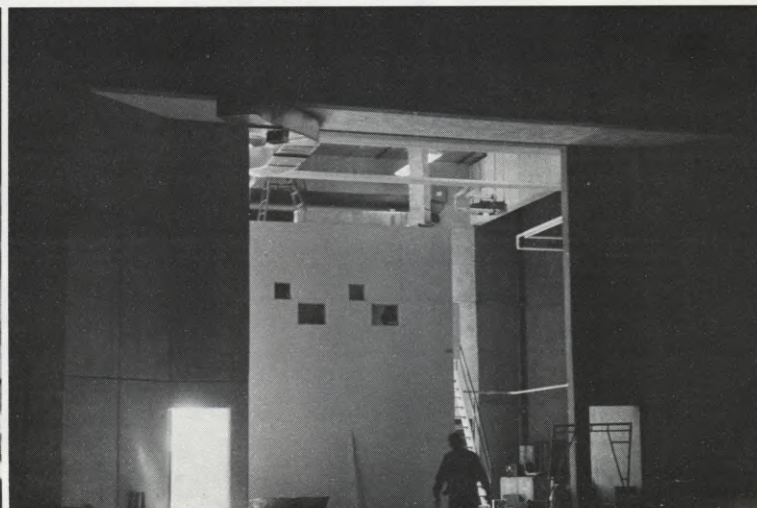
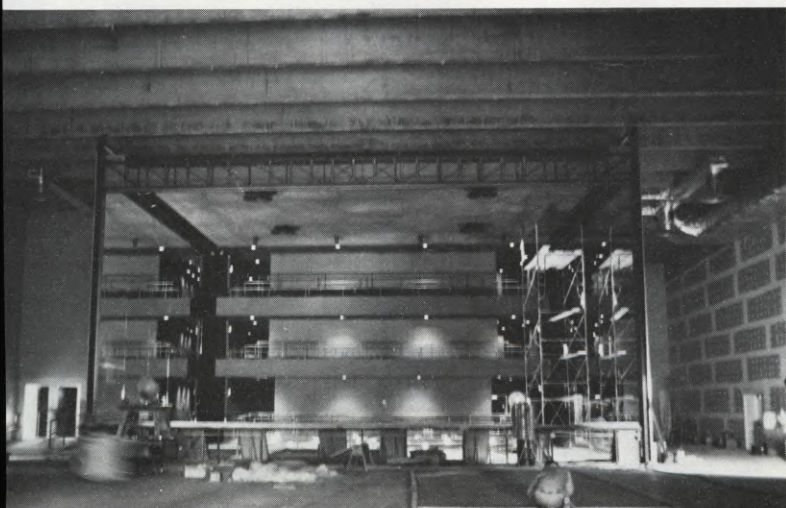
The five girls chosen to play Jessica, the central character of the story, in various stages of growth were, as were all main characters, selected from some 500 cast candidates interviewed, all residents of the State of Washington.

"ABOUT TIME", then, is concerned with Man and Earth. It is structured in three sequential "time cycles", or acts. Here is a brief outline of the film treatment:

"Before Time" (Time Cycle one)

"The intention of this segment was to create an impression of nature before humanity. The mood, one of mystery and beauty, moves with the basic flow of early life forms—from water, inland. We imply that Nature came first, and that it holds answers to timeless questions Man is not yet here to ask. This First Act ends by establishing an important, specific, physical presence: one of Nature's finest creations . . . a magnificent, ageless Tree. The tree is a significant story element: it is the focal point of our movie. It is both a physical  
Continued on Page 1184

(LEFT) The Presentation Theatre, as seen from the projection booth during construction, with rear-projection screen not in place. Shown are the three viewing tiers and mirrored side walls. (RIGHT) The projection booth stands 40 feet tall and, because it was placed over the main doorway for bringing in large exhibits, it was built on a large dolly and rolled into position just prior to the opening of the Fair.





# "MAN BELONGS TO THE EARTH"



Under a soaring white canopy: wisdom from an Indian chief about the human condition, and a stunning film in the world's largest format

## THE STRUCTURE

Dedicated to the theme "*Man and Nature, One and Indivisible*", the United States Pavilion uses graceful, flowing forms to harmonize with the surrounding terrain. A soft shell canopy rises as the visual extension of two earth-covered structures facing each other across an open-air courtyard. The complex thus appears to grow naturally out of the ground. The open roof design and wide, sweeping archways allow fresh air and sunshine inside the Pavilion, where natural vegetation further enhances the outdoor-indoor atmosphere.

The translucent vinyl fabric sheltering the exhibit is large enough to cover nearly two football fields. It is hung from a 4.6-mile network of cable suspended from a tilted 145-foot mast and a steel ring measuring 52 feet in diameter and 6 feet in height. Total weight of the mast, ring, and cable system is about 160 tons.

Beneath the canopy, exhibits are presented in three distinct but themat-

ically related areas: an 877-seat theatre, an exhibit garden, and a striking concrete and glass structure designed to remain permanently after the Fair closes.

**THE ENVIRONMENTAL PROBLEM AREA** shows that each of us has a vital stake in the environmental issues facing us today. A spectacular film produced by Paramount Pictures and the IMAX Multiscreen Corporation dramatizes the scope and complexity of these problems.

**THE ENVIRONMENTAL CONSUMER AREA** brings the same issues down to the individual level in a pleasant open-air courtyard. Oversized exhibits illustrate, and in some cases caricature, how the average American affects six aspects of the environment: water, energy, air pollution, wood products, solid waste, and pesticides. Related graphics and panels delve more deeply into the issues and suggest alternatives for the future.

**THE ENVIRONMENTAL ACTION CENTER AREA** presents a progress

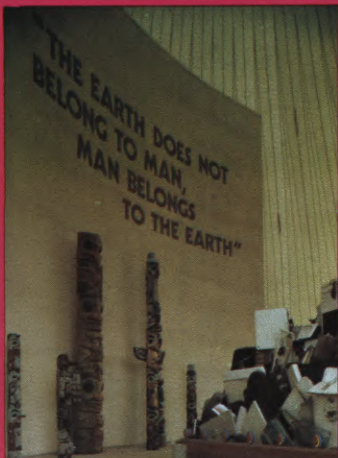
report on environmental legislation enacted by federal, state, and local governments. Visitors, now realizing that both individual initiative and government innovation are needed to overcome the problems facing us, are encouraged to become actively involved in finding solutions.

## THE FILM

Entitled "**MAN BELONGS TO THE EARTH**", the film contrasts scenes of this land's overwhelming beauty with examples of the pollution we create and live with, to show the direction we have been taking and dramatize the need to correct our abuses of nature.

The title of the film is drawn from a speech made by Chief Seattle of the Suquamish Tribe when the Federal Government offered to purchase his tribal lands in 1854. The words were chosen because they epitomize the attitude of our country's first environmentalists, the American Indians, and suggest that we should return to this way of thinking.

Continued on Page 1200



The United States Pavilion at Spokane's EXPO '74 is the largest and most prominent structure at the Fair. A soft-shell canopy rises as a visual extension of two earth-covered structures facing each other across an open-air courtyard full of striking exhibits. Inside an 877-seat theatre, audiences view a film in the huge IMAX format: "**MAN BELONGS TO THE EARTH**", produced by Paramount Pictures.





(LEFT) At night, the United States Pavilion adds a warm glow to the panorama of Spokane's World's Fair. (RIGHT) Totem poles of Indian tribes of America's great Northwest stand below a quotation from Chief Seattle of the Suquamish tribe: "THE EARTH DOES NOT BELONG TO MAN. MAN BELONGS TO THE EARTH". Inside the Pavilion is a life-size figure of the Chief, onto the face of which—and in precisely exact size—is projected a motion picture of the features of a man, as he delivers a lengthy statement on the sanctity of the environment.



(LEFT ABOVE) Projectionist tends the unique IMAX projector in the United States Pavilion. The theme film is being projected from the top pair of horizontal reels, while another print is being simultaneously rewound on the lower pair. (BELOW) Audiences sit enthralled in the 877-seat theatre, as the powerful film surrounds and involves them. (RIGHT) An image of Chief Dan George fills the huge (90 x 65-foot) IMAX screen in the theatre.



Shown in actual size are selected frames from "MAN BELONGS TO THE EARTH". The IMAX frame is 15 perforations wide on 70mm film. The picture is projected horizontally by means of a unique projector that rolls the film through in waves and makes possible the steady presentation of a huge image that is sharp and clear.





# "THE TAIWAN EXPERIENCE"



By TOM SULLIVAN

A spectacular 26-minute multi-media presentation utilizes sophisticated technology to tell the colorful story of a country and its people

The fascinating multi-media show which is presented inside the 235-seat theatre of the Republic of China Pavilion runs so smoothly and effectively that audiences never suspect how much time, money and technical know-how went into it.

The result is a credit to 30-year-old producer Gregor Greig and his equally young team from San Francisco. Greig is a veteran of the large expositions. He worked first at Montreal in 1967, then at Hemisfair in San Antonio a year later, and in 1970 at the giant exposition in Osaka, Japan.

Of his past working experiences, Greig says: "Like most others in the professional movie field, we've often had to cut corners, trying to get the job done on time and within budget. But not in this case.

"We had ample time, a satisfactory budget and full cooperation and total artistic freedom from our Chinese sponsors. There is no compromise on that screen. What we set out to do was done."

As a result, he was able to put more separate units of equipment into the presentation than perhaps anyone else before him, using the latest Electroson-

ics 2005 switching unit from England and pushing to the hilt its capacity for five different dissolve rates plus superimposition.

Though the 74-foot screen presented an unbroken face to the audience, the bank of slide projectors was set up so that seven equal images of 10½ by 10½ feet are formed across its width, with four Kodak Ektagraphic carousels assigned to each panel and seven more Sawyers used for special effects and kaleidoscopic overlays.

Greig, his wife, Kathy, who acted as production assistant; Canadian cinematographer Richard Laier, and still photographer Roger Archey made two trips to Taiwan gathering material, with Archey making a staggering 10,000 Ektachromes with a pair of Hasselblads.

Laier used a modified Arri 2C that produced an image ratio of 3 to 1 from sprocket holes to sprocket holes, even on the area where the sound track would normally be.

"That posed a printing problem," Greig said, "but Joe Lee and his crew at Consolidated Film Industries saw us through to a release print that included 16mm images printed either singly or three side-by-side in that three-to-one

frame, which turned out to have the same height as a 16mm normal picture."

A lens formula was worked out for the movie projector so that the full 3-to-1 ratio would cover three of the 10½-foot areas on the screen, and when the 16mm images were up, each would fill one of those panels.

Movies and slides were blended so smoothly that many viewers must have lost track and credited most of the presentation with movement. To enhance that effect, Greig used a panorama camera that produced transparencies seven inches wide, and mounted them carefully in three separate slides so that a broad, continuous image was created from three projectors.

Or a scene might open with one slide and add the other two in the direction of the key feature of its composition.

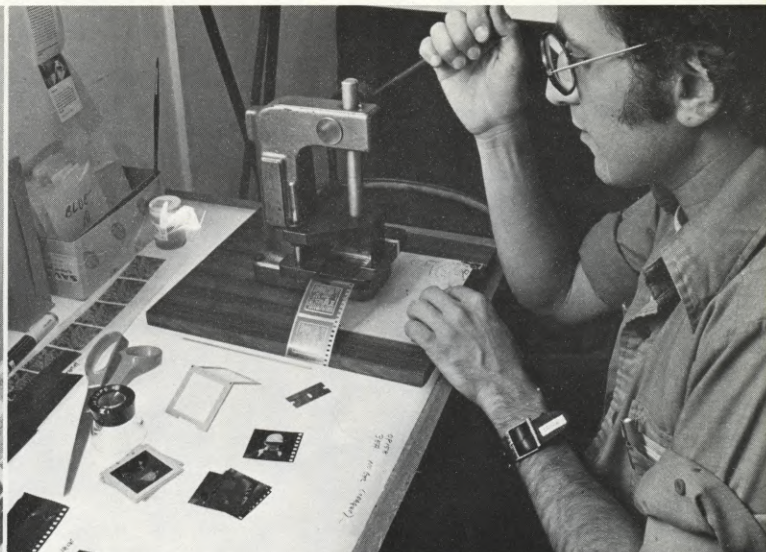
Greig obtained a further dramatic effect by using point sources of colored light behind the screen at the center of projected images of fireworks or neon lit streets to give unusually bright high-lights.

Because the equipment to be used would require super slides rather than the 2¼ by 2¼ transparencies produced by the Hasselblads, Ted Iserman, Media

(LEFT) Gregor Greig, producer of the Electrovision production, "THE TAIWAN EXPERIENCE", featured in the Republic of China Pavilion at EXPO '74, shown with the panorama still-camera used for multi-screen pans. (RIGHT) Director John Cavala programming the show in San Francisco. Programming the multi-projector show was one of the most intricate and time-consuming phases of the project. It was completed in a record five days.







(LEFT) Editor Roger Archey and Designer Charles Frazier select stills shot by a panorama camera. Every photograph used in the show was a 2¼ x 2¼ or larger transparency and quality was maintained by reducing from the original. (RIGHT) Technician mounting slide duplicates. All mounting was done in glass, using "Wess" mounts. Duplication of slides was done by means of a Forox camera.

Generalists' lab manager, used a modified E4 process to obtain a slightly lower contrast than Ektachrome normally delivers, and once the slides for the show had been chosen and locked in to the story board of designer Ted Frazier, they were duplicated to the smaller size on a Forox camera and put in Wess mounts.

The quality remained intact through this process so that it was difficult to believe that no original material was used at any time in the 26-minute show.

As Frazier formulated the sequences on the story board, with narration, sound effects and music listed below each panel, he decided images of ancient Chinese art would show up best in lithograph form so they were copied on Kodalith and often used as overlays, as were amazingly varied kaleidoscope slides from the special effects projectors.

John Cavala, director and sound engineer, put together the track, adding a final dramatic touch with a delay on narrator Robin King's voice in certain places so that it appeared to trail off from the three primary speakers beneath the screen to others along the walls.

Despite the complexity of the setup, once Cavala locked all the signals for the switcher into a half-inch tape on a four-track Ampex, one person was able to run the show. Greig stayed on in Spokane for a month training the Chinese personnel, and from that point they took over.

Media Generalists were sub-contractors to Electrovision, Inc., who put the Chinese exhibit together after Brooks-Hensley-Creager, a Spokane architectural firm, built the pavilion. ■

## BEHIND THE SCENES OF "THE TAIWAN EXPERIENCE"

By ROGER ARCHHEY

*Media Generalists, San Francisco*

The "TAIWAN EXPERIENCE" is a spectacular 26-minute multi-media presentation which is the focal point of the Republic of China's pavilion at EXPO '74. The show utilizes 28 Carousel projectors, a 3:1 wide-screen 35mm film, rear screen lighting effects, an "envelopmental" surround sound system, and a dazzling array of special effects devices. It's controlled by a small digital computer system, and is shown on a 70 foot wide screen. It represents a prime example of the communications and entertainment possibilities available in multi-media when designed around "state of the art" production and equipment technology.

Electrovision Productions, Inc. and Media Generalists of San Francisco were given the task of producing the show for the Republic of China (Taiwan). Electrovision, which has produced such multi-media shows as the San Francisco, Hawaii, and New York Experiences, was contacted by the government of Taiwan to tell their story to the fair-going audience. Electrovision, in turn, selected Media Generalists to produce, engineer, and install the show in the theater at the fair site.

Time was a key factor from the start. There were only nine months from contract signing to the delivery of a finished product; our responsibility included theater design and installation with an April 1 delivery date for the production.

After tentative budget breakdowns

were prepared a creative team of producer, writer, and designer travelled to Taiwan to scout locations and gather information. Two weeks on location gave us enough material to produce a first script. Needless to say, there was a great deal of distance between the Government Information offices on Taiwan and the media-conscious American fairgoers. Thus, the writing and eventual approval of the script required considerably more give and take than usual. The final script was a satisfactory compromise that covered the information that the Chinese believed necessary, while maintaining a light, entertaining, non-political attitude. We spent August and September working out the format of

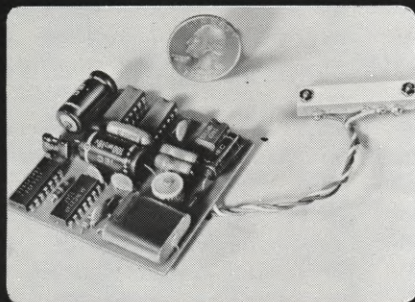
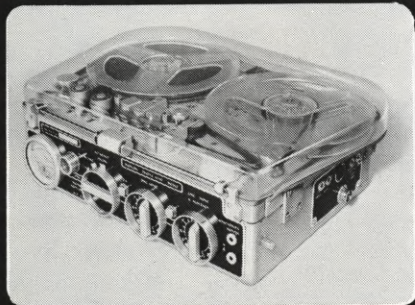
*Continued on Page 1194*

Lab technician Pat Johnson processing 46mm slide-film in custom-made developing tank. Unusual format required special lab equipment.





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# "MOTHER EARTH, FATHER SKY"



By JOHN HOLMSTROM

Producer/Director

As a film maker with Ford Motor Company people usually respond to me in one of two ways: "Oh, you do those commercials with the big Cougar on top of the car?" Or, "How many of those hi-speed films of test cars crashing into walls do you shoot?" I don't do either, because commercials are shot by ad agencies and crashes by engineering photographers. My assignments have, in the eight years I have worked with Ford public relations, included producing, writing, directing, filming, and editing auto racing, travel, documentary, news, marketing, and educational motion pictures. I have been in most of the United States, traveled Europe, Africa, Mexico, Canada, and the Middle East and filmed from cars (Ford, of course), helicopters, airplanes, race cars, tanks, camels, motorcycles, horses, shopping carts, motorboats, and inner tubes. I dropped a Bolex cover plate in the river Seine, was shot at in Copenhagen, lost in Mexico, filmed an animal sacrifice in

Africa, and recently completed a film maker's dream assignment, a film for the Spokane World's Fair.

When Ford committed to participating in the Fair, their exhibit plans included a film theater where they wanted a short film compatible with their overall theme, "*Celebrating Tomorrow's Fresh New Environment*". Although the budget for the twelve-minute film could be considered minimal in light of a minute commercial, the production had to concern itself with the joy of outdoor living. My department, Film and Electronic Communications, was assigned the production.

Conversation with my boss, John Pepper, indicated that there really wasn't a script or definite story line. I was strictly on my own. My responsibility was to produce, write, direct, shoot, and edit a twelve-minute film that would be shown to millions of viewers at the World's Fair. Due to budget considerations, I decided to

shoot in 16mm and blow the final cut to 35mm. My main production assistance came from Zack Kreiger, head of Chronicle Films in Virginia. Zack, an all around film-maker and good friend, assisted me in the sync sound shooting sequences, sound recording, and as my patient assistant.

During the six months I devoted to the film I found myself shooting with a Bell and Howell DR (which I purchased in 1960 used for \$125.00; it's been in Japan, Africa, Europe, etc; the perfect back-up silent camera for me), an Arriflex BL, Eclair ACL, Arri S, plus a Photosonics and a Mitchell for 400-frame sequences. Locations were in Washington, D.C., New Mexico, Arizona, California, Florida, Michigan, and New York. Over 30,000 feet of Ektachrome Commercial was shot, and hours of sound were recorded by Zack Kreiger as well as Laguna Beach's Chuck Everts, a former Philco-Ford colleague and present day freelancer. Don Renn of Key Biscayne, Florida provided me with the film's underwater views which we shot at John Pennekamp Coral Reef State Park in Florida.

An early visit to Cinema Research in Hollywood indicated that a blow-up from 16mm to 35mm with a 1:85 to 1 ratio was possible. My final wide-screen 35mm image resulted from cropping top and/or bottom of my 16mm frame to fit the desired format. As I filmed, I remembered that I would lose part of my 16mm format.

The first month was spent in research. I decided that some portion of my film would include "old time views" of outdoor enjoyment and activities. This led to the National Archives in Washington, D.C. where I spent several days poring over old black and white footage. I eventually decided on footage of older women in long dresses mountain-climbing, two men camping with a Model T ford, and feeble, early attempts at water skiing. This footage, I felt, would serve as a lead-in to more contemporary activities such as ballooning and frisbee-throwing. More research yielded a book of ancient Indian poems, one of which was written by an unknown Tewa Indian. "*Song of the Sky*

Zack Kreiger (right) points microphone to record sound on Arizona's Salt River near Phoenix, as John Holmstrom hand-holds Bell & Howell camera while floating in inner tube. His subjects, three Arizona high school students, were reluctant to enter the December-chilled water until the cameraman shamed them into it by going in first.





*Loom*” was the title and the poem included the words “mother earth, father sky”, and when I checked the copyright in the Library of Congress and found it to be in public domain, I knew I had the title to my film.

My decision to use the poem led me to Espanola, New Mexico and the home of Juan Chavarria, a Tewa Indian from the Santa Clara Pueblo. Juan recited the poem for me and I filmed a close-up of his profile in silhouette using an ACL and a 200mm Angenieux lens. As Juan spoke the words of the poem, I eventually had Cinema Research’s Craig Dennis optically dissolve into the darkened silhouette area of Juan’s head, pastoral views of sunsets, lakes, deserts, grass and rain, which visually matched the verbal content of the spoken poem. Juan was also filmed walking across the New Mexico terrain. He wore his father-in-law’s 100-year-old buckskin jacket, and the clear sky and patches of snow provided a fitting background for this gentle man of the earth.

To contrast with my footage of yesteryear’s outdoor activities, I decided to film in New York City’s Central Park. I obtained the necessary permit to film in the park through the office set up by the mayor. The permit is free, takes only minutes to obtain if you are a professional film-maker, and saves lots of time. Utilizing an Arriflex BL we shot “talking heads” of people in the park commenting about their concept of outdoor life. In the final film I split the screen for these comments and on the main portion of the picture I would match visually what the person was talking about in terms of their particular appreciation of the outdoors.

Of the 15 or 20 New Yorkers we approached and filmed in the park we had only one turndown, a good average attributable to production assistant Judy Owen’s winning smile and persuasiveness in obtaining releases. Thanks to our permit, we were allowed to take Zack’s truck and our equipment anywhere in the park, which was normally closed to vehicles on Sunday.

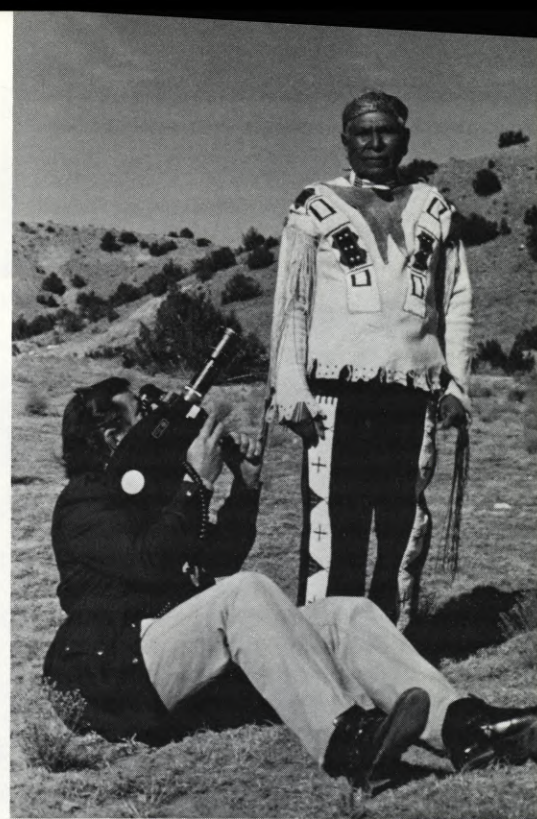
The Central Park footage led into a sequence of hikers in the Grand Canyon. My “actors”, a young, colorfully-garbed couple from Germany who were traveling across the United States by bus, were snared in a parking lot on top of the canyon. When I told them I had a helicopter and was heading deep into the floor of the Canyon to film at the fabled Havasupai Indian reservation, they unhesitatingly agreed to perform as hikers!

Three young black Arizona high school students were my eager performers for a sequence on river inner-

tubing. Eager, that is, until they entered the December chilled water! I shamed them into the cold water as I entered it a number of times very casually, grinning as my body twitched in protest, and they soon followed, figuring that if an aging cameraman didn’t complain, they certainly weren’t going to! The day ended with Zack in one tube, guiding one of the youngsters in another, and me, Bell and Howell in hand on a third tube, filming the boy hurtling down the river with all of us shivering and twitching from the cold water.

I have been constantly refreshed during my variety of film-making efforts over the years to continually find people who go so far out of their way to provide me what I need for a shot. Such a person was Rusty Gant of Wickenburg, Arizona’s Rancho de los Caballeros. When I expressed an interest in shooting a chuckwagon breakfast on the desert, gracious Rusty trotted out his full complement of young ranch workers, a chuckwagon, numerous horses, several youngsters, some leathery cowboys, plus a full spread of bacon, eggs, toast, and steaming coffee!

In a demonstration of cinematic derring-do, the author rides behind 13-year-old Cheryl Checcini as she drives her motorbike through the woods. In order to film closeup of her features during the bumpy ride, he holds the Arriflex alongside her face with one hand, while balancing himself with the other hand and gripping the bike with both knees.



Filming a low-angle shot of Juan Chavarria, a Tewa Indian from the Santa Clara Pueblo. For the film, Chavarria recited an ancient Indian poem, “*Song of the Sky Loom*”.







Filming at the foot of spectacular 200-foot-high Mooney Falls in Havasu Canyon, beautiful reservation of the Havasupai Indians.

All at 6 a.m. in the morning! Although I have always made it a practice not to get carried away with commercials in film I must admit that when I edited this sequence I included a shot of two little boys eating their breakfast atop the chuckwagon. There just happened to be lettered on the wagon near the boys the name of the ranch. Thanks again, Rusty!

As the shooting progressed, my concept of the film resolved itself into a free form view of people's attitudes about the outdoor experience and how they personally felt about it. The film, in reality, would fit together on the editing table. As I shot I kept in mind that the human experience was what I wanted. With this in mind I approached Bob Moline, a performer and song writer on World Harvest Records in Hollywood. We had shared many good times when I lived in California but I never had the opportunity to utilize Bob's ample writing and singing abilities in a Ford film. I gave him a list of subject matter that I had or would film and he set about composing a song. The result, "*The Feel of Freedom*", wraps up the film and was shot in sync in the late afternoon at Newport Beach, California, during a beach party marshmallow roast.

Perhaps the most commented-on portion of "MOTHER EARTH, FATHER

SKY" is the frisbee sequence. It starts with a frisbee being thrown at the beach, then it arches into the air and lands on the desert where two Mexican boys exchange it. As one throws the frisbee, my low-angle Arri S shot a rear view of the arm arching out in front of the 10mm lens. Then I cut to an on-board view of the frisbee hurtling towards the other boy. Actually, the frisbee was on board the camera. Using a 5.9mm fish-eye lens I hung the frisbee over the top of the lens; through the viewfinder I could see about 1/4 of the frisbee on top of the frame. I then put one hand on top of the frisbee and the other underneath the camera and ran towards the boy "catching" the frisbee. As I approached him he reached out to the camera and plucked the frisbee off. My job was to run fast, keep the camera steady, watch the catcher, and not fall flat on my face. After three or four takes, I decided to give the boys a rest, as I didn't want to wear them out. Also the perspiration spilling into my eyes prevented me from seeing! The frisbee

then glides down to my 16-year-old niece Debbie, standing in front of the George Washington Memorial in Washington, D.C. After several exchanges with her friend Diane, the frisbee ends up back on the beach, skimming over the fingertips of a young lady as she jumps up. I then optically froze her in mid-air, suspended there just as the last note of the sound track sounds.

The sequence of the children playing in the fall leaves featured a 400-frame shot of a beautiful little blonde boy, arching up against the sky, out of a mound of leaves his little friends had buried him under. To get a clear sky background for the high-speed sequence we placed the boy and the leaves on a 4-foot-high table and the Mitchell camera on a hi-hat on the ground, shooting directly into the sun with a 10mm lens. The final view shows the boy leaping directly in front of the sun, and the leaves slowly spilling around him. I used two reflectors and a quartzlight to fill in this backlit scene. This simple shot of a

Continued on Page 1228

Johna Pepper, Manager of the Ford Motor Company's Film and Electronic Communications Department, looks on while John Holmstrom works at three-picture-head KEM editing console. He found this equipment ideal for cutting his film, due to occasional use of multi-image and the capability of using two sound heads as he edited. Editing of the 12-minute film took six weeks.





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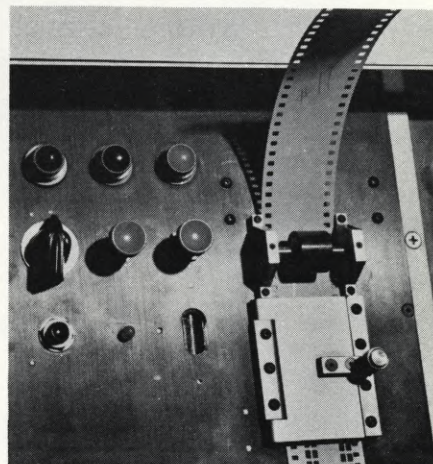
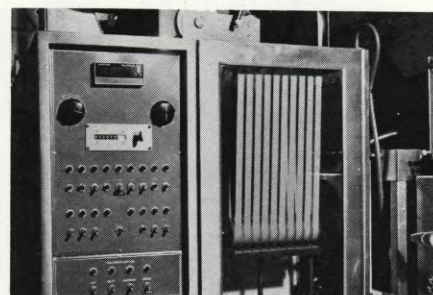
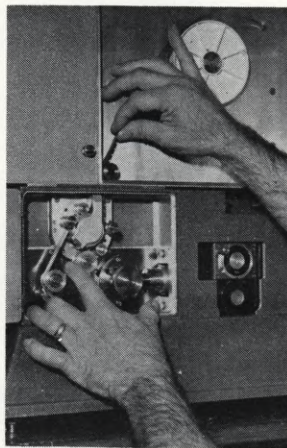
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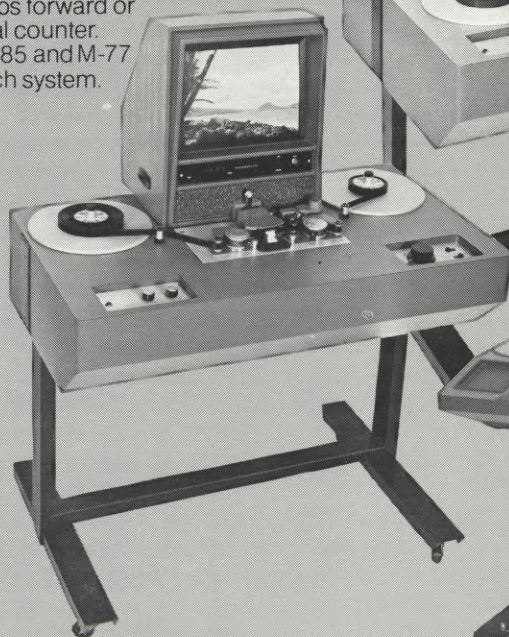


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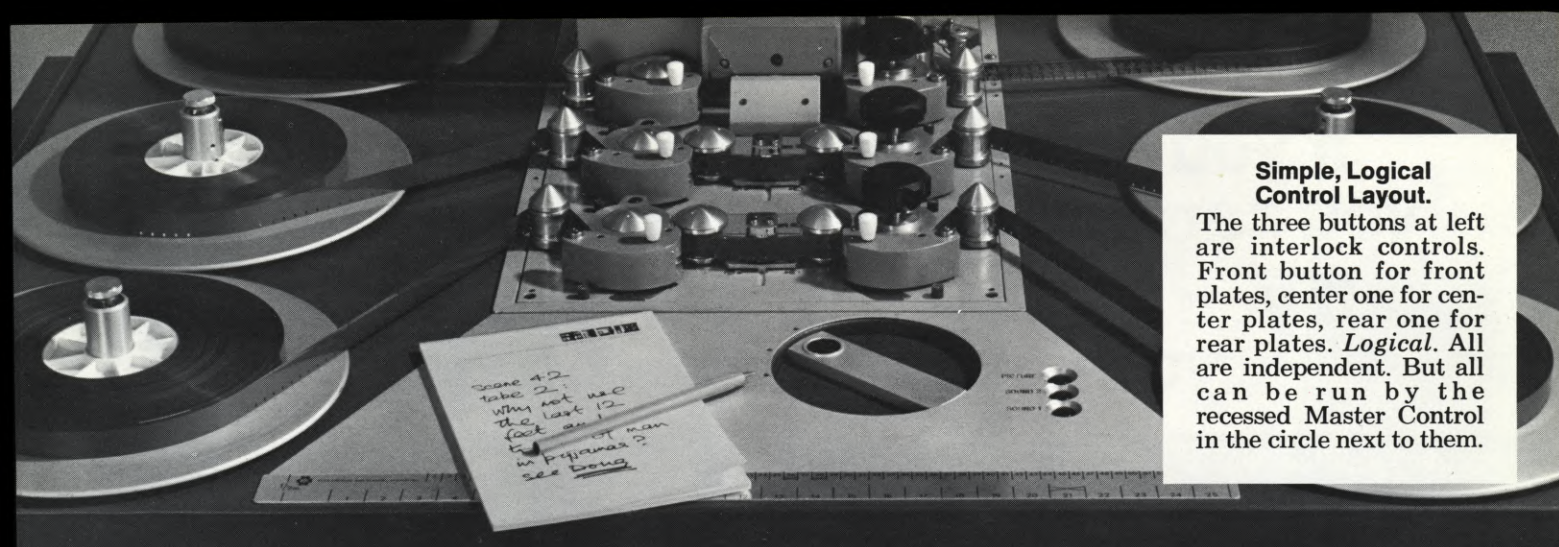
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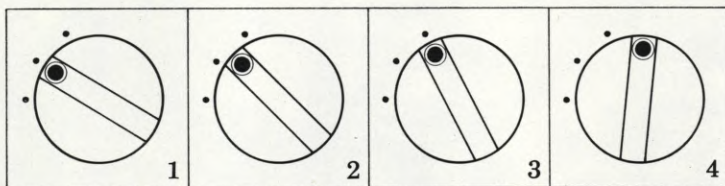
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# PUTTING A DOG'S POINT OF VIEW ON FILM

-In filming "BENJI", cinematographer does gymnastics to capture the point-of-view of lead character who stands only a foot-and-a-half tall

By DON REDDY

Director of Photography

"BENJI" is indeed a unique film. Unique to watch (thank goodness) but even more unique to help create . . . especially from a photographic standpoint.

Most dog movies are films about dogs from a people's point-of-view, but "BENJI" is a film about people from a dog's point-of-view . . . all played entirely "for real" without any gimmicky talking dogs or voice-over narration.

This posed all sorts of strange problems, especially when you consider that the dog in question only stands about a

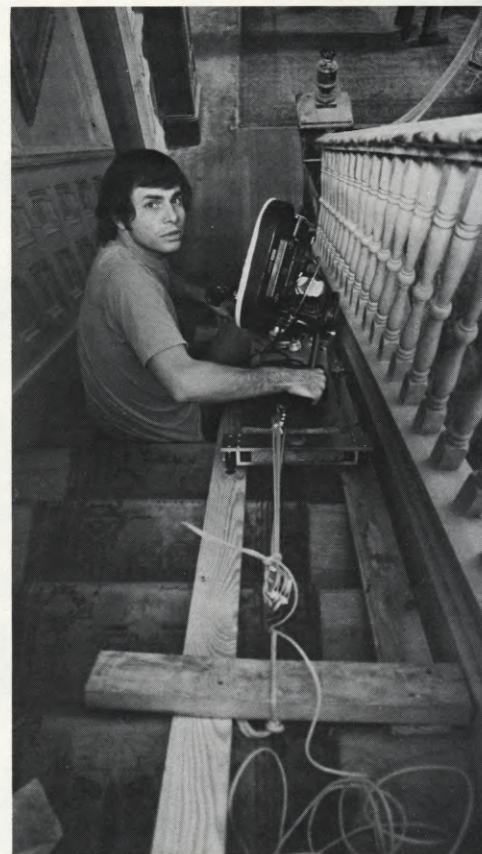
foot-and-a-half tall. My assistant, Jim Etheridge, and I spent the better part of three months lying on floors, crunched up in corners, and in general learning how things looked (and felt) from a dog's eye level.

We had to start by designing new kinds of camera support equipment since there's not much on the market designed to put a lens a mere foot-and-a-half off the floor. This was important, not only to see things from the dog's point-of-view, but because photographic intimacy with the dog was important to audience involvement in the story. With the guidance of director Joe Camp and trainer Frank Inn, the dog did some unbelievable acting, expressing feelings and emotions with his face and eyes, so we had to be down low and in tight to get the right "feel".

The first piece of equipment we designed was an offset rig that, when attached to the base plate of an O'Connor 100 head on a High-Hat, actually put the bottom of an Arri II-C about three inches off the ground. This rig gave full tilt capability, but because the rig placed the camera off to the side of the head it limited our panning capability, because the camera would "swing" rather than pivot on an axis.

Another item that assistant Jim Etheridge designed and built was a sort of skateboard dolly . . . a heavy two-inch board on casters with a built-in mounting for the O'Connor 100 head. This put our Arri lens about two feet off the floor and gave us incredibly smooth dolly capability in cramped areas. When we needed to get lower and

look up at the dog, we'd use this rig in conjunction with the offset rig. We also used the Fisher crab dolly to great advantage because its boom arm and offset plate got us down to a lens height of about two feet . . . but because of its

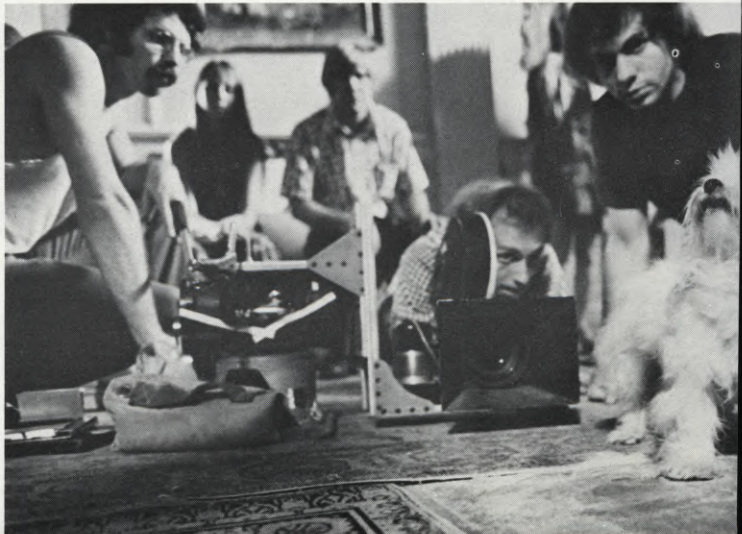


Director of Photography Don Reddy uses "skateboard" dolly—a heavy two-inch board on casters with built-in mounting for O'Connor head.



This shaggy character, whose real name is Higgins, plays the title role in "BENJI", first feature by Mulberry Square Productions of Dallas.

(LEFT) Getting the dog's point-of-view on film entailed hunching down behind the camera on a low-slung dolly pushed around the room—a good way to get curvature of the spine. (RIGHT) Assistant cameraman James Etheridge, writer-producer-director Joe Camp and Cinematographer Reddy prepare to shoot a scene with the lens four inches off the ground to get a low-angle shot looking up at Tiffany, fluffy lady dog who plays Benji's love interest in the film.







(LEFT) Piled up against the wall with the camera at its usual low angle, Reddy gets ready to shoot a scene. (RIGHT) Dallas Dolly, a low-slung platform dolly with wheels that conform to metal track, was used to get trucking shots of dog—at his eye level—as he trotted and, in some cases, ran full tilt down city streets and up back alleys. For some shots, as much as 300 feet of dolly track were laid.

size it was limited to our more spacious locations.

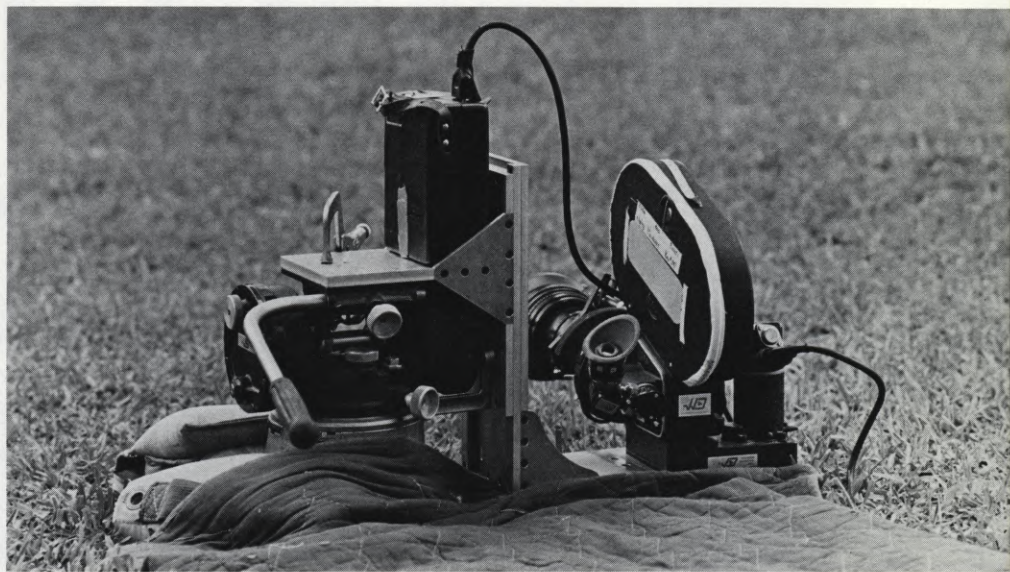
There were many times when we had to truck with the dog—at his eye level—as he trotted and, in some cases, ran full-tilt down city streets, up back alleys and across rough ground. We handled these assignments in two ways depending upon the terrain.

On relatively smooth streets, we worked off a platform attached to the underside of a car with bolted clamps. The platform itself was only a matter of inches off the pavement and a bump in the road often resulted in the platform “hitting bottom” (its own and mine). When the platform wouldn’t work, we laid up to three hundred feet of Dallas Dolly track (metal tubing that connects together much like railroad track) and a Dallas Dolly, which is a low-slung platform dolly with an ingenious wheel setup that conforms to the track. This is an extremely fast setup and leveling job and gives glass-smooth dollies. We generally used this rig in conjunction with our offset rig to get lower.

But one of our most valuable pieces of equipment was a \$1.98 “lazy susan” from the local dime store. It gave us no tilt capability but, when used with a wedge and a little gaffer’s tape, gave us 360° panning capability with an Arri lens height of one foot off the ground.

“BENJI” was shot entirely on location and the two key interior locations each posed unique problems. The first was the interior of an old abandoned two-story house that Benji used as his home. The story prescribed that this was, in effect, the town “haunted house” . . . the kind of house that kept kids walking on the far side of the street. So it had to have an eerie, spooky feeling about it, yet most of the interiors called for were *daytime*. Too, we wanted to keep it as natural, real-

Continued on Page 1220



Specially designed and built offset rig that, when attached to the base plate of an O’Connor 100 head on a High-Hat, actually put the bottom of an Arriflex II-C camera about three inches off the ground. This rig provided full tilt capability, but because the rig placed the camera off to the side of the head, panning capability was limited.

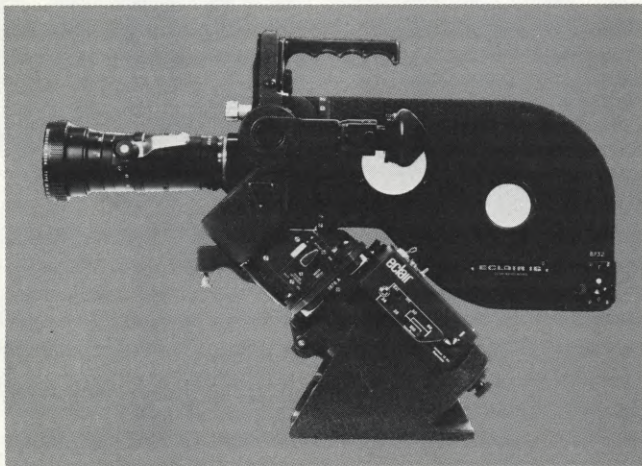
The 360° circle rig designed for filming the “love montage” sequence in “BENJI”. A \$1.98 “lazy susan” from the local dime store was pressed into service to form the basis of another 360° rig for low-angle shots. Combined with a wedge and a bit of gaffer tape, it made possible full panning capability with the Arri lens one foot off the ground.





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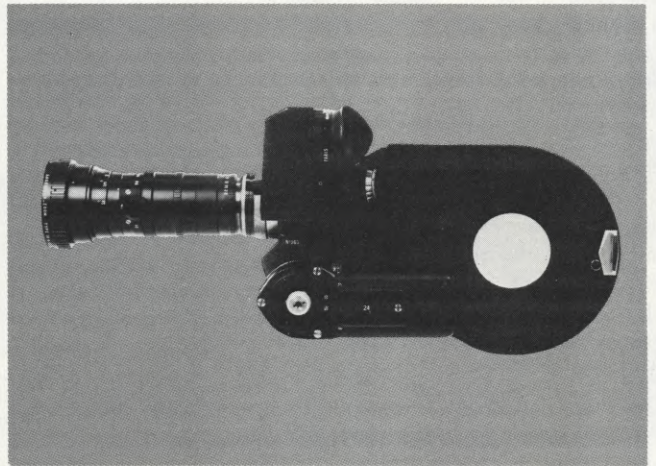


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# California Split

a Robert Altman film

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## "ABOUT TIME"

Continued from Page 1165

location, which provides filming continuity and progression, and a *Symbol of Nature*, around which the plot line generates."

### "Time Being" (Time Cycle two)

"In this act, we introduce our second important physical presence; another of Nature's finest creations . . . a beautiful child. The child is a Symbol of Humanity, and through her we see the affinity and affection that humans, during their earliest stages of development, have for Nature. To the child, the Tree is the most awesome living thing she has ever experienced—it is immense, strong, protective, constant, beautiful—and truly an expression of God. But, as the child grows, she drifts away from the natural things she instinctively loves. Through the demands of her inherently more sophisticated life form, she gradually becomes a creature of technology . . . a



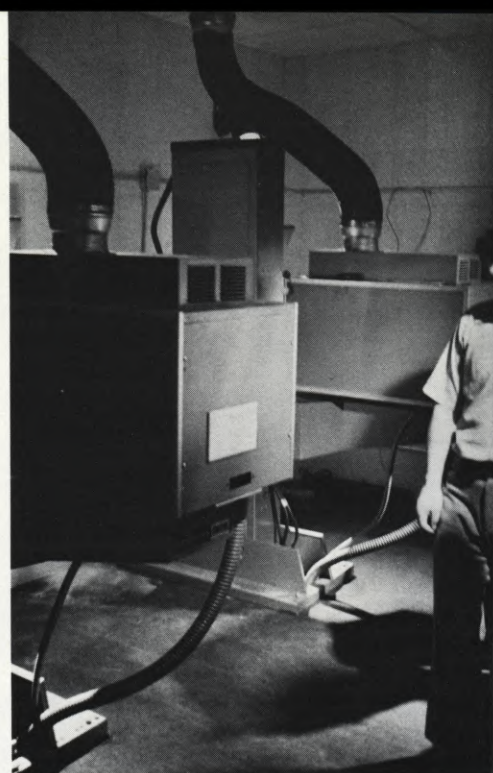
A seemingly ageless tree and a young girl's face from infancy to adulthood are the contrasting elements in the Washington State Exhibit for EXPO '74.

being of time. The Second Act ends with an insight which the child, (older now), experiences, while captured in a totally man-made, synthetic environment, which is in dramatic contrast to her (and humanity's) natural origins. The child realizes that Man, influenced by the imposed restrictions of his individually limited time, is too often at odds with Nature . . . too often destructive of the things that matter most in life."

### "Beyond Time" (Time Cycle three)

"The Third Act is intended to create a romantic, timeless quality and mood. It means to appeal to the feelings of nostalgia, the simple need for natural beauty, and for an appropriate sense of the human values essential to us. The child becomes a woman; the woman revisits places that were meaningful in early life. She returns to her birthplace and rediscovers its astonishing natural beauty. She also discovers the love of a woman for a man, thereby sharing—and intensifying—the wonders of nature. In the process, she recognizes the truth of the things she had sensed only instinctively as a child: her kinship with Nature and all living things, the need to honor life in general, and to reorder her own life, restoring its essential human values. Finally, she returns to that special Tree. When she touches it, she is touching Nature. When she finds a child in its branches, she finds not only herself, but future generations of humanity—joined with Nature. All at once, she has reached back to the past and out to the future: in doing so, she reaches Beyond Time."

Philosophically, the film tells us that "man belongs to the earth . . . but earth



Custom projection booth, housing two Norelco DP-75mm projectors, modified with new Christie xenon quartz lamp housings, with horizontal light source for better screen illumination.

belongs to God, not man. It is an earth we have no rights to, only privileges . . . and a responsibility to save—not time—but earth itself, for those who follow in time."

Encapsulated as it is, of necessity, it still seems to "read" like a feature, after all, unless this is just wishful thinking!

Whatever its eventual format, since most film offerings at world's fairs are free to the theatergoer, its ultimate fate is not unlike that of any nationally distributed feature film: if it's good—if

(LEFT) Director of Photography Jack Priestley and crew atop the "Ferco-Van", which proved invaluable on location. Every square inch is packed with equipment, including Elemack dolly and 50 feet of track and a built-in loudspeaker system. (RIGHT) Gas-powered wind machine (at right) is used during filming of key scene in the film: the two-year-old Jessica turns in a field as, as she does so, evolves into Jessica, aged five, by means of a dissolve.





it truly entertains—it succeeds, but if it's a flop, you can't give it away, even with a bigger "ADMISSION FREE" sign at the front door of the pavilion!

If you've attended past world's fairs, you've seen the tendency to surround a film presentation with "gimmickry." In the '64 New York Fair, Eames lifted hundreds of people up into an IBM "egg" to view a 15-plus-screen presentation.

In the United States Pavilion at EXPO '67 in Montreal, the designer transported the audience through tunnels, under large projection screens, that swung away as the audience traveled by.

In New York, in '64, Francis Thompson proved a point when he kept the audience in a fixed, seated position, and concentrated on filmic content in his "TO BE ALIVE". His "gimmick" was to use a 3-part split screen format, using a three-35mm synchronized projection system. The offering won an Academy Award. At EXPO '67, in a film he made for us for Canadian Pacific Railway (we designed the pavilion and exhibits, and assigned Thompson to make the film), he attempted to capitalize on his Oscar-winning format, and upped the screens to six. The film was called, "TO BE YOUNG", and although nice, never achieved the success that "TO BE ALIVE" did. Part of the problem was in the medium's overpowering the message—a mistake we vowed not to make at EXPO '74 in Spokane, Washington.

We realized that added dramatic effect is desirable, and, as you read on, you'll see we had our "gimmickry" too, but the film concept was designed as a single screen presentation, and works



The rear-projection screen, as seen from the lower viewing tier. The screen is made of a custom-extruded plastic material, produced especially for this theatre by Harkness Ltd., London. The one drawback of the rear-projection system was the tremendous amount of space lost in providing a 100-foot image throw from the projection booth to the screen.

extremely well without the special effects. (This is a good thing to keep in mind, for it gives the film extended life if, after the fair, the client desires to use the film for television or as a feature short subject for national distribution.)

#### ENTER: THE CLIENT

We've had major programs with governmental agencies before, and they can get tacky, what with 10 and 20-man committees to deal with.

Fortunately, in this program, the State assigned a small, efficient committee to choose the film producer and exhibition designer, and to furnish them with background and initial direction.

Once the contract was signed, two

men were assigned as liaison: one with the State of Washington; the other the coordinator of pavilion design. Again, fortunately for us, both of these men subscribed to the philosophy that you hire professionals because you want their creative thinking and their experience, and you let them run with the ball.

It was the best-managed governmental program that I can recall.

At one key juncture, in order to gain the approval of the film treatment, it was necessary to present our concept to the State Legislature. The question became, "How do you communicate with dozens of men and women, all with

**Continued on Page 1206**

(LEFT) The "Sunbrella" that came with the van protected the film (and camera crew) from the intense heat, but FERCO provided no equipment in the van to combat the rattlesnakes. (LEFT) Shooting in the super-dense Hoh Rain Forest, where the biggest problem was getting enough light to film effectively. Production crew lucked out on the often-rainy weather in Washington, and the sun stayed with them during most of the shooting.









“What film and cameras can do with football is nothing less than art.

“I get the biggest charge out of really seeing what a 255-pound linebacker coming through the air sideways looks like. In slow motion put to music. Film shows the dirt, the sweat, the effort, the pain and the ecstasy of pro football.

“Our kind of filming art means a lot of action. Think about how close a cameraman on the playing field comes to getting creamed on a scrambled play. I remember last season when Phil Tuckett got tackled along with a split end. We almost lost him. If it weren't for fast feet and 16mm cameras, NFL Films could never have shown the fans what it's like to be in on a tackle.

“NFL Films is popular because we take the best parts of thirteen games each week and condense them into many great shows. We shoot over 100,000 feet, that's 20 miles, of Eastman film every week; sometimes over 50,000 feet in one game. It takes a lot of editing but it's easy and worth it. Film gets to people wherever they are...at home, in clubs, overseas—in fact, all over the world, wherever there are football fans. Even on airplanes.

“Television coverage of football is good as far as it goes. But with film we can show more people more games, the key plays, the upsets all over again. With one big difference: It's from our point of view. I mean, we can interpret the events, not just report them.

“Film just makes football better.”

---

Ed Sabol, president, NFL Films, Inc.



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# THE DOCUMENTARY AS ART

Heading toward its eighth year on television, "THE UNDERSEA WORLD OF JACQUES COUSTEAU" proves that documentaries can be entertaining and informative—and still win awards as "art"

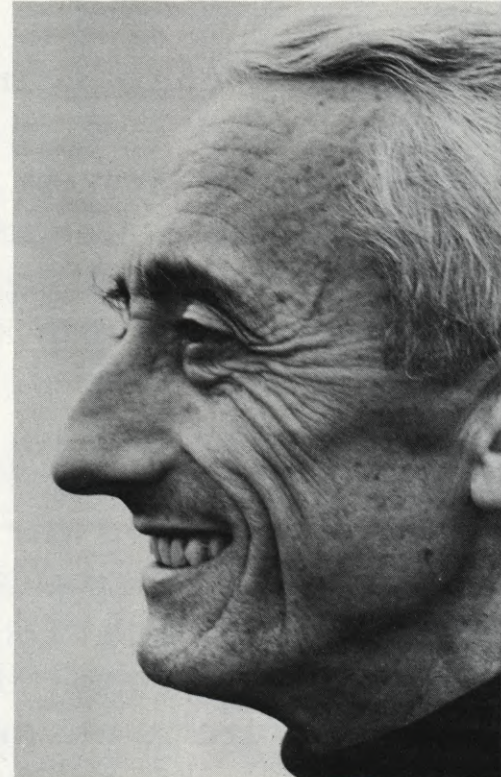
By JACK G. SHAHEEN, Ph.D

Research grants from Southern Illinois University at Edwardsville made it possible for me to observe the Cousteau post-production process at close range. Because of my interest in the documentary *genre*, an invitation to study the series was extended by the executive producer, Marshall Flaum. Subsequently, I spent several weeks in Hollywood, where I had the rare opportunity to study the making of the Cousteau documentaries—beginning with research, editing, writing, narration, sound effects and music—to the final release print. Interviews with series producers, editors, production supervisors and other personnel were also obtained. Additionally, I was able to read scripts and view all twenty-eight documentaries, which have been aired since the Cousteau series made its debut in January, 1968.

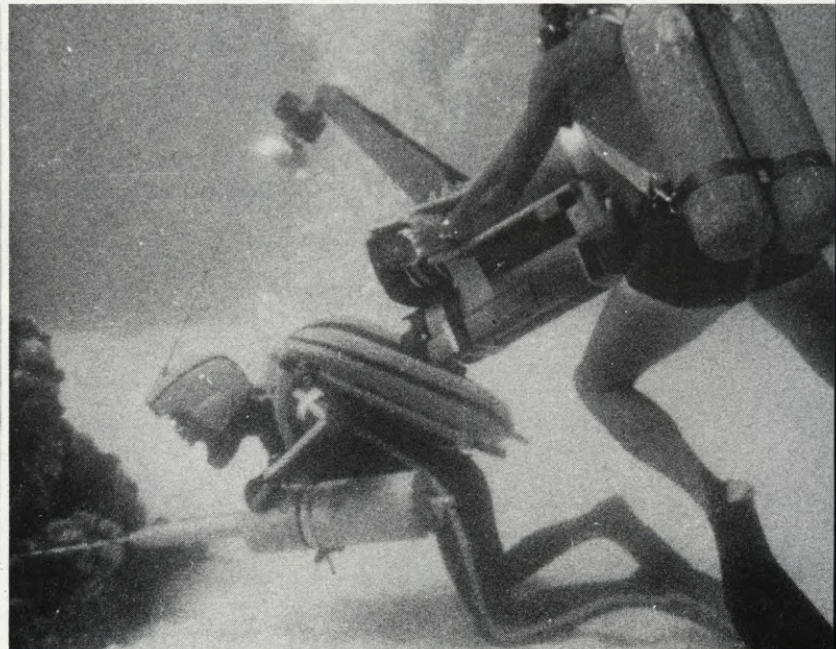
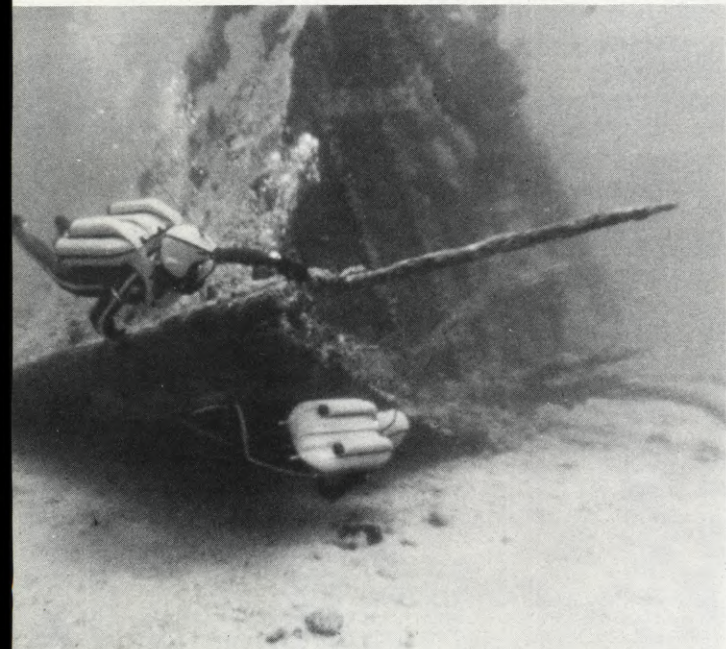
The purpose of the Cousteau series, the first regularly scheduled television program with a strong message concerning ecology, is to give viewers new insights into the ocean, its resources, the problems of conserving it and the mar-

velous wild life found in it. The documentaries probe significant subjects, life, death and the conservation of nature. When asked why he produced "THE UNDERSEA WORLD OF JACQUES COUSTEAU", Cousteau replied: "To improve the condition of man is the purpose of life, and the goal of science is to make people more happy. I film it because I love it." Cousteau's documentaries show us our endangered environment and also reveal the delightful, but sometimes precarious, life processes of manatees, seals, sharks, squid, whales, iguanas, salmon, sea otters, walruses, octopuses and other mammals. The films are distributed throughout the world where media professionals are in agreement that the series is one of the most individual, worthwhile and entertaining projects in television history.

Although Jacques Yves Cousteau and his aquanauts have covered nearly 300,000 miles of sea on film-making and oceanographic expeditions during the past seven years, it has always been



(ABOVE RIGHT) The legendary Capt. Jacques-Yves Cousteau, world-famed oceanographer, author and film-maker. His films based on his books (*"The Silent World"*, *"The Living Sea"* and *"World Without Sun"*) have won grand prizes in film competitions at Venice, Cannes and Paris, as well as three Academy Awards. (BELOW LEFT) Two of Cousteau's divers explore a very old shipwreck prior to filming. (RIGHT) Cameraman shoots scene of diver moving toward coral reef, carrying a large syringe filled with tranquilizing solution used to sedate marine animals temporarily, so that they can be studied.





the responsibility of Metromedia's post-production staff to transfer the footage into handcrafted films. Post-production is responsible for all production, from the time that the actual program is filmed to the time it is delivered to the network for airing.

#### Picture Edit

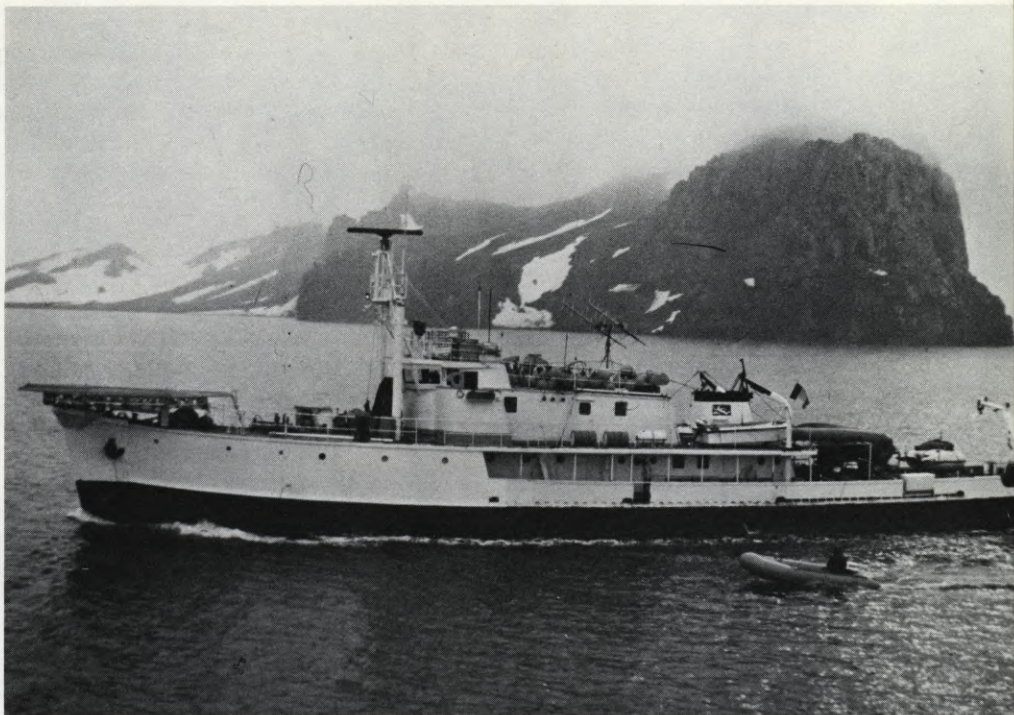
Post production begins with the picture edit. According to John Soh, who works a minimum of ten hours a day, the shooting ratio for a Cousteau special is usually 85 to 1. This means that for a one hour show, Soh must work with 60,000 to 150,000 feet of film. Soh welcomes the editing challenge: "It's just the whole idea of seeing 100,000 feet of film and an impossible schedule and a tremendous amount of work that has to go into it, the whole creative aspect of getting a show together, knowing that you'll eventually have a finished, beautiful product—that's what makes it so worthwhile."

The excessive footage is necessary, says Soh, because an animal, especially an underwater animal, doesn't always do what's hoped for or expected. Producer-Writer Andy White agrees: "One of the reasons that you need so much film is that you never know what the sea is going to offer you." White added, "You just have to be very generous with the film; otherwise, you're not going to capture that once-in-a-lifetime shot."

It takes Soh and his assistant a minimum of ten weeks to prepare the final picture edit which is 1,750 feet, or 51 minutes of air time. The edit is subsequently approved by Flaum and White. Three black and white prints are then made; one is given to Flaum, the other two to the music and sound effects editors.

#### Script

According to television critic, Bob MacKenzie, "The Cousteau scripts rank with the finest writing in television. The language . . . is accurate but poetic, descriptive but imaginative, full of shades and moods." Producer-Writer Andy White has been responsible for the Cousteau scripts for the past several years. While Soh edits the film, White is busy researching, outlining and sketching ideas for the teleplay. As soon as he



Floating base for Cousteau's filming adventures is the converted former World War II American minesweeper, *Calypso*, which was purchased in 1950 and refitted as a revolutionary new type of oceanographic research vessel. The *Calypso* is 145 feet long and, weighing 400 tons, is complete with sophisticated underwater research equipment, electronic apparatus and other special features. It also serves as the "mother ship" for a fascinating variety of miniature undersea vehicles.

Capt. Cousteau steers inflatable boat, while cinematographer John Alonzo, ASC shoots Eclair camera. Arriflexes and Beaulieus are also used for topside filming. The purpose of the Cousteau series, the first regularly scheduled television program with a strong message concerning ecology, is to give viewers new insights into the ocean, its resources, the problems of conserving it and the marvelous wildlife found in it.



*(ABOUT THE AUTHOR: Jack G. Shaheen is an associate professor of Mass Communications at Southern Illinois University, Edwardsville. His writings have appeared in Journal of Broadcasting, Journal of Popular Film, The Quarterly Journal of Speech and The Journalism Educator. Dr. Shaheen also does arts criticism for a St. Louis television station. His book, Nuclear War Films, is scheduled to be released sometime early next year.)*



is given the general subject matter of a particular show, he immediately requests Metromedia's research department to gather appropriate texts and articles. White peruses volumes of material, searching for anything pertinent that might be used in the show, such as geographic materials and the most recent publications by noted authorities. Because there is a continuing concern over accuracy, experts on animal behavior are called on frequently to verify information. White only has about three weeks to write the script; he continually refers to the final picture edit, a rough outline and sundry research materials.

When asked to describe his role as producer-writer, White said: "First of all, as producer, it means working with film, a great volume of film. I try to read all of the source material and research material on a given subject before I look at the film. Then, I carefully mark the source material for later reference. Now, the writing. This depends on one's attitude toward life, I think. I enjoy writing, more than anything. Producing, at times, can come very close to drudgery. Looking at thousands of feet of film is very demanding, physically and timewise. To me, the writing is the fun of it, and as an individual I try to approach life, even serious subjects, with a certain spirit of fun."

When White finally completes his script, he, Flaum and Cousteau confer for two or three days to see if any significant phrases should be dropped or added. It usually takes White an additional week to complete the final rewrite.



Cousteau and two of his crew members watch attentively as the *Calypso* inches its way through a sea of arctic ice. The spunky vessel has racked up more than 300,000 miles of sea travel during the years the series has been in production. It is as much a "character" as any of the live personnel appearing in the films.

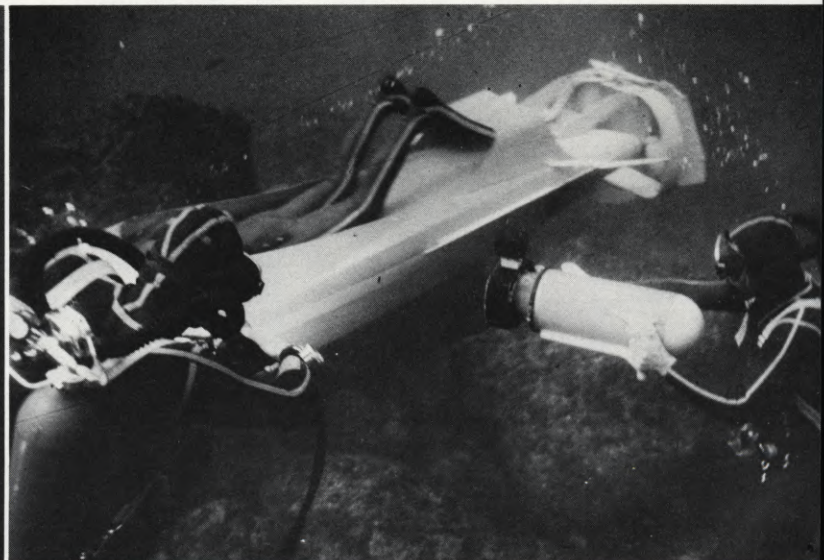
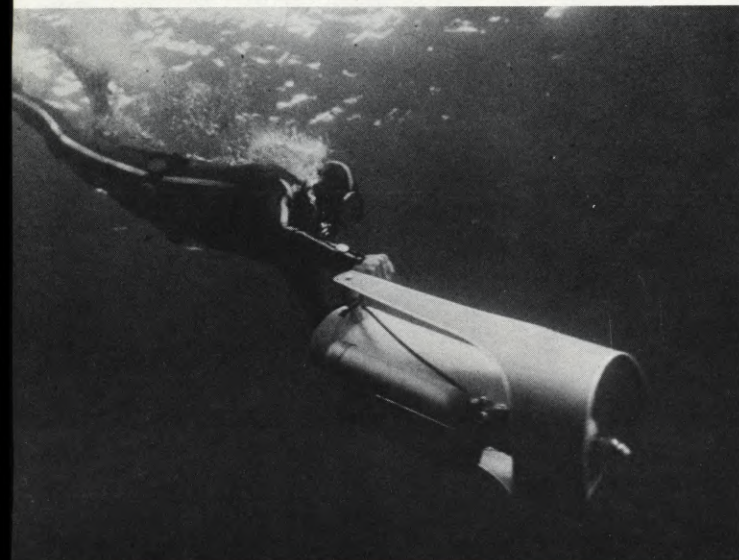
#### Narration

Rod Serling has been co-narrator of the Cousteau series for seven years. He's never quite understood why the producers wanted him because, he said, "I was the least trained of the narrators, especially several years ago, when I had not done a tremendous amount of narration." Initially, the producers had shown him one of the early programs.

According to Serling, "it was the most uniquely educative, regular scheduled television series that I'd seen. It was so carefully, painstakingly put together that I was delighted to lend my name and efforts to something that qualitative."

At Metromedia, Serling and Cousteau do not narrate to picture. To receive the best possible narration, they repeat each

(LEFT) A diver from the *Calypso* rides a "Scooter" underwater vehicle through the deep. (RIGHT) Cameraman and light-carrying assistant shoot scene of diver riding one-man "wet" submarine, so-called because the diver rides in the water, rather than inside a water-tight compartment. The *Calypso* also carries "Troikas", cine-sleds which film for 30 minutes at 15,000-foot depths. Towed by the ship, the Troikas are designed to run over very rough rocky landscapes without entanglement. They carry a 16mm underwater camera and electronic lights.





line several times. Rod Serling completes his narration in only four hours. Interestingly, prior to his arrival, he has neither seen the film nor read the script. Cousteau's narration differs. He constantly attempts to analyze the script while reading and, at times, brief script conferences occur and a sentence or two is altered.

Cousteau's narration is on the philosophical side; there's something quite unique when Cousteau speaks. Notes Serling, "His wealth of knowledge and expertise is enormous; I simply narrate most of the statistical material and describe the nature of islands and the characteristics of mammals we're studying."

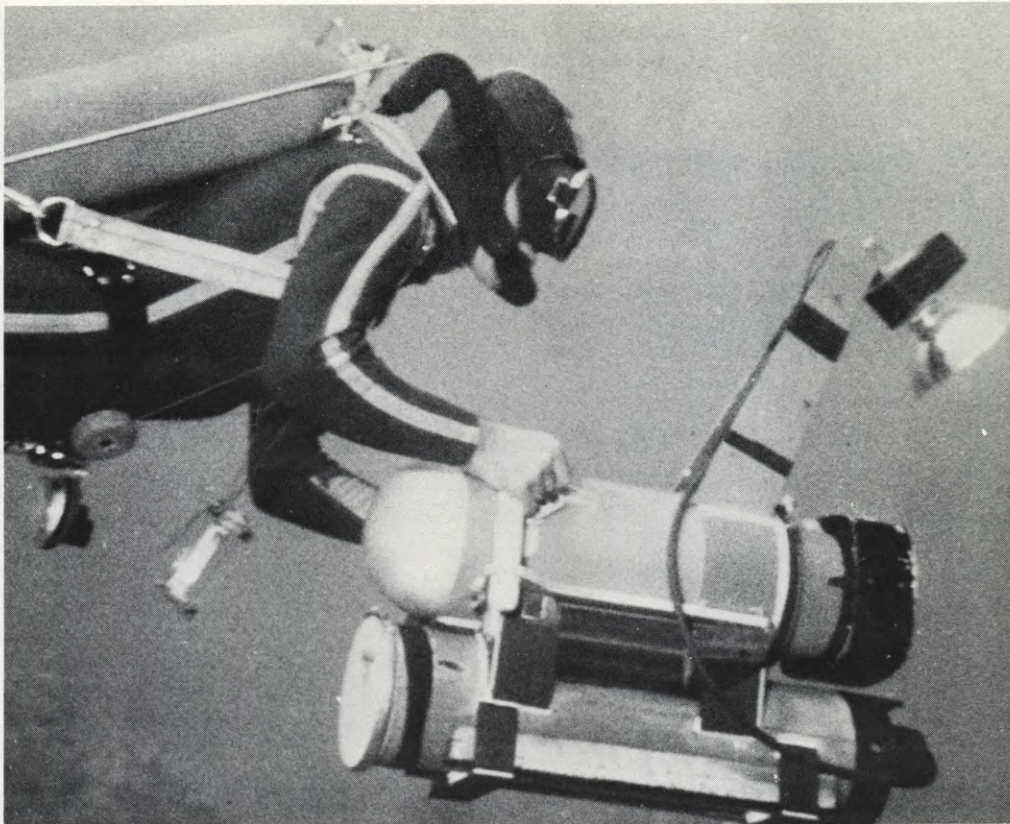
Both Cousteau and Serling enjoy sharing narration responsibilities. "Audiences can get bored with a single voice," said Serling, "regardless of whose voice it is."

Following the recording session, Flaum selects the best takes and proceeds to lay in the narration. It takes Flaum at least a week to complete the frame-by-frame, sentence-by-sentence "laying in" process to the work print. Normally, pauses are eliminated and/or added to the narration tracks so that the voice matches the picture in the best possible manner. It is a tiring process. In Cousteau's *THE FORGOTTEN MERMAIDS*, for example, Flaum spent nearly five hours to eliminate a single word from the narration. The *MERMAIDS* script referred to Florida's St. John's river as the *only* north-flowing river in the United States. Flaum discovered too late, that other rivers flow north.

### Music

Walter Scharf, the man who creates most of the music for the Cousteau specials, has composed, arranged and conducted for more television documentaries than any other musician. "I love composing music for the Cousteaus; they offer musicians opportunities to be creative," said Scharf.

Most TV anthology series feature music tracks prepared for six or seven episodes and the music is repeated with slight modifications, for the remaining programs. Scharf, however, provides the Cousteaus with an original score for each special. His major challenge is writing appropriate music for mammals. He's successful because, "I look at an animal as a human being because it knows what it's doing and has certain obstacles and feelings that are the same as ours." One of Scharf's favorite stories is how he went about creating music for a Cousteau special on sea elephants. "I simply had a sound track made of sea elephants barking," he said. From their



Cameraman swims with Cousteau underwater camera. Clamped on top of camera is a 150 watt quartz light, and beneath is a battery pack for powering the light. These cameras, which were designed by Cousteau's engineer in Monaco and made in his own workshops, utilize some basic Bell & Howell Filmo and Eyemo elements. Everything else, including motors and battery packs, is custom-built. The cameras, which are available in both 16mm and 35mm models, are, in themselves, watertight—rather than being "dry land" cameras enclosed in underwater housings.

sounds he discovered the proper tonality and created the music. Scharf smiled, "The music had a wonderful reedy quality; the same as the sea elephants, but with added feeling."

It takes the composer-arranger one day to record his music; approximately 30 musicians are employed during the recording sessions. They have worked with Scharf so often that they no longer chuckle when their conductor says: "We've got a baby octopus in trouble here; let's add some warmth to it."

### Sound Effects

While Scharf has been engaged with developing the musical score, Metro-media's sound crew has been active trying to select appropriate effects for the documentary. Because the winds, seas, extraneous background sounds and other elements make it difficult to record natural sound, little of the location sound is used. When working on *THE UNSINKABLE SEA OTTER*, for example, there were nearly eleven rolls of quarter-inch tape of recorded otter sounds that couldn't be used primarily because the surf sounds in the background were so loud. Thus, approximately ninety per cent of the sound effects in a Cousteau documentary

Continued on Page 1215

Cameraman films scene of the "Sea-flea" one-man submarine, while assistant holds cluster of two 750-watt lights, needed to record colors accurately at depths below 20 feet. There is an underwater observation port in the bow of the *Calypso* through which cameras can record marine life in action in the lower layers of the sea.





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Director — Wallace N. Southard  
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Bob Spurbarg, J. F. Schleich, W. P. Irving,  
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Cinematographer — William F. Beasley

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## "THE TAIWAN EXPERIENCE"

Continued from Page 1169

the show, lining up equipment, and setting the stage for a production that had to run smoothly in order to make the fair opening.

The format Electrovision has used in the past has been slides projected on a screen in an aspect ratio of 7:1. Kodak Carousel projectors are used, and the slides are in the 46mm Super-slide format (square). Previous Electrovision shows have used multiple interlocked 16mm projectors to put motion pictures into the center three screens. Numerous special effects projectors, strobes, lighting effects behind and in front of the screen, bubble machines, mirror balls, etc. fill out the Electrovision "Experience" format. Each member of the audience has a swivel chair to help in the viewing of the show.

One factor that places the Electrovision multi-media shows above others is that extreme attention is paid to the quality of images and sound. The still photographs were all shot using 2½ x 2½ or larger format cameras, including several panorama cameras. This meant that every slide in the show was reduced from the original, and the quality was thereby maintained.

In the pre-production planning, we found that we were not pleased with the quality available from three interlocked 16mm projectors. The registration differences in film grain, complexity, and the inability to form a true wide screen image turned us toward a larger format. We decided, after much deliberation, to shoot full aperture 35mm with normal

lenses and crop on projection to a 3:1 format. We chose unsqueezed instead of squeezed, 4-perf pulldown instead of Techniscope, and full width instead of the academy aperture. (Full-width aperture gave us 28% more picture area to project, and we needed every square millimeter we could get.) We used an Arri IIC with the ground glass marked for a 3:1 aspect ratio and standard lenses. For grab shots, and to provide pictures of a different format, we took two 16mm cameras; a Beaulieu R16es, and a Bolex Rex 4.

The script held to an important aspect of the Electrovision format—it was diverse and full of content. The many subjects covered in the script meant a tight shooting schedule for the 5-person location unit. Each day's work ranged from a minimum of two days on location to up to six different locations in some overtime days. We had one month to complete the bulk of the work. Unseasonal rain and almost constantly overcast skies meant pushing over half the still film one stop, which meant that a large portion of the photographs had to be taken from a tripod. To add to the usual headaches, a customs delay of three days kept us from discovering a jammed Arriflex until the day of an important shooting. Despite the difficulties, the crew responded well to the challenge. We returned with over 800 rolls of 120 still film, 10,000 feet of 5254 and 7252, and 15 hours of high-quality location sounds.

Test rolls were shot on each camera daily and processed locally to check for camera failures. Of the 6,000 or more still photographs taken, less than 1% were unusable because of technical

problems. The film was all processed under carefully controlled conditions at Media Generalists lab in San Francisco. Each roll was individually processed under constant chemistry scrutiny, and the quality of development was superb. The lab also took charge of the duplication of all the still images in the show, and the quality of the 46mm copies are excellent.

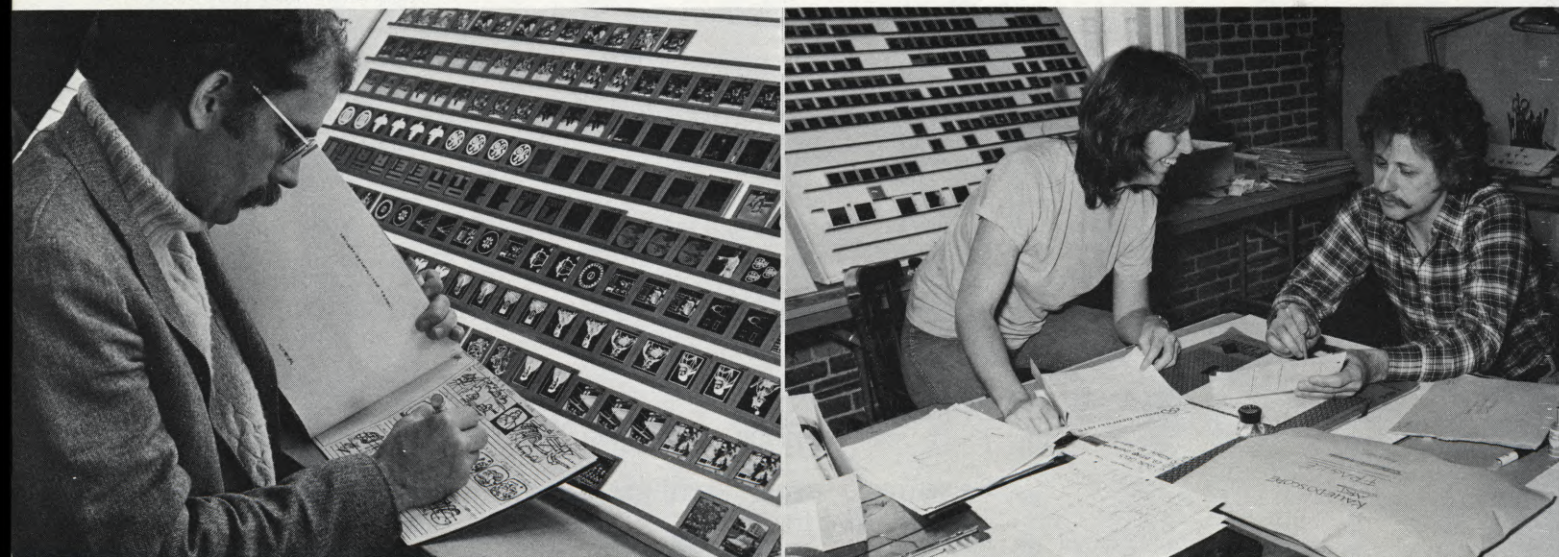
Editing began immediately upon the crew's return from Taiwan. The pictures were organized into various groupings and the motion picture footage was screened and culled. We spent some time listening to tapes and talking among the members of the creative team in order to take advantage of everyone's input.

At first, we were all getting a feel for the material we had to work with. We prepared a final script that was based on the materials we actually had. This allowed us to gloss over rough spots (a rough spot is that section of the script you have no pictures or sound for) and accent our strong points. Next, outlines were made that described the feel of each individual section. This gave us the freedom to approach a section in emotional terms rather than on a strictly direct basis.

Sometimes we were all amazed at how well things came together, especially since all the still photographs were unmounted, and, therefore, none could be projected until the duplicates were ready during the last week of production. Creative decisions during the bulk of the production were based on a sketched storyboard which was xeroxed and ended up being over 150 pages long.

The motion picture editing had to be

(LEFT) Designer Charles Frazier selects from racks of slides to make "storyboard" sketches. 800 rolls of 120 color film were shot with Hasselblad and panorama cameras to provide stills for the show. (RIGHT) Production assistant Kathy Greig seems unperturbed as she discusses the tight schedule with editor Roger Archey. Nine-month schedule from contract signing to delivery of finished product included theatre design and installation of complex equipment.



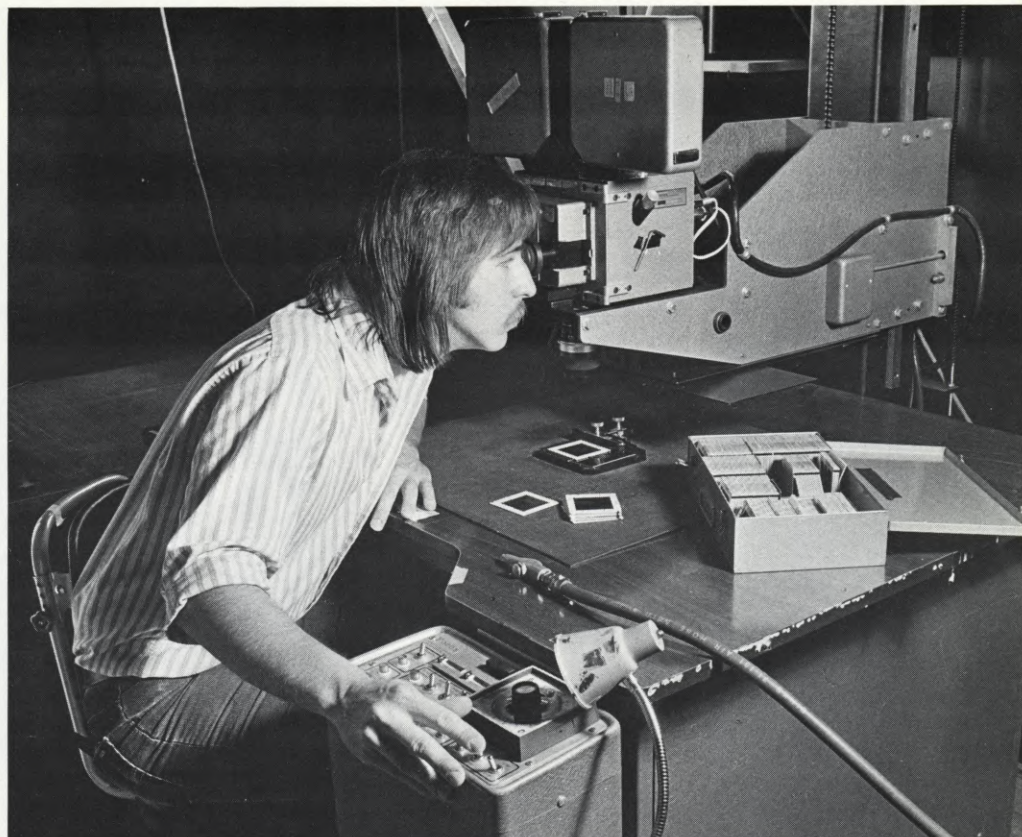


completed first. Lab time to produce mattes and optically print the 3-screen multi-panels was budgeted at three weeks, and we added a healthy contingency to that. This meant that the timing of the film sequences had to be decided well in advance of completing the rest of the show. Each decision to make a sequence a specific length was made almost totally in the dark. Fortunately, our experience and our educated guesses were on the lucky side, for the final result works quite well.

The storyboard was noted with regard to film sequences and timing, and from the completed storyboard, we produced the sound-track. A scratch track using the voices and a rough assembly of music was prepared early in the process, and was used as a reference for relating to either still editing or motion picture content.

With such a wide screen system (70 feet wide by 10 feet high), a minimum of 3-channel stereo was needed to give everyone in the audience a sense of full sound. Four-channel sound might have added to the track, but for the same of convenience, both for ourselves in production and for the Chinese who have to live with the system we designed for them, we went with a standard 1/2-inch tape deck with four playback channels. This gives us three audio tracks and one track for control pulses. Live music recorded for the soundtrack was mixed down to three channels. Monophonic sound effects that were recorded on Taiwan with a Nagra 4.2 and a Sennheiser 415 were later synthesized to 3-channel stereo using a Gotham digital delay system and other such devices. A special mixdown board had to be constructed to allow us to pan sound sources to one of three channels for movement of sounds across the screen or merely locating them along the screen's length. The entire track was recorded at -12 VU through a DBX system. The encoded master tape is then played back through a decoding DBX in the theater and gives a tremendous 100+ db dynamic range. This allows us to have quiet crickets chirping in the beginning of the show, without the slightest trace of tape hiss, and then crash through with a great fireworks display with almost frightening loudness. The theater is also equipped with an "envelopmental" surround system which consists of five channels of peripheral sound fed from a L/R mono mix and controlled by the show decoder.

Programming a multi-projector show is like a marathon jigsaw puzzle. We programmed the "TAIWAN EXPERIENCE" in a record five days. I'm sure it's a record, for I can't imagine any



Ted Iserman, lab manager/duplication cameraman, works with Forox camera utilized for making slide duplicates used in the show. To avoid picking up increased contrast in duplication of slides from originals, Iserman used a modified E4 process for developing the dupes. Precise attention was paid to color quality and matching in the duplication process.

group of people working harder, faster, or longer hours. Four of us spent three days working through the storyboard one move at a time. It was here that we assigned slides to particular trays, noted which projectors were to come up or down, and at what rate. It was at this time that the soundtrack was marked as to the precise location of the cues. Some sections came together quickly, others were frighteningly slow: the last running minute of the show took nearly eight hours to figure out. Two days and nights were spent pushing buttons on our Electrosonic, Ltd. multiplex encoder. We are the first to use this latest development by Electrosonics of England; an 88-function encoder/decoder system that used a digital method to determine fade rates which are fed from a single master clock, giving the smoothest dissolves of any system on the market. It was still on the drawing boards in England when we asked about using it for the show. They agreed, and on the date they promised it to us, it arrived set up and ready to operate. After 40 straight hours of button pushing and problem solving, we cleared over 5 minutes spare time before the first required showing of the finished product.

Continued on Page 1207

A view of the control room, showing some of the computer-automated equipment used in the show, including 28 Carousel slide projectors, and 3:1 35mm film projectors, rear-screen lighting effects and an "envelopmental" surround sound system—all controlled by a small digital computer system.







Inside the open exhibit area of the United States Pavilion at EXPO '74 a large pile of discarded hardware points up the idea of wanton waste and strongly suggests that many of the items thrown away in our disposable society can be recycled to be "re-useful", while helping to preserve the quality of the environment. The exhibits in this pavilion pull no punches while dramatically emphasizing what a huge drain man makes on irreplaceable natural resources.

Artist's rendering of the Washington State Pavilion, a sleek, ultra-modern structure in which the film "ABOUT TIME" is shown. Designed to include a large auditorium (suitable for opera, ballet and other ambitious productions), exhibition halls and a vast open patio, the building will remain after EXPO '74 to become a cultural and convention center. The lavishly landscaped fairgrounds, including islands in the Spokane River, will be transformed into a beautiful park.



## FILM AT EXPO '74

Continued from Page 1162

The next film is entitled "BIO-SPHERE AND MAN." It depicts the basic concept, current research and eventual plans to gain control of natural processes affected by man's activities—together with a study of the Russian approach to problems presented by the environmental impact of the technological revolution.

"MAN AND HIS ENVIRONMENT" is a film which outlines Soviet policy on air and water pollution control, techniques in limiting erosion and the newest waste-recycling technologies.

The railroads represented at EXPO 74 use audio-visual presentations to good advantage. Union Pacific employs a 360-degree slide show to depict the territory through which its trains travel and Burlington Northern puts its best foot forward with the award-winning documentary film, "PORTRAIT OF A RAILROAD" (see *American Cinematographer*, July 1974).

Scoring a repeat success, just as it did in Montreal and Osaka, is that product of Czech cinematic ingenuity known as "KinoAutomat", a kind of "decision" theatre in which the film stops at several intervals so that the audience can vote to decide plot twists to follow. At each plot climax two plot alternatives are offered. The audience votes by pressing one of two buttons installed at each seat, and the story line continues according to the majority vote. It takes 78 separate reels of film in the projection room to accommodate every possible combination of plot twists.

The Kodak Pavilion—actually a varicolored plastic hemisphere held erect by internal air pressure alone—houses an auditorium in which an eight-minute slide show of magnificent images is presented on a screen 12 feet high and 36 feet long. The audience views a multi-screen montage on the beauty of the United States—its mountains, plains, forests, rivers, seacoasts and highlights from the American experience in using the outdoors.

The British Columbia Pavilion utilizes visual images most imaginatively. Entering the pavilion you are presented first with a kaleidoscope view: a tunnel of mirrors which reflect images from various parts of the display.

Continuing, you pass through five separate viewing areas—combining double and single slide projection, real and mirrored views of the surrounding island, table-top and floor-level views from overhead film and slide projectors and, finally, a theatre with a seven-image screen.



In the Australian Pavilion, that nation's efforts toward environmental responsibility are graphically demonstrated in an unusual 24-screen audio-visual presentation viewed from a smoothly revolving platform.

The Iranian Pavilion presents a spectacular audio-visual program entitled "THE GREAT HARMONY", which shows Iran's contribution to civilization, the pageant of her ancient history, her philosophy, arts, personalities and lifestyles. A highlight of the program is a beautiful color film showing the coronation of Empress Farah Pahlavi.

Inside the Ford Motor Company Exhibit, an indoor-outdoor complex, there is a movie theatre, a rustic landscaped area (including a flowing stream and a waterfall), and the expansive exhibit area.

The overall display theme of the Ford Exhibit—"Sharing the Environment"—is expressed in a motion picture, an environmentally-oriented film which emphasizes sharing the environment intelligently. It depicts the happiness that can result from an honest appreciation of the natural beauty around us.

The Montana Pavilion represents contemporary adventure in terms of a lively three-screen audio-visual production that presents a panoramic sweep of scenic and recreational wonders. Glacier and Yellowstone National Parks, great mountain ranges, icy clear lakes and streams, and four-season sports in all of Montana's "five states within a state."

In terms of film, the Sermons From Science Pavilion is one of the most fascinating exhibits at EXPO 74. Presented inside its auditorium is a continuous program of a dozen fabulous films on the wonders of science, interspersed with live demonstrations of scientific phenomena. The live shows, staged with great showmanship and involving an amazing array of specialized laboratory equipment, demonstrate such phenomena as: the cry that can shatter glass, a frozen shadow, a flashlight that talks, the stammering machine, metal rings floating in air, how to obtain liquid light from cold chemicals, invisible energy that sets steel aflame, and electron magic with a ribbon of rust. Perhaps most astonishing of all is the stunt in which Dr. George Speake passes one million volts of electricity through his body—and lives!

But it is the films that are the real stars of the show in this pavilion. They are absolute spellbinders, produced by the Moody Institute of Science in West Los Angeles, an organization equipped by unique expertise and specialized techniques for all aspects of scientific cinematography. All stages of film pro-



Opening Day at the Fair was celebrated with ambitious programs and multi-colored balloons soaring into the air. EXPO '70, was conceived by Spokane in honor of her own 100th Birthday and the 200th Birthday of the United States. Pavilions at the Fair represent 11 nations, several American States and various commercial companies. Opening on May 1, EXPO will continue until November 3.

duction are done on the premises of the Institute, including the color processing and printing of about two million feet of motion picture release print each year. In order to produce the astonishing special effects, much of the ingenious and specialized photographic equipment has been designed and constructed

by Institute personnel.

Beginning with EXPO 67, film exploded on the scene as the foremost medium of communication, and that tradition has carried through in all of the great expositions that have followed. EXPO 74 is no exception. Film is the thing at Spokane's World's Fair. ■

A star shell bursts behind the United States Pavilion during a fireworks display at the EXPO '74 World's Fair. The pavilion, whose theme is "Man and Nature: One and Indivisible," prominently features the words of a Suquamish Indian chief who rebuked a delegation of white settlers who wanted to buy his land more than a century ago.





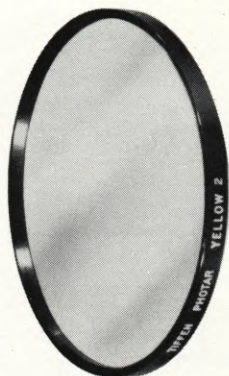
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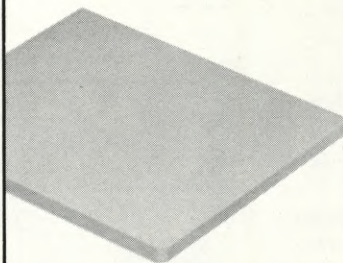
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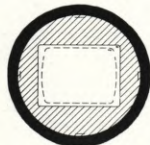
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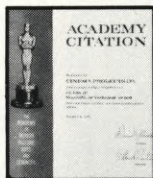
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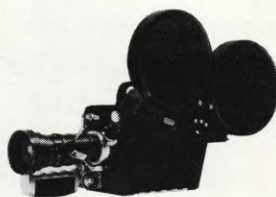
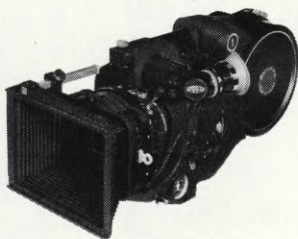
J-4 Zoom Control shown in use with XR35 Studio Camera, Canon K-35 Macrozoom 25-120mm Lens, and 150XR Fluid Head.

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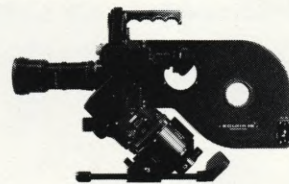


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## "MAN BELONGS TO THE EARTH"

Continued from Page 1166

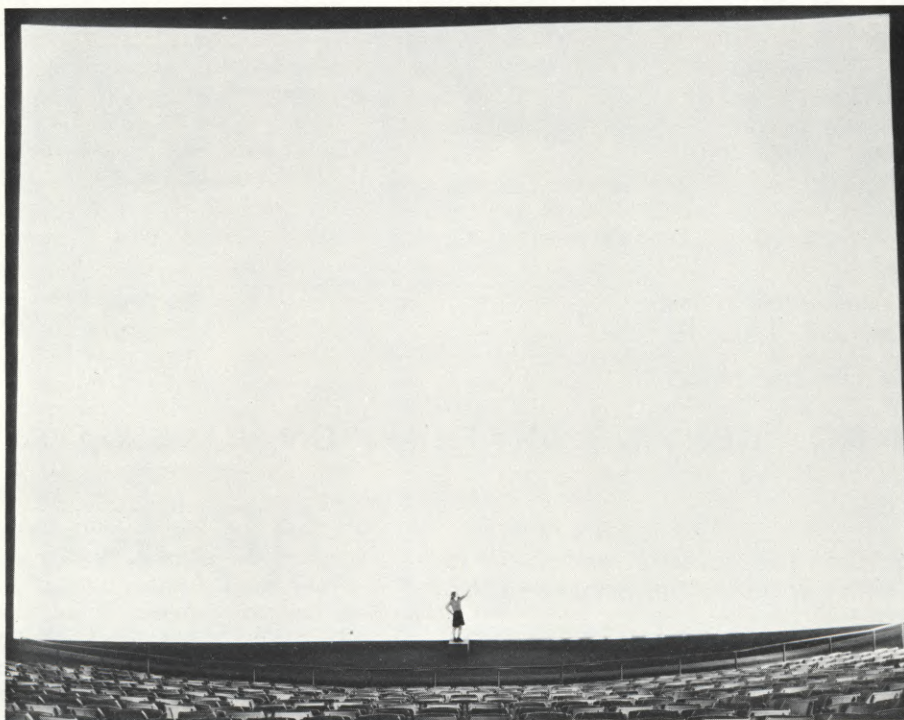
Chief Dan George, of "LITTLE BIG MAN" fame, provides further insight into his people's attitude toward nature during the course of this spectacular motion picture. "Everything that lives on Mother Earth is precious," he says. "The way Mother Earth was given to us, that's the way it should be."

The scope of environmental problems is powerfully conveyed on the enormous curved screen. Ninety feet wide by 65 feet high, or approximately the height of a 6-story building, it occupies most of the audience's field of view. The IMAX ultra-hi-fidelity picture is made possible through a new system using a large-format camera and projector.

IMAX, developed by the Multiscreen Corporation of Galt, Ontario, Canada, is the world's largest projection system. It is made possible by an Australian invention known as the Rolling Loop, which transports 70mm film in a horizontal configuration. The film moves in a series of waves so that each frame is laid against the lens individually, resulting in a steadier, sharper image than ever before experienced on an ultra-large screen.

The process is best described as a super-large, super-steady hi-fidelity motion picture system which fills most of the viewer's field of vision, while com-

The true immensity of the huge (90 x 65 feet) IMAX screen inside the United States Pavilion at EXPO '74 is made obvious in comparison to the relatively tiny figure of the person standing in front of it. Stimulating an incredible degree of audience involvement, IMAX, the world's largest projection system, was developed by the Multiscreen Corporation of Galt, Ontario, Canada.



pletely surrounding the audience with sound from a six-track stereophonic sound system.

In keeping with EXPO '74's environmental theme, "MAN BELONGS TO THE EARTH" deals with "our national environment today—in our cities, the desert, the ocean and the mountains," according to Robert C. Peters, its executive producer.

"It talks about the problems, and about some solutions," he adds.

For it, a Paramount film crew traveled throughout the United States, including Hawaii and Alaska. Scenes sometimes show the dread waste and destruction posing today's serious threat to the environment, other times reflect the natural wonders that cry out for continued preservation.

The film takes viewers on a wild raft ride down the rapids of the Colorado River, and puts them right next to a roaring inferno while men fight to extinguish an oil well fire in Caspar, Wyoming.

There's beauty, and there's also the devastation wrought by smog, by pollution and by man.

As James Whitmore narrates at one point, "We're the problem—but if we put our minds to it, we can be the solution. We've just got to decide the kind of world we really want."

"MAN BELONGS TO THE EARTH" was directed and photographed by Graeme Ferguson, produced by Roman Kroitor and Ferguson. ■

## THE IMAX FILMING OF "MAN BELONGS TO THE EARTH"

By GRAEME FERGUSON

Co-producer/Director

"MAN BELONGS TO THE EARTH" evolved out of a chain of events that began when the United States government people selected IMAX for their pavilion at Spokane because of the success that format had enjoyed at EXPO 70 in Osaka. The designer of the pavilion, Herb Rosenthal (who had also designed the IBM Pavilion at EXPO 70) had seen the IMAX presentation in Japan and wanted to have it in his pavilion at Spokane. The United States Department of Commerce people who were commissioning the building wanted Roman Kroitor and me to work on the film because of our previous experience in handling this large format. They chose Paramount Pictures as the producer of the project and asked that we be included to create the film.

As a result, we were asked to make a film in the IMAX format that would deal with problems of the environment. At the same time, it was required that the film be appealing to a very wide audience.

In researching the subject we found that there had been more than 1,000 films made on environmental topics. In fact, there was a catalogue of ecology films that had 1,200 titles in it. We screened the best of those—more than 100 different films—with the idea of finding out what had been done before, so that we wouldn't be making a film that looked like other environmental films.

In the course of viewing these films we noted that certain images appeared over and over and over again: the smokestacks, the polluted rivers, the dead fish, and so on. We knew that if we used those same images we would just be turning our audience off. Perhaps that was a negative approach, but it made it very clear in our minds as to what things we should *not* do.

I approach film-making as a combination writer, director and cameraman, so that from the beginning to the end of the film-making process I'm really combining all of these approaches: the writer's approach and the cameraman's approach, as well as the director's approach. For this reason, in the making of "MAN BELONGS TO THE EARTH", we never did write what one would call a final script. We had an outline with certain subjects indicated that we wanted to cover, but then we would keep our eyes open and keep readjusting and revising right up until



the very end, actually.

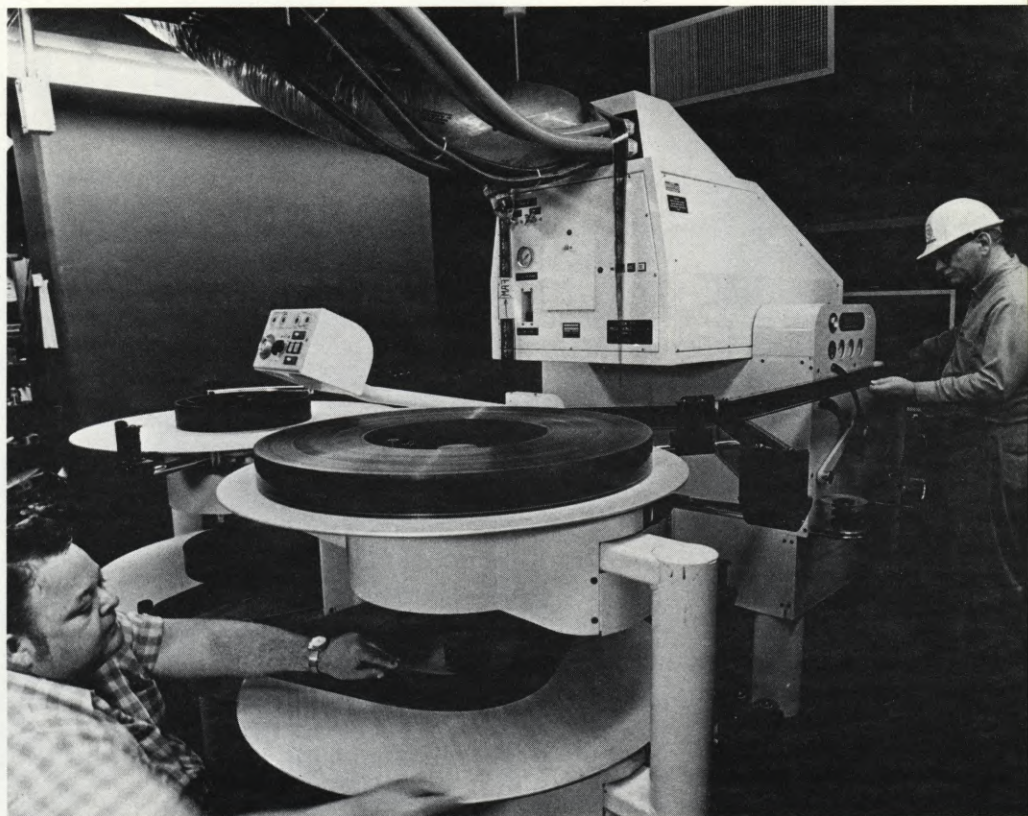
For example, we knew that at the close of the film we would need a dramatic sequence that would deal with an environmental crisis of some sort, but we didn't know what it would be. We waited for six months to see what would develop and we were getting somewhat discouraged at that point. Then, at the very last moment, what broke out was the largest oil well fire in the history of the United States. We went there and stood by and filmed the work of the Hellfighters as they put the fire out. They had a lot of trouble doing it and finally had to shoot off 500 lbs. of explosives, the biggest explosion they had ever set off.

We were able to do a sort of candid coverage of this event as it took place and we captured the suspense of the situation. For example, they fired off one charge and it appeared that the fire was out, but then it erupted again. We were able to use this failure in the final film to keep the audience involved.

I have a very strong feeling in structuring a documentary film that it must be structured as closely as possible to a fictional film. It must include the very elements that you put into a fictional film—suspense, drama, excitement. So, when we are making a film, I look for things like that, the same sort of things we would put into a fictional film, and try to incorporate them to give the film a dramatic structure of suspense.

Roman Kroitor and I work very closely together on our various projects and our working relationship is very flexible, so that the question of who does what varies from film to film. We were co-producers on the EXPO 74 film and, in this case, I was the director/cameraman. But in the case of the "CIRCUS" film that plays in Florida, Roman was the director, John Spotton was the cameraman and I was simply the second unit director/cameraman. On "MAN BELONGS TO THE EARTH", my work stopped dead the moment the shooting was finished, and Roman did all of the final work. He supervised the editing, the mix and everything else. I had nothing to do with those phases because I was, at that moment, producing and directing a new comedy for Ontario Place. So we are quite flexible. We fit into different roles, depending upon what the film requires.

Technically speaking, our approach to the EXPO 74 project was not particularly different from that which we've used on previous IMAX productions. The IMAX camera was the same one we used for EXPO 70 and the Ontario Place films, I regret to say. We had always hoped that we could proceed with the



The IMAX film, with each frame 15 perforations wide, is projected by means of a horizontal 70mm projector developed by Multiscreen. Film transport in this unique configuration is made possible by an Australian invention known as the "Rolling Loop", which moves the film in a series of smooth waves, as opposed to the relatively jerky action of an intermittent movement.

building of what we call our "Mark II" IMAX camera, a much more sophisticated camera with a more efficient blimp. However, we've never had the funds to build this Mark II camera, so we are still working with the same old camera.

The 30mm wide-angle lens is still our basic lens, because it gives the audience the closest thing to the correct perspective for the theatre, but we use other lenses also, up to and including the 600mm. On this picture we didn't use the blimp very much. We used it mainly for the sequences with Chief Dan George. On the other hand, the comedy we've done for Ontario Place is a fictional film with a script and actors. It's almost entirely sync sound, so we've used the blimp continually. It's not really a very good blimp, but we struggle by. The IMAX camera will take a 1,000-foot magazine, but we prefer to work with the 500-foot magazine, which makes the camera much more maneuverable.

The airplane used for the aerial shots in the film was a Piper Aztec, with the camera mounted in the nose of the luggage compartment. The nose cone is removed so that just the lens sticks through the front bulkhead. The nose cone can be screwed back on easily and we kept it in the plane so that we could fly long distances in a normal configura-

tion, land, take the nose cone off to make our shots, put the nose cone back on and fly to another location. We've chosen this aircraft because it's the most maneuverable twin-engine plane that we've been able to find. You can do things with that plane that you just can't match with any other camera plane around. We've used the same plane and pilot on five different IMAX films and we're very happy with the results.

We used this plane to shoot two sequences for the film. The first was the opening shot of the picture that runs for more than two minutes. It's a shot from the top of the Grand Canyon down to the Colorado River at the bottom. The second was a shot flying through the bottom of a strip mine. That's the kind of shot you really can do only with an Aztec.

There are also a few helicopter shots in the picture, most notably the shot of 1,500 motorcyclists taking off on a race across the desert near Barstow, California. We got the helicopter from Western Helicopters in the Los Angeles area and we used our own helicopter mount—the simplest helicopter mount in history. It's nothing but a rubber band (actually a length of surgical tubing) and we simply hang the IMAX camera from this

*Continued on Page 1219*



# ASC MOURNS WALTER STRENGE



On Labor Day, September 2, 1974, Walter Strenge, ASC passed away at his home in North Hollywood, California. Walter Strenge passed away in the only way he would have allowed, between segments of "MARCUS WELBY, MD", and taken by surprise.

At the age of 76, looking about 62, he was still very active as the regular Director of Photography on the "WELBY" show at Universal Studios. He had spent the week before scouting locations for upcoming segments of the program he had filmed from its inception.

At his Memorial service, held in his church in North Hollywood where he had been an active member for many years and greatly loved by his fellow parishioners, he was eulogized as "the only cameraman who could make me look so good" as quoted by his pastor from the statements of one of the many in the parade in front of his cameras.

Walter began his career in motion pictures as a newsreel cameraman and later went to work with the Famous Players—Lasky in New York. During the twenties and early thirties he had been very active in the affairs of his local union in New York.

In 1934 Strenge came to California

and immediately plunged into filming and ASC activities.

The ASC was one of Walter's abiding loves and, throughout the years, he was an integral part of the ASC. It was his habit to call the ASC office each day during lunch break at the studio to find out if there was anything happening that he should know.

Since 1934, Walter worked for every major studio in Hollywood and received a nomination for an Academy Award in 1958 for his work in the 20th Century-Fox, Cinemascope production "STAGE-COACH TO FURY".

In 1955 he received a nomination for an Emmy for "MY LITTLE MARGIE". He won an Emmy for "MARCUS WELBY, MD" in 1970 and this year received another nomination for "A MAN CALLED JOHN".

He was the co-editor, with Arthur Miller, ASC of the first and third editions of THE AMERICAN CINEMATOGRAPHER MANUAL and, with Charles G. Clarke, ASC of the fourth edition.

For several years, in the early 60's, he wrote a question and answer column in the PMI magazine and also in the AMERICAN CINEMATOGRAPHER and in recent years he has co-authored

the question and answer column with Charles G. Clarke, ASC in the AMERICAN CINEMATOGRAPHER.

Over the years, aspiring cinematographers found a willing ear and an unstinting urge to help them in Walter Strenge. He opened the doors of his home to many young men in the industry to discuss the various aspects of cinematography and to unburden themselves as they endeavored to break into the industry.

Strenge served as both President and Treasurer of the ASC and, for many years, on its Board of Directors.

As a cinematographer Walter Strenge was willing to take his valuable time and test new products, often "sticking out his neck" to use a product during a regular segment of the picture on which he was working. His interest in developing the technology of the industry was such that he would "at least try it once."

At one time Walter was offered two days' work with the apology that it wasn't more time. His reply was, "That's okay, all I want to do is work." And that was truly all he did want to do.

Lord, help us, there must be a camera in that great sound stage in the sky.



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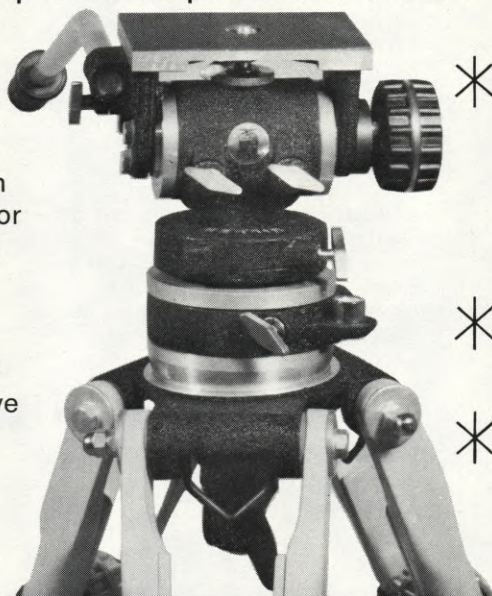
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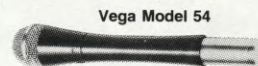
The Crystalink wireless receiver (Model CL-1) is mounted between the CP-16 camera body and the Crystasound amplifier, adding approximately 1" (25mm) to the width. The Crystalink wireless receiver is powered by the same NC-4 battery pack which powers the entire CP-16 camera system (including the Crystasound recording system).

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
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THE WASHINGTON STATE PAVILION

## FILMING "ABOUT TIME"

Continued from Page 1185

their own points of view and representing, in all likelihood, differing factions within the political sphere of the State, none with film experience or knowledge of the nomenclature of our business?"

We found a formula that is perhaps as close to ideal as is attainable. First, we built two scale models. One was a model of the pavilion interior, showing

in detail the exhibition, ramps and theater. We photographed the model with close-up lenses, and, utilizing a two-screen slide presentation, literally "walked" the Legislature through the pavilion. The second model we fabricated was a box 4x4x8-feet wide, with a rear projection screen and mylar mirrors at either end. We edited down some scenes from an earlier Washington State film, and rear-projected them onto the screen.

Our theater defied verbal description. (How do you explain the concept of a filmic image that expands infinitely . . . and *by using mirrors*?) And this, in fact, was what we proposed doing!

After an orientation as to the goals of EXPO '74—a "walk" through the exhibit via slides, and a description of the theater—we took a 15-minute break, and permitted all to view the scale model and peek into the mirrored box, to experience the "infinity image" effect.

The key element in the success of the presentation (one perhaps not new, but certainly one that more producers should find an invaluable selling tool) was the use of a magnetic tape recording

of the film concept. We produced a 25-minute tape, professionally narrated, complete with music and sound effects. At the proper time, the room was put into complete darkness, the audience was asked to close their eyes, sit back, conjure up their own visual images, and enjoy themselves. It really works! Short of the actual completed film, I have found no technique more effective in selling a film to a large group than letting them create visual images in their own minds. Who can argue with the personal interpretations that one creates for oneself?

The Film Treatment was approved, and we were on our way! (Two years later, when we premiered the film, one of the legislators came up to us at the pavilion to tell us how much he had enjoyed it, and left us with the comment, "It was great . . . but it was quite different from the film you *showed* us in your original presentation two years ago!" We had difficulty convincing him that the film he "saw" had only been in his mind. What better proof of the effectiveness of the taped presentation technique?)

Continued on Page 1230

(LEFT) The awesome 125-foot spread and 25-foot circumference of this Broad-Leaf Maple tree, discovered after a lengthy search, made it a perfect natural "character" for the film. (CENTER) Director of Photography Jack Priestley and Mo Brown check out Grip Marty Nallan's (green jacket) placement of the camera for a down shot from a branch of the tree. (RIGHT) Lacking a Chapman crane, the company pressed a "cherry-picker" into service for vertical panning shots of the tree. They would have preferred a helicopter, but limited space prohibited its use.



(LEFT) Second Unit Cinematographer Charles Groesbeek, positioned precariously in a doorless DC-3 to shoot some dramatic models of mountain peaks. Unpredictable air currents made for some harrowing experiences. (CENTER) Shooting from the chairlift at Mission Ridge, Washington, an establishing shot for the "thrill" rides that follow in the film. (RIGHT) Groesbeek hand-holding a 35mm Arriflex with heavy anamorphic lens to capture close-up footwork of skiers.







(TOP) Scene of the spectacular "Double 10" Celebration in Taipei, Taiwan, shot with the panorama camera for "THE TAIWAN EXPERIENCE". Cameraman Richard Lair, far right, with 35 mm Arri.

(CENTER) Beautiful masks and costumes used in the Chinese opera. "THE TAIWAN EXPERIENCE" includes most interesting glimpses into the artistic and cultural life of the Republic of China.

(BOTTOM LEFT) The complex computer console used to program the thousands of effects used in "THE TAIWAN EXPERIENCE". (RIGHT) View inside the control room, showing banks of Carousel and Pageant projectors.



## "THE TAIWAN EXPERIENCE"

Continued from Page 1195

The theater installation in Spokane was handled in close conjunction with the architects and contractor. All work was double checked to assure a minimum of final installation problems. Much of the equipment for the show was custom engineered in our San Francisco shop, tested and then shipped to Spokane. Including prewiring of the system, almost two months were required to complete the theater installation. When we previewed the show in late March, we were the first contractor

on the fair site to complete a pavilion.

David Sacks, executive producer and president of Electrovision Productions, Inc., likens the show to hundreds of thousands of parts of a 707 jetliner spread all over the ground; when they're properly assembled, it will take off and fly hundreds of people all over the world. Our show took off under its own power, and enraptured even those of us who had prayed weeks before to have the strength just to see the damn thing over with. With final timing of the motion picture, both in length and in color and density, equalizing the theater sound system, topping off the bubble

machines and other special effects, the show was ready to excite, intrigue, and entertain audiences from all over the country.

The Electrovision "EXPERIENCE" format offers audiences something other multi-media presentations cannot. Electrovision has tried ideas on the public for over five years now, and is evolving a new form of medium. Typically, multi-media shows never repeat a format; usually they are designed for one-time use. Electrovision has evolved one format to a very refined state, and it was exciting to be able to work with them to advance the medium even further. ■



# "OPERATION 5008S"

By GENE LESTER

*Gene Lester Productions, Hollywood*

Take a hardnosed guy who for thirty-five years has been filming on 16mm (with a few interludes of 35mm and 70mm thrown in) and hand him a Super-8 camera and I'll bet you ten to one he'll look it over, give it back and say, "Forget it!"

Sure, I know that Super-8 is now being ballyhooed to the skies for commercial and industrial and educational filming; so fine, I say, let it end there, in the offices and the schoolrooms or in those handy tote-projectors... and most of those films are reduced from 16mm and even 35mm.

But it was early in June when I happened to drop into the Hervic office on Ventura Blvd. in Sherman Oaks to see a friend (Walter Zadanoff, National Operations Manager) that I noticed a buzzing in the atmosphere and executives running into offices and locking doors. Either there was a deep dark secret being kept under wraps, or they were maybe running a porno flick. Knowing the respectability of the Hervic staff, it had to be the former, and sure enough, it was Walter himself who let

Veteran cameraman Gene Lester, looking a bit dubious, waits to shoot the Mickey Mouse parade at Disneyland with the new Beaulieu 5008S Super-8 sound camera. Never having shot Super-8 before, he gave the camera the "acid test" under a wide range of difficult conditions and found that it performed perfectly in every case.

the cat out of the bag. First he introduced me to Antoine Gallozzi, whose name may be Italian, but he has all the French charm of Louis Jourdan. Antoine (Tony) turned out to be the factory representative of Beaulieu of France, who was now making his headquarters here.

Cautiously, and with furtive glances at the doorway, Tony unwrapped a camera that looked like the Beaulieu 4008 zoom but maybe just a little tiny bit bigger. I took it from him with a "so what" attitude and started to study the instrument. The first thing that hit me was a little Din plug with the "mic. input" label. Then I saw a "sound level" button. And the next thing I said was, "Well, I'll be a sonofabitch," when the realization hit me that this gadget was a single-system sound camera. It was called the 5008S.

I had seen Kodak's Ektasound and was quite impressed with it for amateur use, but this instrument in my hand was a precision-made professional-type camera. It was then that I saw the lens and cracked up. In 16mm I was happy with

a 10-to-1 zoom ratio at F/2.2. Well, here was a 6-to-80mm Angenieux zoom (over 13-to-1) with an opening of F/1.2. How about that? On high speed film, it would shoot by candlelight.

Naturally, the first thing anyone asks about a new sound camera is, "How good is the sound?" They all shrugged. Because the camera had just that day arrived from France, no one had had a chance to try it, although the tests made in France had claimed a response of 50 to 12,500 cycles at 24fps. When Walter and Tony showed me the specs, still in French and not yet translated, I said, "This I gotta see!"

Walter came up with the bright idea. "Okay, Gene," he said, "How would you like to be the first one to make a movie with this camera?"

"Yeah, fine," I answered, "What do you want shot?"

"We'll leave that entirely up to you," was the reply.

Hmmmm! Here was a camera that had never been used for making a film, and I was supposed to give it the baptism of fire. What if I goofed? What if the camera goofed? Well, it wasn't exactly like being the first man on the moon, or the first guy to discover sex, but for an old creep like me being the first to try a new mini-sound camera... well, why the hell shouldn't I feel good?

By now I found that the Hervic Corp. had received five cameras, all prototypes, and hadn't even shown them to the employees. Two days later, they would unwrap them for the staff, pour a few magnums of French champagne, and celebrate the unveiling to all the employees who had been sworn to secrecy under penalty of death, starvation or imprisonment on Devil's Island.

That was the day I grabbed the camera, inserted a sound film cartridge, set the voice level on automatic, the ASA on 40 (indoor Kodachrome), flooded the room with a quartz light, plopped an Electro-Voice 635A mike on a nearby desk, left the exposure on automatic and just pressed the button and let the film roll. There was a mixture of daylight from the big picture windows, fluorescent light from the overheads, and the 3200° Kelvin light from the quartz light. Late that day, we rushed the cartridge down to Eastman





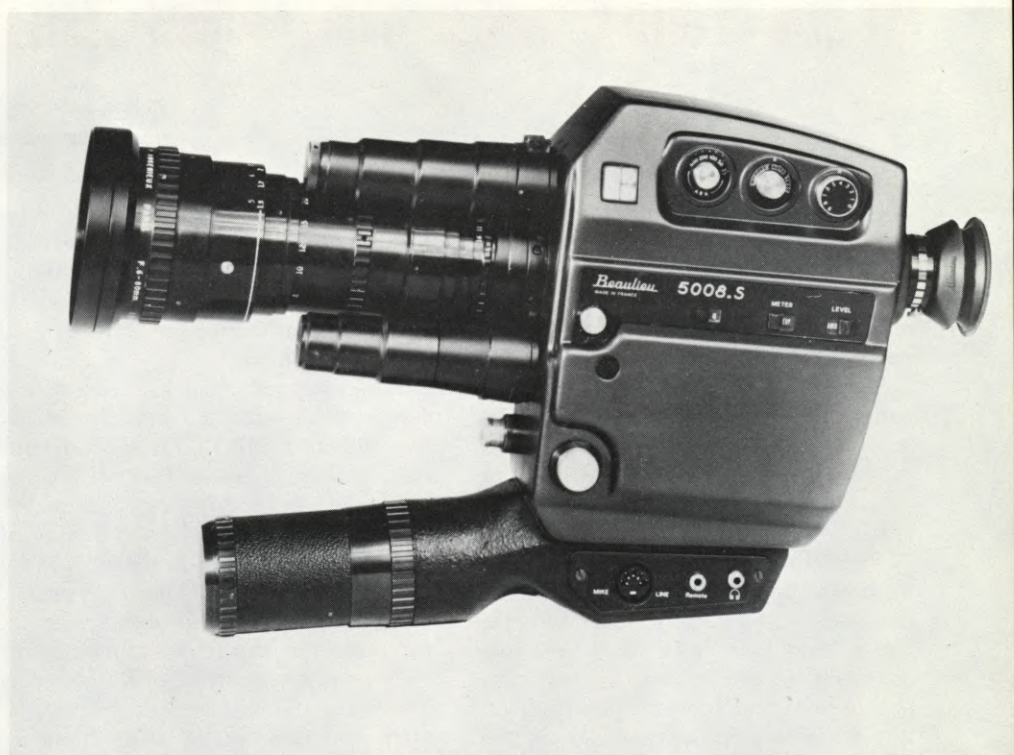
lab and asked for a RUSH for the next morning. Then we all held our breaths for 16 hours. What would our baby be, a hit or a zonk?

Thanks to Bill Peterson at Kodak Lab, we got our film as promised, threaded it into a Heurtier Super-8 sound projector and all signals were GO. Everybody wanted to see. The executive staff had taken their places and the secretaries and service staff were poking their noses around corners. With the opening scene everyone gasped and let out a "Wow!" in unison like the Johnny Mann singers doing a Chevy commercial. I merely gulped. Here was a film that was fully as good as anything I had ever done in 16mm single-system sound on an Auricon or CP-16. Sharp as hell, and the sound just as good as any of the best of the high-priced portable cassette recorders.

So now to really give it a rough go. I would use the camera under all types of conditions as a professional would. I wanted to hear what music would be like... not re-recorded music, but LIVE music. So I hied myself off to Disneyland and filmed the All American college band, the Mickey Mouse parade, and at night even the electric parade. The recording was fantastic. No wows and if there was any flutter, it was undetectable.

Next, I dropped in at UCLA where my daughter and her partner were to perform an Hungarian dance. This gave me the opportunity to try re-recorded music. Same result.

Okay, now let's hear people talking, not on sound stages, but around swimming pools, in traffic, at a graduation. Here is where we ran into the same conditions that the 16mm guys run into. Unless you get the mike close enough, you pick up all the surrounding noise. BUT, the speaker's voice came through loud and clear over this surrounding noise. By leaving the sound



The handsome new Beaulieu 5008S single/double system Super-8 sound camera, far from being a sleek toy for the amateur who has everything, is actually a highly sophisticated, but easy to operate, professional instrument. The sharp picture and incredibly fine sound it records make it a valuable new light-weight tool for newsreel, industrial and educational filming.

monitor on automatic, I found that as the camera starts, the automatic level control searches for sound and it comes up with a high level of extraneous noise until the talking starts. BUT, by switching off the automatic and using the volume control and taking a level of the speaker's voice, you can eliminate that background noise considerably and the quality of sound is much better.

The real test came when I called my friend John McIlhenny of KMPC's Airwatch helicopter and asked him if I could shoot sound movies of him while he was on the freeway patrol. John was delighted with the idea and invited me along on his early evening ride. Since it was a Bell glass bubble-type helicopter

and the passenger sits alongside the pilot, I needed the widest angle lens just to get a full-face closeup of John. We were less than three feet apart. Focusing on John and zooming back to the 6mm position, I was able to get John from the shoulders to the top of his head, and would you believe that at a focus of less than three feet, the freeways and the mountains were in perfect focus?

The noise of the chopper blades was so loud that I thought I would never get clear sound. In fact, when listening on the earphone supplied with the Beaulieu 5008S, I could not hear what John was saying even though he held the Electro-Voice mike about two inches from his

Continued on Page 1221

(LEFT) Walter Zadanoff, National Operations Manager for the Hervic Corporation (exclusive American distributor of Beaulieu cameras), is filmed holding the new 5008S in his office. (RIGHT) Disneyland cameraman, with his Beaulieu NEWS-16 camera, tries his voice on the 5008S, as Gene Lester listens on the earphone. Both cameramen were waiting for the start of the Mickey Mouse parade.





# THE NEW BEAULIEU "5008S" SINGLE/DOUBLE-SYSTEM SUPER-8 SOUND CAMERA

At last, a thoroughly professional single/double-system Super-8 sound camera that may well revolutionize newsreel and educational filming

At a recent "pre-Photokina" press preview in Hollywood more than 70 representatives of general and trade publications gathered to experience a famous "first." It was on that occasion that the Hervic Corporation (exclusive U.S. distributor of Beaulieu motion picture cameras for more than a decade) proudly announced the availability of the new Beaulieu "5008S" single-system and double-system sound Super-8 camera.

Press representatives crowded around to handle the three specimens of the handsome new camera that were on display and there was much favorable comment on the camera's small size, light weight and sophisticated features. But the real surprise came during the projection of 20 minutes of film shot with the Beaulieu "5008S" camera by

professional film-maker Gene Lester (who had never handled a Super-8 camera before). This footage represented a true "acid test", since Lester had shot it under a wide range of exterior and interior conditions.

Projected on a four-foot screen, the images (shot with the new Angenieux 6mm-80mm F/1.2 13.3-to-1 zoom lens) were amazingly sharp. But what really impressed the highly critical audience was the extraordinarily good quality of the sound. Even though reproduced by means of the somewhat less-than-professional amplifier and speaker system of the projector, the sound coming off of the tiny magnetic stripe of Kodak's new Ektasound Super-8 cartridges was so sharp and clear as to be of "theater" quality—far better, in fact, than most 16mm optical sound.

It was after this demonstration that it became quite obvious that the new Beaulieu "5008S" camera is not a mere toy for the well-heeled amateur who must have the latest and best of everything. It is, in every respect, a truly professional Super-8 sound camera. As such, it offers some interesting new possibilities. For example, some local television stations may decide that a newsreel cameraman equipped with a "low-profile" 5-pound camera package (that shoots inexpensive Super-8 film) is more functional than a cameraman lugging a 25-pound camera package. Teachers making their own limited use films for educational purposes should find this camera very handy indeed, as will many professionals working on scientific and experimental projects.



Two views of the new Beaulieu "5008S" single/double-system Super-8 sound camera, a thoroughly professional instrument that produces sharp pictures with incredible sound quality. Compact in silhouette and weighing only 5 lbs., 10 oz. (with Angenieux 6mm-80mm zoom lens mounted), it is easily hand-held and presents the "low profile" that can be an important plus in newsreel filming.

(LEFT) The new Angenieux 6mm-80mm, F/1.2 zoom lens (with the amazing zoom ratio of 13.3-to-1) has a special looking device that can limit zooming from 6mm to 40mm for steady hand-holding. (RIGHT) Despite its extremely sophisticated electronic capabilities, the "5008S" is as easy to operate as an amateur camera. Only a few controls (all located on the left side of the camera) are needed to insure perfect picture and sound quality.





The new professionally designed "5008S" camera provides both *SINGLE* and *DOUBLE* system sound capabilities, as well as "silent" mode of operation.

The "5008S" is equipped with a totally new Angenieux 6-80mm zoom lens, F/1.2 (13.3 to 1 ratio). An important feature of the Angenieux 6-80mm zoom lens is its "Special Locking Device" which limits zooming from 6 to 40mm (for steady hand-held filming), if so desired.

Beaulieu's "5008S" features "XL" (Existing Light) filming capability... no need for movie lights in order to capture on film a special sequence or event. Exciting NEW Features of the Beaulieu "5008S" include:

- ★ *BUILT-IN SOUND AMPLIFIER*
- ★ *UNLIMITED LENS INTERCHANGEABILITY*
- ★ *AUTOMATIC EXPOSURE CONTROL* (with Manual Override)
- ★ *NEW BEAULIEU REFLEXMATIC MOTOR* (Governs Exposure Accuracy)
- ★ *ASA-25 to 400*
- ★ *VARIABLE SPEED CONTROL ON POWER ZOOM*
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- ★ *MIRRORED SHUTTER SYSTEM* (No Prism Between Lens & Film)
- ★ *LARGEST REFLEX VIEWING SCREEN*
- ★ *SYNC SPEEDS: 18 f.p.s. or 24 f.p.s.*
- ★ *NEW "Creative Filming" BEAULIEU "5008S" ACCESSORIES*

#### CAMERA SPECIFICATIONS

##### Sound:

SINGLE or DOUBLE system sound modes. Sound-to-picture stagger is a standard 18 frames. A Light Emitting Diode, at the top of the viewfinder, pulsates when sound is being recorded in the single system mode. The Exposure Needle, when filming in the Manual single system sound mode, serves a "dual" function for Sound Modulation.

##### Lens:

New Angenieux 6-80mm (13.3 to 1 ratio) F/1.2 Zoom Lens. The lens is equipped with a "Special Locking Device" which will limit zooming from 6 to 40mm.

"C" Mount LENS INTERCHANGEABILITY. (Unlimited "interchanging" of 16mm cine lenses and 35mm lenses).

"Macrocinematography" Capability. One-hand operation provides macro focusing from 2.8 feet (1½" field of view) continuous to infinity.

##### Diaphragm:

Fully Automatic Settings provided by the NEW Beaulieu-patent REFLEXMATIC motor (which governs exposure



MARCEL BEAULIEU (designer and manufacturer of Beaulieu motion picture cameras) is shown holding his newest creation: the Beaulieu "5008S" single/double-system sound Super-8 camera. On the table top is a display of Beaulieu cameras designed within the last 20 years. They have always been noted for their high degree of sophistication, coupled with ease of operation.

accuracy). Capability of Manual Override.

Correct Exposure "check" provided by needle indicator in the viewfinder.

##### Zooming:

Electric Power Zoom, with Variable Zoom Range from 4 to 18 (maximum) seconds.

Instant Start/Stop.

##### "Pre-Focus" Control:

Fingertip pressure on the Pre-Focus Control button instantly and automatically zooms the lens to its maximum telephoto position; and, at the same time, automatically opens the diaphragm to its maximum aperture. The

camera operator is instantly provided with the shallowest possible depth-of-field required for critical focusing.

##### Exposure Meter:

Behind-the-Lens CdS Photo Cell.

##### Reflex Viewfinder System:

100% of the available light reaches the film.

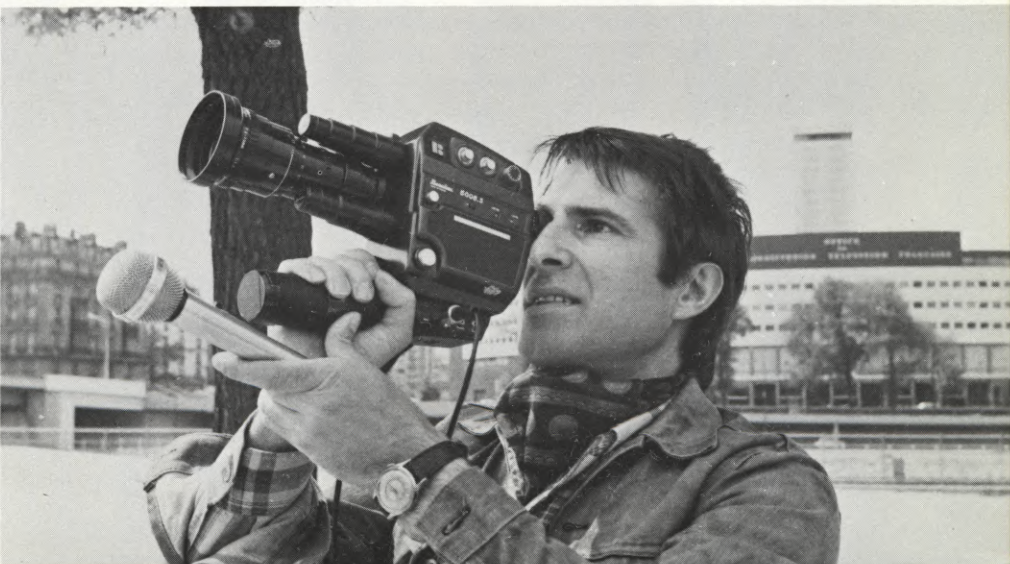
LARGEST and BRIGHTEST image on the viewfinder screen.

"Divided Grain" Focusing Screen for more accurate focusing (which is "retractable" for a brighter image).

An indicator at the bottom of the viewfinder shows that the film is advancing.

Continued on Page 1213

French cinematographer Michel Karlof is shown working with the new Beaulieu "5008S" camera. The camera accommodates the standard Kodak Ektasound cartridges and may be used with a variety of microphones. Now immediately available, the "5008S" is exclusively distributed in the United States by the Hervic Corporation.







# think about it...

When you shoot a film, what else could you be making at the same time?

When you organize a storyboard, what additional use does it have?

When your client has more than one communication requirement for the same subject, what else can you recommend?

A filmstrip, of course.

All you have to do is select appropriate frames from the storyboard, convert dialog into commentary, and include a still camera with your equipment.

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## CINEMA WORKSHOP

Continued from Page 1140

can be used to record voice cues or other pertinent information in addition to the pilot signal. This could come in handy for inaudible start-stop cues when using multiple cameras with radio slating. Because of this difference in pilot recording, a tape recorded on a two-track machine must be resolved on a two-track machine.

Another specific feature of the Nagra two-track is the inclusion of universal pre-amplifiers. In the conventional units, plug-in pre-amps had to be interchanged to match the type and impedance of each microphone. The universal pre-amps in the two-track model can accommodate almost any microphone on the market. It can even power the Sennheiser condenser microphones (815, 415, etc.) directly, without the necessity of a battery power supply (MZA-6/2, AKB-11, etc.). This is another headache the soundman can forget.

Like any piece of new equipment, the two-track recorder not only solves a lot of old problems, that encourages the creative soundman to explore new techniques. On documentary productions two wireless mikes can be used, one on each of two subjects. The two receivers can fit right into the pocket on the Nagra case, each plugged into its separate track. When covering a live event, one track can be used for the dialogue while the second track is used for ambience. For example, at a recent political event I used a two-track Nagra. The recorder and soundman were stationed by the podium with one mike on the speakers platform picking up clean and pure voice track of the speaker. The second input (and track) was connected to a wireless mike receiver. The wireless mike was on me, the cameraman. As I moved through the crowd, my mike picked up the ambient sounds of the crowd in the vicinity of the camera.

Back at the studio the mixer used mostly the speaker's track. However, when the camera went wide to pick up crowd reaction (applause or jeers as the case may be), the mixer would bring up the ambience track which gave the audience a great feeling of presence that would have been lost if just the single speaker's track were employed throughout.

The two-track recorder makes the soundman's job easier, enables the sound lab to do an infinitely better mixing job and encourages new and more effective techniques. Two tracks are better than one. ■



## BEAULIEU "5008S" CAMERA

Continued from Page 1211

### Shutter:

Guillotine type. Frame Exposure Time at 18 f.p.s. is 1/40th second, and at 24 f.p.s. is 1/60th second.

### Trigger Release:

Self-locking release button. Capability of Cable Release mode of camera operation.

### Power Supply:

NiCad Rechargeable Battery—500mA, 7.2 Volt. Three-position power switch.

### Filter:

Built-in Wratten 85 filter. Selector switch on camera for "indoor" filming situations, and "outdoor" filming situations.

### Filming Speeds:

18 f.p.s. and 24 f.p.s. (standard speeds for sound filming).

### ASA Speeds:

25 to 400.

### Footage Counter:

Graduated in both feet and meters. Indicates amount of film remaining in cartridge, and automatically resets when loading the camera.

### Eye-piece:

Eyesight correction is  $\pm 2$  diopters.

### Format:

Super-8 (standard 50' sound or silent Kodak cartridges).

### Dimensions:

13½" (overall length); 4" (overall width) and 8½" (overall height).

### Weight:

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## WHAT'S NEW

Continued from Page 1132

in the viewfinder shows that the sound is at the proper recording level, and an earphone plugged into the camera lets the operator hear the sound before filming begins.

When the camera is running, both the indicator light and earphone function automatically as sound is being recorded. A Hi-Lo audio gain switch permits adjustment for ambient noise suppression.

Each of the cameras may be operated remotely with the microphone switch, when the camera is set in the run-lock

mode. This exclusive feature allows the operator to appear in the film without an assistant to run the camera.

Additional features found on the new GAF cameras include: a backlight button that provides one f/stop additional exposure for backlit subjects, separate buttons for checking the motor and electric eye batteries, under- and overexposure warning lights, a film movement and film end indicator visible in the adjustable through-the-lens viewfinder, a remote control cord outlet, an outlet for recharging batteries or plugging in a battery booster pack, and a filter button and movie light plug for retracting the daylight filter when film-

ing in artificial light. The cameras accept sound and silent type Super 8 film cartridges, 50 ft., ASA 25-160.

The GAF SS 250 XL is equipped with an extremely fast f/1.1 power zoom (2.5 to 1) lens suitable for filming under low levels of illumination without supplementary lighting. The CdS electric eye is located close to the lens. The zoom lens may be operated manually if desired.

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The GAF SS 805 camera has all of the above plus an f/1.7 power zoom (8 to 1) lens with variable zooming speed, fade-in/fade-out control, a .6 neutral density filter for extremely bright light situations, and an adjustment that permits "customizing" the automatic exposure level.

The GAF SS 250 XL is supplied with microphone (earphone optional) and needs no lens shade. The GAF SS 605 and GAF SS 805 are supplied with microphone, earphone, and lens shade.

Suggested list prices are: GAF SS 250 XL, \$299.50; GAF SS 605, \$359.50; and GAF SS 805, \$399.50.

For additional information, write Consumer Photo Products, GAF Corporation, 140 West 51 Street, New York, N.Y. 10020.

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For more information write to Berkey Colortran, Inc., 1015 Chestnut Street, Burbank, Calif. 91502. Telephone (213) 843-1200. Telex 67-7252.



## DOCUMENTARY AS ART

Continued from Page 1191

emanate from Metromedia's extensive sound effects library.

Supervisor and sound editor for the Cousteaus is Charles Campbell. Under his experienced direction, the documentaries have won three motion picture sound editor's awards, commonly referred to as the "Golden Reels".

Campbell believes that, "when our work is done as well as it can be done, audiences shouldn't be aware that we've really done anything. There are showcase sequences," he adds, "big thunderstorms and other exciting scenes, but primarily we just duplicate, as best we can, the sounds of life."

Metromedia's sound effects library is indeed impressive, containing most sounds which relate to documentaries. But, according to Campbell, in *THE TRAGEDY OF THE RED SALMON*, "all the salmon splashes in the river and the salmon fighting their way upstream were created by simply placing a hand in some water and pretending that the hand was a salmon. When we came to the waterfall scenes though," he noted, "we searched the library until we found an effect that sounded like an appropriate waterfall."

One of Campbell's associates, Colin Mouat, told me: "When I do my job well, people say to me: 'What did you do in the film?' But if you're the music editor, they say the music was great, beautiful and brilliant." When asked to explain sound effects in a simple, concise manner, he visualized this scene—A busy street in a major city, peak-noon-hour traffic:

*Track number one would carry an overall background track like a traffic flow. Track two, we might even put in the town hall clock striking twelve. If there were people walking close by the camera, we would carry footsteps on cement which would be a combination of a couple of tracks. If there's a policeman on the corner directing traffic, we would have to add police whistles for stop-and-go traffic. To add to the noon-time rush, an ambulance could be passing through a block away. Up to now, we have seven different sounds that would be running continuously, and maybe the scene would last fifteen seconds. Maybe it would be a dissolve-in and a dissolve-out. Just a simple scene can have a lot of things happening.*

"There's no glamour here," concluded Mouat. "The only satisfaction is seeing the finished product . . . and say-

ing there's another Cousteau special I didn't think I could get through. But I did. And it's good."

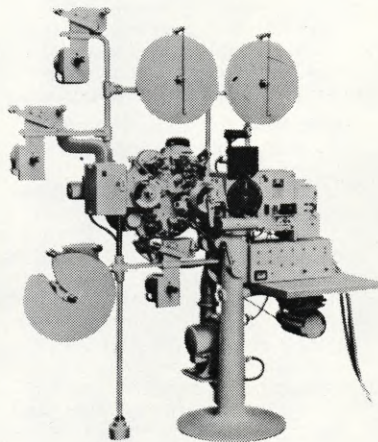
### Interlock

The interlock is the first time Flaum and his staff are able to witness the music, sound effects and narration all together. They're able to see if they've produced a jumbled mess or a beautifully composed special. The interlock is usually held at Ryder Sound Studios in Hollywood and takes about twelve hours to complete. With a Jacques Cousteau special, there are usually a vast amount of tracks running simultaneous-

ly, including Charles Campbell's 8 to 11 sound effects units, the Cousteau/Serling narration tracks and Walter Scharf's 2 to 4 music sections. The tracks must be properly assembled and synchronized with the picture. Several Ryder staff members concentrate on creating the proper balance of sound, narration and music. Flaum is intense because following the interlock, he only has a few days to make changes before the final mix.

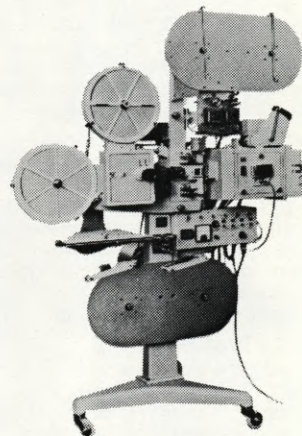
I asked Flaum if he considers the Cousteau documentaries good examples of art film. "In many respects, the Cousteau films are art films," he said, "but they are art films that take cogni-

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zance of the audience for whom they are made. I think the Cousteau shows are quite unlike anything on television. They represent film-making in every sense of the word. They are not documentary reports. They are not informational films about ecology or educational films about animals. They deal with ecological subjects, and they do provide information that may not be found elsewhere. Yet, first and foremost, they are conceived as films."

When asked about production quality, Flaum noted that the Cousteau films are handcrafted: "They are made with love. The editing is as good as you could

find anywhere. The use of narration, music and effects—the care going into all these departments—helps to make them of artistic quality. Hopefully, they are entertaining as well as informative. We want to give our viewers new understanding and inculcate the necessity for protecting our oceans and all the life in it."

#### The Mix

The mix affords Flaum and his associates the opportunity to correct the major mistakes observed from the interlock. The mix procedure is similar to the interlock, but once a mix is com-

plete, it's complete; there's no going back for another try. Due to cost, a Cousteau special must be mixed in a single day; fifteen to twenty days are usually allotted to mix a feature film. Flaum told me he'd be content with two or three days for a Cousteau.

At the mix, Flaum's major problem is maintaining concentration and enthusiasm. Observing the same film, reel after reel, saps your energy. After ten to twelve hours of continuous viewing, you become tired, and it's highly feasible to lose sight of what you're doing. Editor John Soh and Producer Andy White, however, are also in attendance, and their presence helps Flaum to maximize his efforts in creating the necessary changes.

Delays because of music and narration not properly meshing, sound effects clashing with music, and other unforeseen situations, are just another inevitable part of the grueling routine. The sounds of the manatees in *THE FORGOTTEN MERMAIDS* were too abrasive, so the music editor rearranged several notes to help soften the manatee munches. At one point in the mix, picture and sound effects editors Soh and Campbell had to take several reels of film into an adjacent room and re-edit. The editing process at Ryder is expensive. If re-editing is necessary for too many scenes, a second day at Ryder must be scheduled, at a cost of \$2,500. Finally, by late evening, the mix is complete. Now the lab print must be checked and additional color corrections made.

While noting that there are several areas where too many blues and greens exist, John Soh noticed that two men in a fishing boat weren't Cousteau divers, but two fishermen. Thus, Flaum requested that the lab supervisor darken the scene—a mood would be added, and hopefully audiences wouldn't notice the mistake. Campbell thought that fifty percent of the sound was "too soft" so Flaum rushed from the lab, took the film to Metromedia's screening room where he and his associates eventually discovered and solved the problem. The Cousteau special is eventually dubbed onto video tape to get the best possible color quality.

#### Impression

If ever evidence were needed to substantiate the theory that film is a collaborative medium, the facts are readily available at Metromedia Producers Corporation. What impressed me most was the dedication and expertise of Flaum and his associates. Andy White, for example, contends that no series has been more rewarding to him

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than THE UNDERSEA WORLD OF JACQUES COUSTEAU. White believes the Cousteau specials differ from similar television fare because: "We have a central figure in the documentary, which is Cousteau, backed up, of course, by his son, Philippe, and the recurring members of the Calypso; even the Calypso itself, is a character that people recognize. Instead of going out and doing random documentaries, we start out with this great cadre that gives you a feeling of adventure on the part of the men and the ship. Basically, in programs such as UNTAMED WORLD and ANIMAL WORLD, they just turn the cameras on the animal for long periods of time, often without a great direction to the filming. With the Cousteau documentaries, a great deal of research goes into the expeditions before they start out. I feel, modestly, that we are much more thorough and get into our subjects much more deeply. Every time I research a new mammal it's like going back to college. You're dealing in depth on a given subject, and you can practically come out with your doctorate on walruses, sea otters or hippos."

Now approaching its eighth consecutive season on television, THE UNDERSEA WORLD OF JACQUES COUSTEAU continues to maintain its initial commitment—to air programs with strong messages concerning ecology. Also, each documentary gives the viewer new knowledge about a given species, a verse or so of poetry, drama, science and wonder. A Cousteau special expands, ever so gently, our vision of life. The programs permit us to become more aware of the plight of sundry mammals, such as the sensitive manatee or the ancient nautilus. Each documentary is a pictorial essay, reflecting as all documentaries must, the creative elements of reality.

Continually advocating a reverence toward life, the Cousteau series offers us the opportunity to grow as individuals. Our intellect, sense of professionalism and curiosity about the essence of life is being challenged by, of all things, a television documentary series. In order to purvey artistic and sensitive programs amidst most commercial television fare, it is imperative to have dedicated, contentious and capable individuals; Cousteau's post-production personnel is such a group.

Personally, despite the series' continuing artistic and commercial success, I question the future of the television documentary. Currently, only two continuing documentary series are being aired: National Geographic Society's and the Cousteaus. According to the A.

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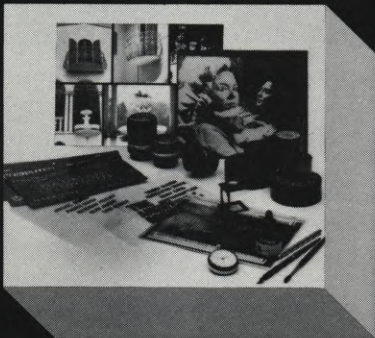
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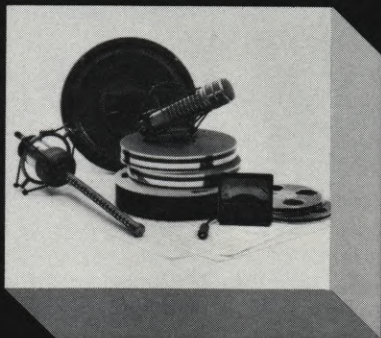
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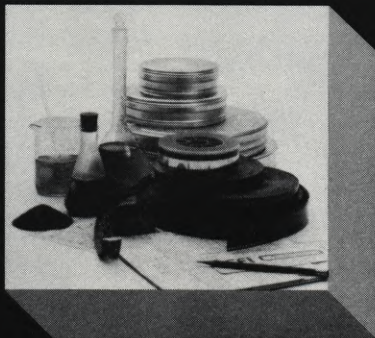
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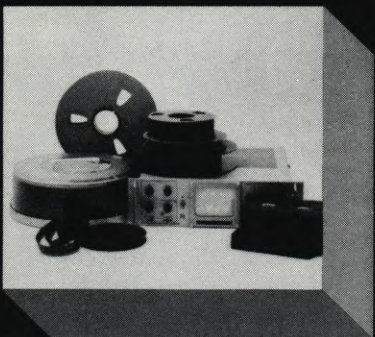
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C. Nielsen Company, during the 1971-72 television season, the three networks aired only 49.5 hours of documentaries in prime time as compared with 3,024 hours of general prime-time programming. The Nielsen data shows that only 1.69% of prime-time programming was in the documentary area. Consider: the television documentary may be following the path of television drama, fading away unnoticed into a wasteland without viewers.

I asked Flaum about the importance of ratings: "The series is incredibly successful critically," he says. "You'll read review after review saying this is the finest thing on television. It is also a fairly highly-rated series—certainly in the documentary area. Of course," added Flaum, "documentaries notoriously don't get very high ratings."

Flaum contends that the Cousteau fare much better than most documentaries but also admits their ratings don't compare with ALL IN THE FAMILY. He is concerned about what's happened to documentaries on television. "There was a time," he mused, "when there were all kinds of exciting documentaries, documentaries that people liked and talked about the next day. Years ago, you had shows like *"The 20th Century," "Air Power"* and *"Victory at Sea"* and the *"Project Twenty"* unit. Those were the exciting days of documentary. Today, if you don't have an animal show to sell, you don't get on the air... I think it's a disgrace. There is a large audience for documentaries, perhaps not as large an audience as there is for a detective series, but you could reach twenty to thirty million people with a decent documentary, with a documentary that had been done with loving care."

In summary, it is essential to understand the workings of our communicative process with respect to the television documentary. Although love, hope and a reverence toward life permeate each Cousteau special, "the documentaries with the strongest messages," says Cousteau, "are the finest and most controversial." Cousteau's philosophy, and my feelings about the series and its continual quest for excellence, are best explained by Captain Cousteau in his special, 500 MILLION YEARS BENEATH THE SEA: "Beneath the sunlit surface, over healthy coral, our divers enjoy swimming in harmony with teeming schools of fish. Science has all the answers to keep the waters of the world clean. We all know that upon man depends the fate of our troubled oceans and of our planet. And it is in the oceans that lies the fate of all living creatures." ■



## "MAN BELONGS TO THE EARTH"

Continued from Page 1201

rubber band. I wouldn't want to do very complicated maneuvers with it, but for simple shooting it's excellent.

Assuredly, you can do better work with a Tyler mount, and the IMAX camera has been used with the Tyler mount to shoot some really beautiful scenes over Niagara Falls for one of the Ontario Place films. But we can carry the rubber band around with us and anytime we see something we like we simply get a helicopter and hang the camera. The whole rig is very simple and fits into a suitcase. It's also very economical, but it doesn't compare with the Tyler mount for real sophistication.

The oil well fire is the most dramatic sequence in the picture, but the truth is that when we shot it we weren't sure we were going to get anything at all. The fact is that they finally put the fire out when it was just about dark. We were using a Nikkor 600mm F/5.6 lens and the light was so low that I couldn't get any kind of reading at all on the exposure meter. I just simply shot the scene on faith and had the MGM lab push it one stop. The result is really beautiful—with that magic light that looks so gorgeous. We were really rocked when we saw it, because there was no indication at the time we were shooting that it would actually work. We just had to wait and see what came out.

I shot the fire with all kinds of different lenses and the major problem was the same that we had in shooting a forest fire—namely, that in order to get the really good stuff, you've got to work close in with the wide-angle lens—and it gets very hot! You just get in as close as you can and hide behind a space blanket. You shoot as long as you can stand it and then run.

Some of the most successful scenes in the picture were shot by my assistant, Averill Townsend. He shot the high-speed automobile runs and several hand-held scenes. He put the camera on his shoulder and did escalator rides and walked through crowds. The reason he shot these scenes is that he's a lot stronger than I am. He can hand-hold a 60-pound camera and I can't.

The sequences with Chief Dan George, audiences tell us, really make a great impression. We had been searching to find a way to talk about the environment without having to resort to the usual narration. I had done an interview with Chief Dan George the previous year and he had expressed his feelings about the environment, Phyllis Wilson,

Continued on Page 1223

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## DOG'S POINT OF VIEW

Continued from Page 1181

istic, and soft-looking as possible—much like the old house looked to the eye in the daytime when lit only by a very few undraped north windows.

To add complications, there were numerous low, very wide angle shots that literally showed the entire "set": floor, walls, ceilings . . . everything!

At first this was tough, but the obvious finally came to the surface. We used the existing windows and lit through them. The windows were covered with Rolex and 10-K big eyes were placed outside, producing a nice soft north window effect. The light was very directional but was virtually shadowless, and when shooting into a key window it photographed as clear white creating contrast to the subdued interior. Additional Mole-Richardson soft and Lowell Light Kits were used to boost the backgrounds and kick the people.

Additional softness was achieved by using a #1 diffusion . . . but with the soft lighting, diffusion and low F-stop level (F-2) we felt that we might be getting a little too flat so we forced everything inside the old house one-stop to build the contrast back up.

The look of the set was just what we wanted and it gave us a basic 360° lighting setup, which was particularly good when working with the dog, who was a bit unpredictable on occasions. The only problem it created involved a couple of "snap-zoom" shots using the Angenieux 25-250mm which is a T/3.9 lens. For these few shots we built up the light level one-stop and continued to force one-stop.

The other interior location was a beautifully restored 102-year-old home loaded to the brim with very expensive antique built-ins and furnishings . . . and very cramped compared to the haunted house. Again, we were faced with shots from the dog's point-of-view showing almost everything in the set, yet this interior didn't call for the benefit of low-key subdued lighting. It had to be much higher key—definitely, a home being lived in. But the problem was where in the world to put lights and not see them?

The key lighting man, Bill Roper, and I studied the problem for some time and finally wound up lighting the entire interior of this house with Lowell Light Kits. We had 'em taped to the ceiling, hidden behind posts, bouncing off the walls and even hidden behind plants . . . and it worked extremely well. True, we spent a lot of time changing bulbs and

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threw away more than a few takes when a bulb would blow out but we were able to light and photograph this beautiful set in a manner that is rarely seen on the screen today, showing virtually everything there was to see.

The entire project was the biggest, most challenging one I had ever been a part of and I can honestly say I've never worked with such a perfectionist-oriented bunch of people in my life. I think Joe Camp has created a film classic, and believe me, a film classic is a hell of a thing to tackle for your first picture. It was his and it was mine. And it was fantastic!

## "OPERATION 5008S"

Continued from Page 1209

mouth. I was ready to throw away the cartridges and not even have them processed, as I knew that I would never get any intelligible track under these conditions.

Well, I couldn't have been more wrong. With the switch set on automatic level, the amplifier suppressed the rotor noise sufficiently so that John's voice came through loud and clear, and as he banked the chopper so that the freeways and the buildings showed up in the background, the final viewing of that film created a sensation.

I spent about two weeks "playing" with the Beaulieu single-system sound camera. I filmed a baby's birthday party, a wedding couple horsing around while they cut the wedding cake, and even a girl wrapped in a towel in her bathroom as she drops the towel for her husband or boyfriend. (Don't get excited, for Hervic she had to wear a bikini swimsuit underneath.)

In every instance the camera performed like a trouper. I was getting just as good picture and sound as I would get on a 16mm single-system camera.

Then it occurred to me... why the hell is TV using 16mm for news and documentary when they can get this kind of results with the new Super-8? The 16mm TV news camera with a full magazine and power belt and light weighs between 20 and 30 pounds. Here was a camera with built-in power, a high-speed lens that would shoot in any light, automatic exposure control, a longer range zoom than used on 16mm, and the whole thing weighs only six pounds.

The largest a TV picture is ever blown up on the screen is a 25-inch diagonal. Well, this Super-8 blown up to six feet looked clear and sharp. So at a 25-inch diagonal it should be quite acceptable for TV.

Okay... so you might say, "It only

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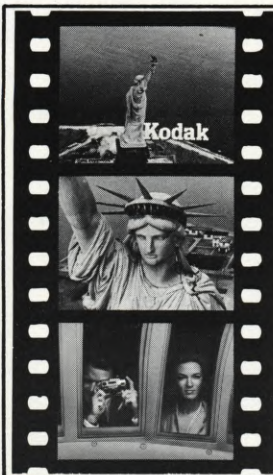
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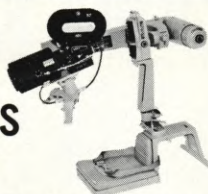
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takes a fifty foot cartridge... not enough!" In one way I'll agree. But I purposely tried some shots of speeches where I'd have to change cartridges in the middle of a speech. With someone standing by ready to hand me the second cartridge, the shortest time it took me to open the camera, remove the first cartridge, insert the second and close the camera and start shooting was clocked at four seconds. The longest time, and this was done without a helper, but having a second cartridge already unwrapped, took just under ten seconds, and that included the time to shove the first one into my pocket, remove the second from another pocket and insert it into the camera. So give or take an average of six or seven seconds for changeover, unless that is the exact moment when the bomb goes off, or the guy jumps off the building, or the trains crash or whatever, I think a cameraman can judge his shot and not miss anything by the changeover. Hell, I've seen guys with 16's caught in the middle of changing magazines at the wrong time and it took them several minutes to make the switch... so how can you compare that to from four to ten seconds? And I'll bet if some hotshot really tried, he could make the switch in less than my four-second try.

In one shot I went from bright sunlight into the door of my studio following a person into an inside room where he turned off all the lights, lit a candle and held it close to his face while he talked. While he was talking, I turned on a bright spotlight and finished the scene. In all lighting instances, the automatic diaphragm behaved like a doll. All I did when we got inside from the bright sunlight was to push the little button on the lower right side of the camera from "sunlight" to "artificial light" and didn't even bother to change the ASA. So how do you like them apples? If I were doing that in 16mm or 35mm, I'd have to take readings of every area, then have an assistant follow me changing openings as we moved from one lighting condition to the next. Did you ever try that with a hand-held camera? Murder, brother!

So, I can only make one prediction. As soon as the TV bigwigs get educated to this new Super-8 sound, I'm willing to bet that all TV news will eventually use this system and much of the TV documentary material will be shot this way also. This should suffice when the largest this picture will ever be shown (as we know TV today) is no bigger than about 16x20 inches.

So thanks, Walter and Tony, for not only letting me try this new wonder-camera, but also for changing my whole concept of this Super-8 minifilm. ■

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## "MAN BELONGS TO THE EARTH"

Continued from Page 1219

who was assisting me on the picture was a friend of the Chief's, so she went back and spent two days talking with him and taping everything he had to say on environmental issues. What he said was really interesting. The Chief is over 80 years old, I think, and so he has the point of view of an earlier generation, as well as that of an Indian. Because of that, he talks with great feeling about it.

We didn't use a writer to create his dialogue. We simply selected from the things he had said those points which were most relevant to the film. Then we filmed him in locations that seemed appropriate. We went to a river in the state of Washington during a salmon run and shot him wandering along the banks and telling about how his father taught him not to waste fish. He comes across with great believability and I think everybody in the audience feels his emotional conviction. He becomes the key figure in the film and holds it together in terms of its line of thought.

We also captured something of the same feeling in the sequence about the ranchers. Their families had been on the land for generations and they didn't want to lose it to the strip miners, so they expressed very strong feelings. We simply went and talked to them and recorded what they had to say.

I've had many years of making *cinema verité* films and, although the camera does make a difference, I try as much as possible to preserve the feeling of *cinema verité* when I'm making a documentary. I'm very allergic to stagey situations and I try to avoid staginess by going into situations where people are doing something and are so involved in what they're doing that they actually ignore the camera. This was certainly true of the men fighting the oil well fire, and it was true of the ranchers, as well.

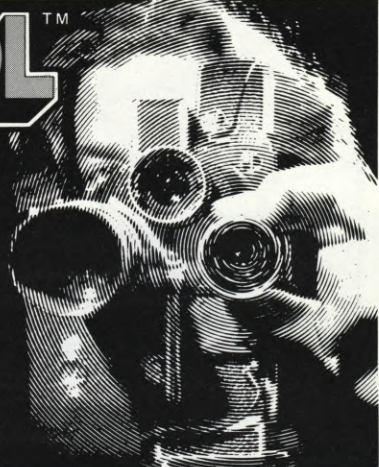
"MAN BELONGS TO THE EARTH" was in production for about ten months. We started in July last year, did the last shooting in February and delivered the film at the beginning of May. By contrast, the comedy for Ontario Place started shooting at the beginning of February and was delivered in May of this year. However, it was a completely scripted film and we were able to shoot it on a much tighter schedule. ■

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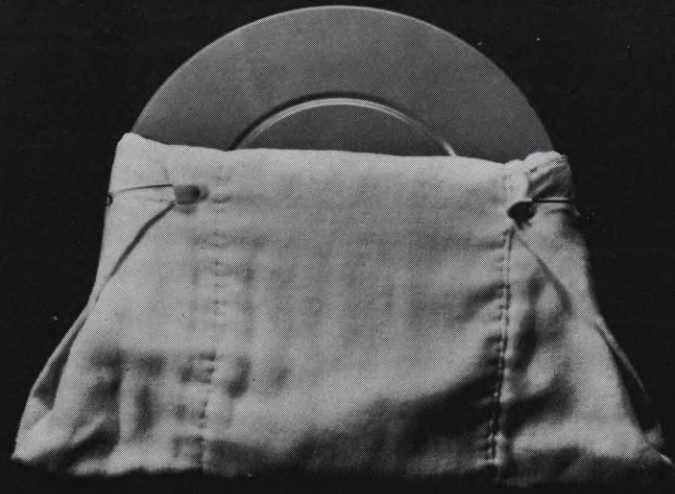


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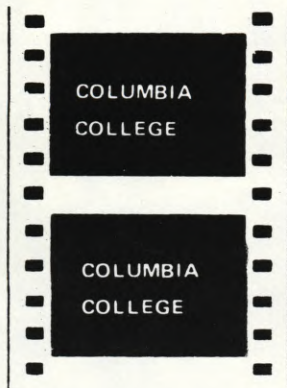
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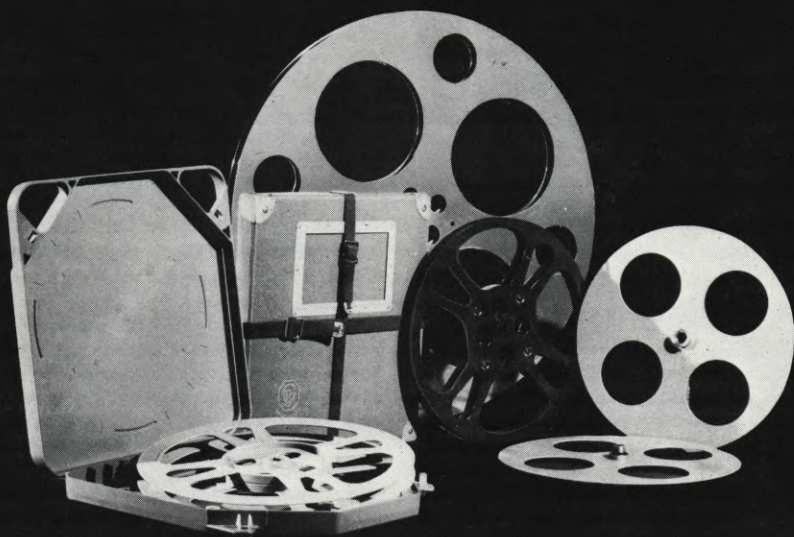
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# INDUSTRY

## "IMPOSSIBLE OBJECT" TAKES TOP HONORS AT ATLANTA FILM FESTIVAL

The Grand Awards Jury of the Seventh Annual Atlanta International Film Festival selected John Frankenheimer's film "IMPOSSIBLE OBJECT" as winner of the coveted Grand Award Gold Phoenix for the best film of the Festival. It was selected over more than 2,000 films and 180 features. The Silver Phoenix for best feature went to 20th Century-Fox for the Feste opener, "HARRY AND TONTO" directed by Paul Mazursky. Over 500 film makers, producers, directors and press attended the Grand Awards Gala (Sat. eve Aug. 17, 8 pm) in the Grand Ballroom of the Sheraton Biltmore.

The Jury awarded the Atlanta Feste Gold Medal for best actor to Art Carney for his leading role in "HARRY AND TONTO". Dominique Sanda received the Gold Medal for her part in "IMPOSSIBLE OBJECT". The Best Supporting Actor Gold Medal went to Larry Hagman for his portrayal of the failing son in "HARRY AND TONTO" while Ellen Burstyn received the Gold Medal for Best Supporting Actress for her role as Carney's daughter in "HARRY AND TONTO". The 20th Century-Fox film continued to sweep awards as Paul Mazursky took the Atlanta Feste Gold Medal for Best Director. Nicholas Mosley received the Gold Medal for Best Screenplay for his work on "IMPOSSIBLE OBJECT"—and the Gold Medal for Best Musical Score went to Michel Legrand for his work with "IMPOSSIBLE OBJECT".

Other major awards from the Seventh Annual Atlanta International Film Festival included: Silver Phoenix, Best Documentary to "THE GREAT AMERICAN COWBOY" from American National Enterprises, the Silver Phoenix for Best Television Production to "THE AUTOBIOGRAPHY OF MISS JANE PITTMAN" from Tomorrow Entertainment, Silver Phoenix Best Television Commercial to Directors Circle for "VERUSHKA/LAUREN/JEAN/ANGELICA", while the Silver Phoenix for Best Short Subject went to Van Glintenkamp Enterprises for their production of "ZEBRA". The Golden Dove Award for the Best Film Dealing With or Contributing to World Peace went to BBS Films, Bert Schneider producer, for "OF HEARTS AND MINDS", a Columbia Pictures release. The Gold Medal for



# ACTIVITIES

Best Foreign Director went to Cristo Cristof for his work on the Bulgarian film, "LAST SUMMER". The Gold Medal for Best Cinematography went to Isidore Manofsky for his lensing of "THE SECOND COMING OF SUZANNE" a Barry Film Company Production. The Best Editing Gold Medal was awarded to Frank Mazzola for his cutting on "THE SECOND COMING OF SUZANNE" which also took the Gold Medal for Best First Feature.

The Grand Awards Jury, including Kathleen Carrol of the New York Daily News, Author Leon Uris, Playboy Fiction Editor, Stanley Paley and Jim Waley, Film Commentator on the Syndicated "CINEMA SHOWCASE", selected "THE APPRENTICESHIP OF DUDDY KRAVITZ" for a Special Jury Award Gold Medal, even though the Paramount Picture was an invited entry out of competition. The Jury felt in a unanimous selection that the film's outstanding excellence commanded special recognition despite its noncompetitive status. Other Special Jury Awards went to: the French entry "LOUISA, WORD OF LOVE"—an Alain Vallier release, to Pancho Kohner and Capricorn Productions for "MR. SYCAMORE", to Cinema Financial of America for "MEMORY OF US", to the official Hungarian entry "25 FIREMAN'S STREET", to two films from Tomorrow Entertainment for their entries: "TWO MEN OF KARAMOJA" and "GRAVY TRAIN". Also the Andy Warhol/Paul Morrissey/Bryanston Pictures entry "BLOOD FOR DRACULA" and the New Yorker Films release of "A FREE WOMAN".

The Seventh Annual Atlanta International Film Festival reached a new level of success with 99 separate screening sessions that unspooled 80 features, and over 150 shorts and documentaries in the ten-day event. 12 separate world premieres went clean with total sell-outs, including both weekends (Aug. 9, 18). The two main theatres of the Atlanta Feste include the 800-seat Alliance and the 1800-seat Symphony Hall. These theatres ran separate screenings from ten a.m. until two a.m. the next day. The enthusiastic response of Atlantans had long lines round the block and overflow crowds for almost every evening performance. Atlanta Feste director J. Hunter Todd stated that attendance was up over 300 percent over last year and that the total Feste attendance figures topped 30,000. In both quantity

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of major features and in quality of the film program plus total support from the major American studios, the Atlanta Feste has established itself as the Other Festival in the film world today. The Atlanta Festival's Film Market Division was a great success this year with seven theatres running over four hundred market films.

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The 17th annual National Press Photographers Association Flying Short Course, October 27 through November 2, will be one of the most dramatic and educational seminars ever held in the United States.

NPPA Education Chairman Cornelius Keyes said he has assembled one of the finest FSC faculties ever brought together. The 10 speakers will be present at each of the four FSC stops this year.

The dates and locations for each FSC stop are:

- Philadelphia, Pa., October 27;
- Milwaukee, Wisc., October 29;
- Denver, Colo., October 31;
- Los Angeles, Calif., Nov. 2.

Local FSC chairmen are: Sal Di-Marco, Box 502, Drexel Hill Pa. 19026; Richard C. Greenawalt, The Milwaukee Journal, 333 West State Street, Milwaukee, Wisc. 53201; John White, The Denver Post, P.O. Box 1709, Denver, Colo. 80201; Professor Bill Wittich & Steve Fontanini, California State University, Long Beach, Calif. 90840.

Two important new features have been added to this year's FSC. First, there will be an advance registration deadline of Oct. 14. Prior to Oct. 14, photographers and students may register for \$10 for NPPA members; \$15 for non-NPPA members and \$7.50 for students. After Oct. 14, the registration fees will be \$12.50 for NPPA members; \$17.50 for non-NPPA members and \$10 for students. Military personnel will be admitted free if they are in uniform.

This year NPPA members will be able to have their portfolios critiqued by a member of the FSC faculty. Due to the limited time on each program, only the first 40 portfolios received by each FSC chairman will be critiqued at the end of the day session.

"Each portfolio must be in the hands of the local FSC chairman by Oct. 14," said Keyes. "A maximum of 20 boards, 16 inch by 20 inch, will be allowed in each portfolio."

Members of the 1974 FSC faculty are: Greg Cooke, CBS News cameraman;



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Bruce Dale, National Geographic photographer; Ricardo J. Ferro, St. Petersburg, Fla., Time, photographer; Clifton C. Edom, professor emeritus of the University of Missouri at Columbia; MAGNUM photographer Mark Godfrey; Dick Sroda, director of photography at the San Bernardino, CA, Sun-Telegram; Steve Larson, picture editor of the Denver Post; Canadian Film Board members Lyle Cruickshank and Mike Rubbo; MAGNUM photographer Wayne Miller; William Strode, NPPA president and assistant director of photography for the Louisville Times and Courier-Journal.

Hotels have been selected in each city where the FSC will be held this year. In Philadelphia the FSC site is the Sheraton Airport Inn. Milwaukee's host hotel will be the Pfister Hotel; The Holiday Inn Downtown, Denver, and the International Hotel in Los Angeles are FSC sites.

"All the hotels are offering reduced rates to people attending the FSC," said Keyes. "When photographers register with the FSC chairmen in each city, they should request a hotel registration card be sent to them."

Keyes said the Military Pictures of the Year winners will be on display at each FSC stop and each city will have exhibitors.

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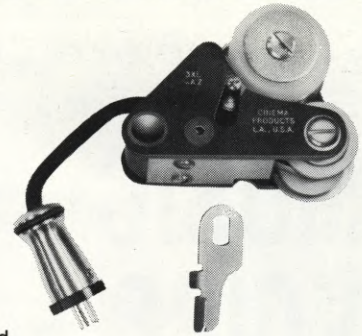
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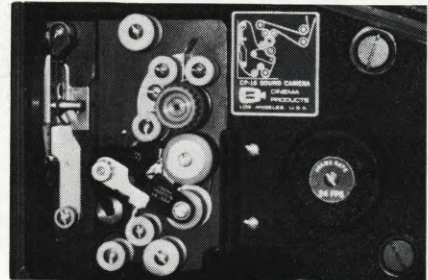
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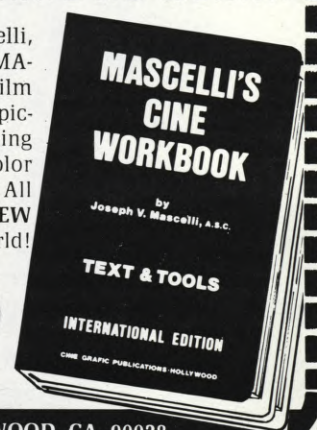
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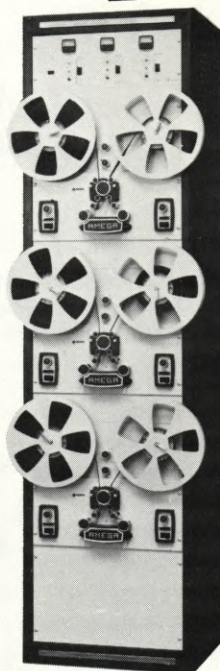


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## "MOTHER EARTH, FATHER SKY"

Continued from Page 1174

few seconds' screening duration, of course, took almost three hours to set up and film.

Filming Cheryl, the little girl riding her motorbike through the woods, presented an interesting challenge. To get on-board views of her features while she maneuvered her bike, I rode behind her, holding the Arri alongside her face. I gripped her bike with both knees, balancing myself with one hand, the other holding the camera. To her credit, she never faltered or hesitated with my extra weight as we bounced along the bumpy trail. I then got on a bigger bike with her father and shot "bike to bike" with a 5.9mm lens, again balancing as best I could, with the Arri held varying degrees from Cheryl and her bike. In the final film Cheryl's voice-over comments described her feeling while riding her bike and the visual was a split screen; one side being Cheryl's features as she rode, the other side what she saw.

Don Renn, a veteran of twenty years of underwater photography, filmed for me at John Pennekamp Coral Reef State Park in Florida. Don used his custom-designed underwater rigs and Arriflexes with a 5.9mm lens to shoot fish and swimmers in the clear Florida waters. Zack and I shot topside, as well as the family camping sequence featuring the Ford camper.

From Florida the film travels to Point Reyes, California. My younger brother David, a free-lance writer, his wife Pat, and three-year-old daughter Krista were filmed digging in the sand dunes. The high winds initially bothered soundman Chuck Everts but he skillfully "buried" the mike near my niece and we filmed her chattering away about her love of the outdoors with little wind noise. As always, I was trying to capture on film the offhand impromptu remark concerning a person's attitude towards the outdoors. Krista didn't let me down as she all but ignored her Uncle John behind the ACL and talked at great length about a mythical Freddie that she was building a sand castle for.

The final wrap-up montage in the film begins with the marshmallow roast at Newport Beach. Bob Moline sang and played his guitar as I filmed a group enjoying themselves as the sun goes down. As Bob sings about "The Feel of Freedom", I reprise bits of the film previously seen and dissolve back and forth, keying my editing on smiles and quick bits of action to emphasize the joy of the outdoors. People I had filmed

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playing the steel drums in Central Park, the balloonist in Arizona, and the kids in the leaves, all blended in with Bob's song. Ford was so taken with the song that it was arranged for tapes of the performance to be played in the Ford theater in Spokane before and after the screenings of the film.

The six weeks of editing was done on a three-picture-head KEM editing machine. It was ideal for this project, due to my occasional use of multi-image as well as the capability of using two sound heads as I edited.

Eventually I screened the final cut for Hollywood composer Jimmy Haskell and we discussed my musical needs. I desired a simple score, using the melody of Bob's song, that would be an integral part of the film, but not overshadow it. Talented Jimmy viewed my film, then set up his small camera and tape deck and taped the film from the KEM and recorded my comments as to what music I wanted where! With his tape of my film to work from, Jimmy provided me with a score I feel is ideally suited to "MOTHER EARTH, FATHER SKY".

While Cinema Research began the month-long optical effects and blow-up to 35mm, I laid in the final music track and mixed at Glen Glenn in Hollywood. Technicolor made the release prints and, as usual, they were completed a day before we opened the show in Spokane! As always, the first look at the finished product with an audience is a mixture of pride, doubt, smiles, and frowns. I don't think there is a film-maker in existence who wouldn't like to do something over when he or she sees that image on the screen. Standing with all those strange people reacting to my film in Spokane I saw a number of things I could change. Several scenes too long; a few too short and a little lower angle on Krista, a higher one on my father at the beach . . . Well, anyway, no film is ever perfect I guess. It is certainly an endless learning process, this business of film-making, and the relationship between the eye, the camera, film stock and the viewer constantly changes.

A sidelight to this film is that in 1960 I started my first job in film as a production assistant with a small film company in Hollywood. The film was a 70mm stop-motion film made for the Seattle World's Fair. Unknowingly I started then a circle which I feel is now complete, at least in respect to Washington World's Fairs. From a "Seattle" production assistant to a "Spokane" producer-director-writer-cameraman-editor in 14 years! I only hope that the next 14 film years bring to me as many learning experiences, excitement, joy, and new friends, as the past 14 have! ■

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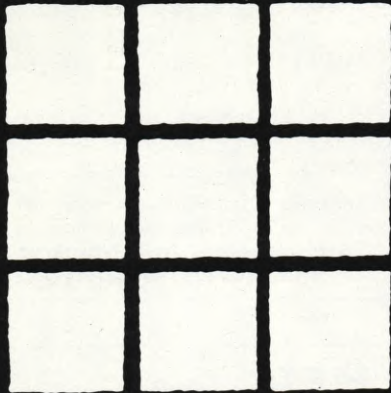
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## "ABOUT TIME"

Continued from Page 1206

### "THE TREE"

Finding the tree was no easy task. We enlisted the help of all the State agencies who might know of such a unique tree; followed every lead. The tree had to look thousands of years old. We literally scoured every section of the state, by car and helicopter. We found two Douglas Firs: one over 200 feet tall, on the Ft. Lewis Golf Course; the other in a lovely little cemetery in Centralia. Both were very dramatic and "cathedral-like", when one stood under the umbrella of lower branches.

Camera points-of-view were limited by visible signs of civilization—the 9th tee on the golf course, for one, and the grave markers for the other.

We locked in on the Ft. Lewis tree, and arranged for the crew to come out in two days. The night before their arrival, Gerry Ehrlich, one of our production assistants (a Washingtonian who was invaluable during the pre-production stages), got wind of an awesomely large tree way up in the San Juan Islands.

Ed deMartin, the Director, felt obliged to at least see the tree before production began. He and Gerry, Lou Girolami, the Associate Producer, and Jack Priestley, our Director of Photography, left for the San Juan Islands on the next available ferry from Seattle. Jack shot our film, called "CIRCUS", in 70mm (See *American Cinematographer*, February, 1973.) I had already set up Olympia as our base for the first shoot because of its close proximity to the tree in Ft. Lewis.

That night I got the call... Bob—this is Lou. The tree is unbelievable! Ed and Jack love it."

"What would moving the location to the San Juan Islands do to our budget, Lou?"

"Don't ask", he responded.

Late that night, upon their return to Olympia, we all met, and studied some 20 polaroids of the tree, taken from all angles called for in the script. It really worked. It was almost a perfect match to the tree deMartin had envisioned in his original concept and in the storyboard.

Lou worked through the night to make accommodations for some 35 people, including crew, talent, equipment, generators and cherry-picker (for tree-panning shots) and their operators, who were sent up in advance, as travel by road and ferry was tediously slow.

I asked Jack Priestley if this was convincing as a place in which "God

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lived", as the little girl in the story believed. When he presented me with a polaroid taken of him under the tree, on his knees, in an attitude of prayer, I was convinced!

deMartin and I thought the film would be more "true to life" if we selected our "talent" from residents of the state. This decision created perhaps the most arduous task of the pre-production phase, that of finding five girls who would be perceived by the audience as the same child, growing from a baby to a mature young lady.

Once, we thought we were all set, after three months of interviews all over the state... then we did our screen tests. This "acid test" indicated that we were not ready. Further arduous searching and testing finally provided the winning combination!

Working with young children may be the most frustrating experience a filmmaker can have. But when we achieved a usable take, it was like finding gold!

Another frustrating element of the film had to be the long, seemingly unbelievable wait to see dailies. Since we spent a good portion of the shooting in the "boondocks", sometimes ten days would pass without seeing a daily. Scheduled airlines were almost totally incompetent; chartered planes were slightly more efficient. We were totally in the hands of Priestley, who was uncompromising in his insistence on near-perfect light conditions when shooting. His persistence paid off. The dailies were magnificent. We never pushed the film once, in processing. When the first cut was complete and a slop print produced, it was the closest thing to a balanced print I had ever seen.

Shooting in anamorphic created a few problems, too. (See Groesbeek article, this issue.) We carried our own anamorphic lens with us for those occasions when we were in a town without anamorphic projection facilities to screen dailies. The Todd-AO anamorphic camera system was used to photograph the film. This wide-screen format was chosen for two reasons: the oversized format lends itself to the lovely panoramic vistas prevalent in the film, and the immense screen was ideal for the unique custom designed theater, which I will discuss in greater detail later.

In the first act of "ABOUT TIME", we went to great lengths to achieve a primeval quality on film. This act, after all, established Earth "before time"; that is, before man was present. It was important to achieve a smooth transition from scene to scene, representing

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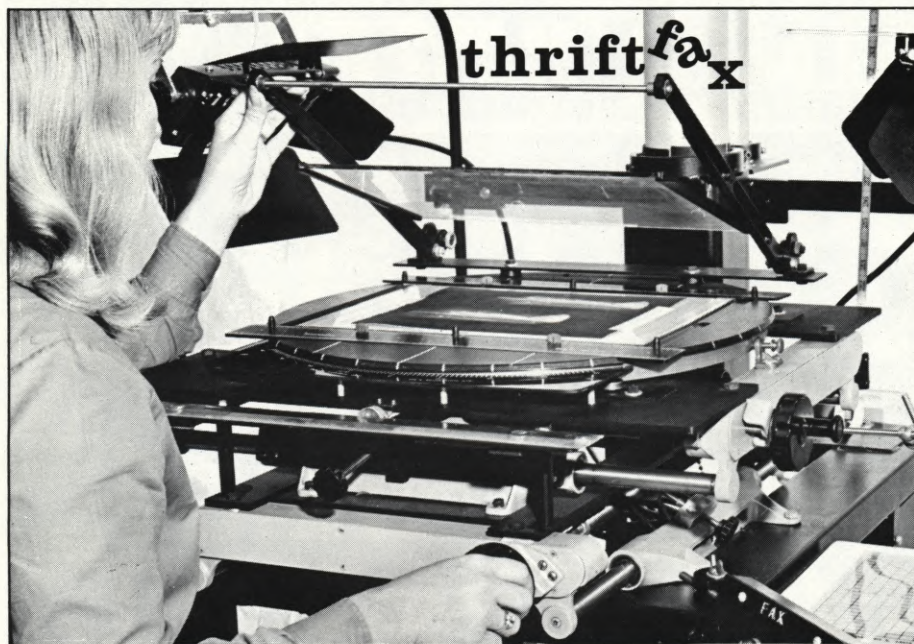
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Earth's natural beauty, not yet cluttered by man's intrusion.

We swept from crashing waves on a beautiful, desolate beach, the camera pushing through the mossy jungle of the Hoh Rain Forest on the Olympia Peninsula, to a shot of an eagle soaring high over the Cascades, and ended up on a pan down our glorious old tree. We had to travel some 2,000 air and land miles to get the contrasts, but it was all accomplished within the boundaries of the state. Does the average movie-goer realize what it is like to accomplish on film that which is visually "smooth" and cohesive?

We had decided on shooting hermit crabs, starfish and the other inhabitants found only in the tidepools of the Northwest, at Neah Bay. Girolami had made arrangements with a resident archaeologist, who had befriended the local tribe of that farthest outpost of the Continental United States. He had discovered a longhouse that proved the tribe's genealogy back over 2,000 years, and had become the tribe's liaison with outsiders. The tidepools hold religious significance for the Quilutes, and it was an honor for white men to be allowed to set foot near them.

Our advance guard, usually one or two days ahead of the crew on the itinerary, found to our dismay that a bad weather front had set in at Neah Bay, and that no sunlight was expected for at least a week.

We needed a location for our shoreline and tidepool scenes, and discovered an alternate location in La Push, further down the northwest coast of the Olympic Peninsula, 15 miles outside a little logging town, called Forks. Indian guides of the tribe showed us the access routes down the steep slopes to the coast. A few trips (about one mile, round-trip, from the nearest road to the shore) had us all heaving for breath.

Marty Nallan, key Grip, said, "Forget it—no way to honcho all this equipment down and still have enough energy to make shots." I agreed.

Girolami, my Associate Producer, started looking for a helicopter, and found one in a nearby town. The helicopter pilot's schedule was booked solid in forest fire fighting and spraying activities. After much debating, he deferred to our request, and squeezed us in between fires, having caught the "movie-maker's bug." Six trips back and forth from the airport got crew, equipment and talent on the beach by 7:00 a.m. each morning. We got great footage of the crashing waves here, and simulated our own tidepool with "imported" sea animals from Neah Bay!

I have to say, I got a small taste of



# American Cinematographer

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June, 1968

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what cinematographer Robert Surtees meant when he referred to "terrible experiences filming in Washington on 'LOST HORIZON'." (See *American Cinematographer*, April, 1973.) However, we were probably the first Production Company to enjoy good shooting weather in Washington most of the time. Gerry Ehrlich and John Cox, Production Assistants, who had made several films in the state, kept shaking their heads in disbelief whenever I complained about the sun poking itself behind a cloud for a half-hour. Apparently, we were having unbelievably good luck, and were too naive to realize it.

But, in the final analysis, we attributed our good fortune to Jack Priestley, who wore his "Location Shoes" every day. His footwear (we're giving them the benefit of the doubt in calling them "shoes") were a pair of size 14, Kelly-green and white striped suedes, with a grossly large Shamrock studded on the side of each! Jack claimed supernatural powers were invested in them, guaranteeing sunshine in all outdoor situations. (One morning, Jack came to the location sans "green monsters." We sent the driver back to the hotel for them Why spit in the eye of fate?)

Priestley, an imposing 230 pounds of he-man, who has filmed many action films, showed that he is also a cinematographer with sensitivity. When we were in the Hoh Rain Forest, shooting some of the "Before Time" sequences, Jack got all turned on with the natural beauty he saw in the eyepiece of a super ECU of a mushroom through the Macro lens, topped off with a few Proxars, to bring us in even closer to the subject. He insisted that the whole crew look through the eyepiece at this little natural jewel. Marty Nallan, veteran of many film wars, was not turned on by the static set-up and commented, "Yeah, Jack, just like shootin' 'ACROSS 110th STREET'." It broke the crew up.

## THE EXHIBITION

In producing a film for an International Exposition, it is often wise to offer the visitor more peripheral excitement and involvement than possible in a standard theater.

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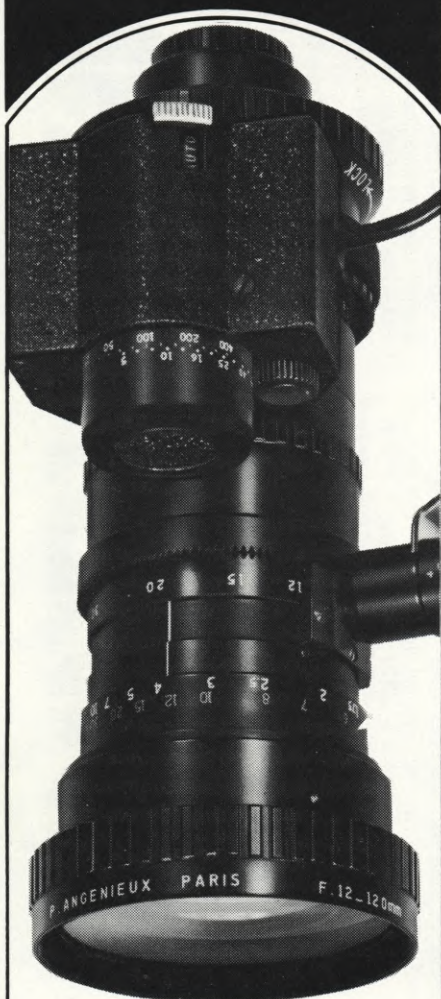


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tion Theater at the end of the ramp network. As the visitor ascends the ramp, he literally walks through a "sight and sound" show, where he experiences the forms of nature: the sun, rock formations, vegetation, waterfalls, etc.

At the end of his journey, he finds himself at one of three holding areas, immediately outside the theater. A large, digital clock is on display, "counting down" the minutes before the next film presentation. At "zero hour", the theater doors open on three levels, and the viewer enters on one of three vertically stacked tiers: the lowest at grade level; the highest at 24 feet above grade.

Because of the high visitor volume normally experienced at world's fairs, Alex Cranstoun, my partner, in charge of Exhibition Design, elected to utilize a "locked" traffic pattern; that is, one in which the visitor, unknowingly, is always moved in a specific direction at a specific time. Thus, while entering the theater from the left, he leaves from the right, and there is a logical, continuous flow of traffic in one direction.

## THE THEATER

Just being in the theater is, in itself, quite an experience! Three hundred people are literally perched, like eagles, on three vertical tiers, one above the other, so that everyone has, essentially, a first-row seat.

Although the film was designed to work in a standard theater configuration, we decided to "zap up" the World's Fair presentation strategically, by lining the side walls of the theater with floor-to-ceiling mirrors, running the full 40 feet from the edge of the screen to the edge of the viewing tiers.

The mirrors are hidden by black curtains, and these curtains are automatically withdrawn at key moments in the film, to reveal the mirrors to the audience. This was made technically possible because the film is rear-projected, providing a cleanly-delineated intersection between mirrors and screen. The effect, when the mirrors are exposed, is such that the images seem to explode on the screen, and literally stretch left and right, as far as the eye can see.

Of course, those scenes of the film seen on the central screen when the mirrors are exposed had to be carefully designed to look well when flopped, for the mirror-image system accomplishes the infinity effect by flopping every other multiple of the *actual* image on center screen. The effect is truly awesome, when we realize that the audience is only 40 feet away from a screen that measures 23' high by 50' wide. The viewer is literally *in the film!!!*

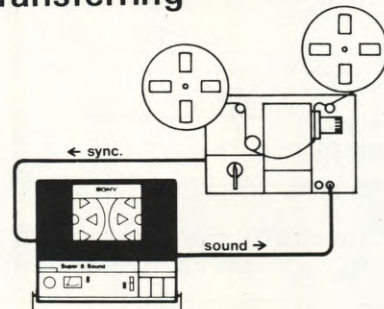
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## THE SOUND TRACK

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A good portion of the success of "ABOUT TIME" must be attributed to the original musical score and arrangement of David Lucas and Tom McFaul, two young musical geniuses in New York City, who are currently enjoying tremendous success. Lucas is the "pop" specialist. McFaul, of classical background, has the talent to adapt the "grand sound" of the classics to a contemporary idiom. They reviewed the rough cut and were "immediately turned on."

The score runs the full range—from the semi-classics of a flute solo, to the grandeur and brilliance of a 50-piece symphonic orchestra; from the solo voice of a folk singer, to the up-beat sound of a children's chorus.

In my opinion, Lucas/McFaul are the hottest musical entries in the film business of the decade.

Music recorded on 16 tracks was mixed down to 4-track, and this, with all stereo effects, narration and singing, was turned over to Lee Dichter, of Photo-Magnetic Sound, who is probably the best multi-channel mix man on the east coast. He developed a 4-channel crossover speaker system for the mix, so we would hear the final mix against image, exactly the way it would be seen and heard at our pavilion. I believe it's the only set-up of its kind in the East.

Armand Lebowitz, of Lebowitz Films, an editor and now dear friend, dedicated himself to the task of a 20-minute film from enough footage content to make a film of much longer running time. He stayed with Ed and me through every phase of recording and mixing, contributing all along the way. Armand reminds me of an atomic reactor, somehow concealed in a human frame: when running rough-cut footage, he supplies all music, sound effects and narration verbatim as he stands before his "Cine", working the levers and levels, like a maestro standing before his orchestra with the baton.

During all of these post-production activities, Don Kloepfel, projection systems consultant of Hollywood, was busy designing a customized projection system for the theater, including custom lenses for the DP 75's, to meet the unique problems that are encountered in using a wide-screen, rear-projected format.

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Now that our mini-feature, "ABOUT TIME" is complete, Ed deMartin and I find it has done nothing less than sharpen our appetites for our next project—hopefully, a full-length feature!

## THE SPECIAL CHALLENGES OF FILMING "ABOUT TIME"

By CHARLES GROESBEEK

Second Unit Cinematographer

### PROLOGUE

In this world, you *LEARN* some things and *DO* others. This author once *learned* to teach philosophy. Partly as an escape to some semblance of honesty, he *did* Alpine mountaineering and guiding. It was through the frustration of bringing teaching to guiding that he discovered the distinction: you don't *LEARN* to make love, you *DO* it.

Cinematography in film-making is one of man's exacting endeavors. There is a staggering amount to be *learned*, and equally formidable activities to be *done*. Resource material which is aware of this seems to be almost non-existent. The validity of academia notwithstanding, apprenticeship may be the only effective way to "get into film." At the same time, economic factors make that avenue rare. Sometimes special skills will help. I climbed mountains and held a guide's license. Alvin Yudkoff, Silver Mine Films, New York, made that initial risk by giving me a sound man job with Michael Wadleigh on "ONCE BEFORE I DIE" (see *American Cinematographer*, Wadleigh, June 1969, and Groesbeek, "CINEMA VERITE", October, 1970).

Camera and tape recorder are to society today almost as pen and paper were to Hemingway, Camus and Jeffers. There is no real formula to get from classroom or "personal" films to commercial jobs and professional status. Talent? Perhaps. Hard work, sacrifice and commitment are more substantial.

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When the rare opportunity comes along to grow and/or shoot "over your head", excitement is tempered by inquiry: is it just that I charge that fee? Can I deliver the footage?

### ENTER: ABOUT TIME

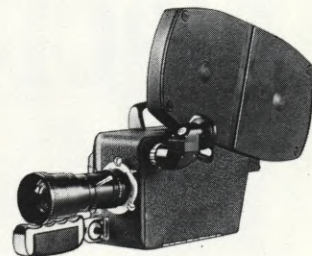
The following is an account of the preparation for just such an opportunity. deMartin-Marona & Associates, of Elmsford, N.Y., desired certain key thrill scenes and winter sequences for ABOUT TIME, the State of Washington's contribution to EXPO '74. Their search led them to friends I had worked with who respected my work. Thus came that phone call with which all too many *American Cinematographer* articles begin. Bob Marona, Producer: "Groesbeek, we need outstanding action, scenics, etc., shot in 35mm anamorphic for 70mm projection." My experience was largely limited to 16mm. All DMA had to go on was a reputation from those who gave the recommendation.

### INITIAL PROBLEMS

Between that contact and accepting the assignment, suspicions were confirmed that the Todd-AO anamorphic system is just another selection of equipment—a series of problems to be solved. Read about it (there's damn little). Glean as much as possible from others with more experience. Take notes.

The problems seemed to isolate into seven categories: ONE: wide-screen format (Todd-AO has desqueezed finders, eliminating one obvious problem). TWO Mitchell S35R is the standard camera. THREE: strobing (DMA was anxious over that problem). FOUR: a full complement of new lenses. FIVE: the anamorphic element and flaring. SIX: weight and balance for hand-held action (one producer consulted said, "Groesbeek, you just don't dash around, hand-holding those things"). SEVEN: projection format of 50' x 22' with the audience stacked on steep balconies just 40' from the screen.

ONE: wide screen, 2.35-to-1. That's an opportunity. Shots can have context, eliminating some cutaways. Or, a shot can legitimately take the viewer into the scene, immerse him in the drama. But remember to think wide, check the vertical edges through each shot. You almost have to do each side separately. Also, you can use the format to dazzle, or show the viewer what he never focused on before—the difference of



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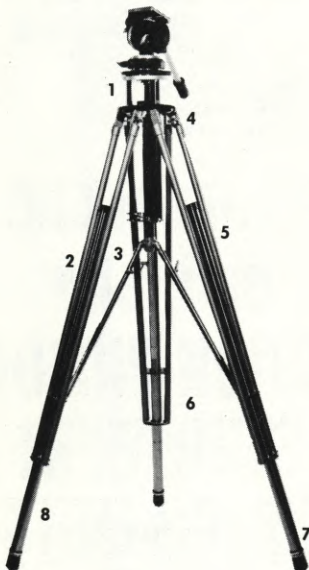
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degree is so great as to be a difference in kind.

TWO: the big Mitchell. Easy. The Todd-AO lenses also fit on a modified Arri 2-C. But when the Arri is stripped for hand-held, the hard-front lens mount leaves damn little room for your fingers to complete that "thou-shall-shoot-righthanded" Arri grip. It remained a problem of some concern. However, during ski travel shots, the subjects moved unexpectedly off to the right. Instinctively, the camera followed out on one hand, just like an Arri S or Bolex, with no loss of stability. It was a surprise to see it there.

THREE: strobing. Now, there's a bugaboo! THE AMERICAN CINEMATOGRAPHER MANUAL notes 30 fps for 65 and 70mm panning. 32 fps was chosen for ease in calculation. A series of tables was made up to practice by stop-watch. Literally, boring repetition and timing of pans was part of the preparation. If you usually shoot 16mm and go wider for 70mm. projection, for instance, the diligent practice pays off.

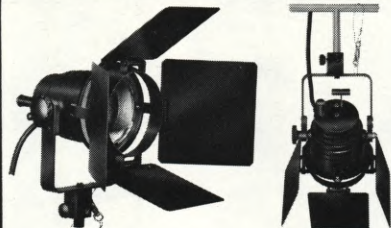
FOUR: new lenses. Well, that's what the job calls for. Todd-AO has an impeccable reputation: all informants seemed to trust their "T" stops without compensation. As for lens angles dictating choice, the ASC MANUAL is invaluable for correlation with lenses more familiar.

FIVE: that anamorphic element up front. It's best not looked at, it's so weird! Flaring was no real problem; seemingly less than "normal." John Farley, Todd-AO Camera Division, feels it is the coating. Those lenses, especially the 35mm, 50mm-500mm and 150mm macro were used in rugged, natural lighting conditions: mountains, crystalline ice structures, aerials, back-lit snow forms, long panning zooms backlit and varied light, and on blinding snow "from the hip."

SIX: weight and balance. 200' magazines and the 35mm lens, the widest available, but equivalent to 18mm in the standard 1.85 format, were used for hand-held action. The dynamics between man and camera were excellent. The balance was perfect. The camera with lens, matte box and magazine could literally be balanced on one finger at the fulcrum below the Arri grip. This accounts for stability and control, despite severely reduced finger space.

SEVEN: projection format. Now that is intimidating! If you go to commercial movies and sit within the seventh row you know that all focus problems can not be solved by yelling at the projectionist. Open up: focus, focus, focus and don't count on depth of field to forgive. In fact, don't count on

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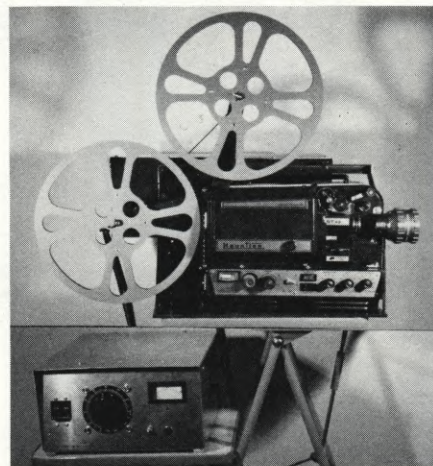
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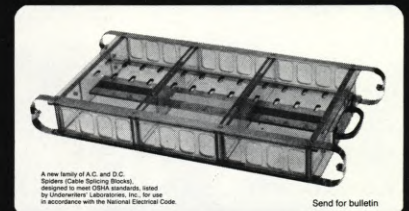
anything but the ability of your skill to control all manageable problems. Not having seen a film projected under such conditions (remember, 50' x 22', with audience 40' away), one can only use creative imagination to solve framing and action-flow problems. That's not easy. For instance, when prevailing conditions give you only two hours to put a "soaring eagle" in the can, you feel your ability to cope is stymied by the mind-boggling prospect that the director wants a twenty-foot eagle on the screen. What a relief when the report from dailies says they have enough! Contemplation of the projection format can be a genuine stoker too! Imagine flying down a hill on skis with your mind's eye going through the viewer's perspective. Earth flies by, the horizon tilts, plummeting downhill, rush masses, trees flying—ski to an edge and feel the next stop is oblivion. This experience was such a rushing trip that I became turned-on to skiing in the trees, bursting the lens through rime-encrusted branches, and finding more and more to startle the viewer—it was scripted as a THRILL RIDE. This probably was overdone, because Bob Marona said, "If we used some of those shots, they'd have to be subtitled, 'this is used some of those be subtitled, 'This is not a fake.' "

### SUBSIDIARY PROBLEMS

There was a crew to be secured. The first assistant cameraman is of paramount importance, necessarily so when using unfamiliar equipment. It's well if you've worked together and he respects your results and work habits—probably eating and drinking habits too, if it's Tim Wawrzeniak. It was. We were on a National Geographic/Wolper shoot together in Peru (see *AMERICAN CINEMATOGRAPHER* articles on "JOURNEY TO THE OUTER LIMITS", January, 1974.) Anyone who proved to be a stalwart of competence in the high Andes, with four cameramen to mess things up, certainly could handle one-man shooting in the State of Washington. A good rule in looking for team members: always get the best; if possible, better than you are.

Aside from needing the finest possible assistance, winter shooting often entails extreme conditions and relative isolation from normal support systems. All problems must be anticipated. This was tested during the shoot. The speed with which the project had to be completed, coupled with vicious weather, wind, sun-eclipsing cloud cover, cold, and logistical machinations contingent on the above, meant that every shot had to count. And, it must be grabbed in the briefest conceivable time. Winter shoot-

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ing necessitates speed. It's not just the cold. Exposures ranged from using NDs to only one stop left in a matter of hours. Aside from meeting all issues with practiced alacrity, Wawrzeaniak and our key grip, Kurt Young, proved to be amicably tolerant when I really didn't know how to use them effectively, or knew what I was doing. No equipment breakdown occurred, despite below-zero cold and rapid changes of location to catch malevolent weather in a weak moment. Shooting eagles was like being on a *CINEMA VERITE* team always chasing the action. Set up equipment. The cameraman and assistant would cradle camera or O'Connor 100, tearing down dirt roads in the back of a truck, jump out, run to a knoll, spot an eagle, shoot it (if it comes within range), run back to the road, get picked up, and off again. How else do you get a 20-foot eagle in two hours?

### RESPONSIBILITY

To continue on preparation: responsibility is paramount. When you rent from a house such as Todd-AO, you have confidence everything is going to be right. But if something is not, it's the D.P.'s responsibility, not theirs. There are no excuses when dailies are screened; that's what you did—the moment of honesty in film. Hence, it was imperative that tests were run with film on lenses and bodies to be used. Wawrzeaniak, living in Santa Monica, was entrusted with this. My home, Silver Plume, Colorado, is awkward commuting distance to Todd-AO. The results were checked. Responsibility is whose head gets chopped if something goes awry.

### SOMATIC PREPARATION

Shooting, especially the kind of camerawork required by Ed deMartin, director of "ABOUT TIME," is a sensual (physical) activity. It is assumed that all one's creative intelligence, skill and experience will be brought to a job. That requires deliberate orientation to the assignment. One is inclined to think of that area as being more obvious than the state of the cameraman's body. Some shoots are no less exacting in body control than a performance in dance—certainly true in tripod movement. Applicable to sound, too. I first realized the sense of dance watching Larry Johnson wield his shotgun mike, with Cameraman Dave Myers shooting "The Grateful Dead" at Woodstock.

Hand-held camera work requires control and, in this case of Todd-AO anamorphic, strength and the ability to relax with the weight. It is not enough to condition the arms. Hands, wrists,

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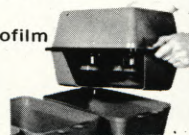
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and the whole body must work as a unit. One easy way to insure the requisite supple strength is climbing 100 feet each day on a rope—arms only—with the rest of the body in coordinated rhythm. Yes, for skiing, mountaineering, or other rugged activity, the legs must carry and act as stabilizers. Jogging or any kind of deliberate exercise seems not only boring, but ridiculous to the point of being useless. A personal judgment, of course. Yet, the key to controlled strength is in the trunk; precisely, in the stomach muscles.

It can be said that I can afford to be so cavalier because I live in a mountain chalet at 10,000 feet in the Rockies, and climb or go ski-mountaineering almost at will. Perhaps. But, I came to those conclusions long before living in such an advantageous spot. Maybe it's basic laziness.

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High mountain filming seems to be a difficult thing for some cameramen to master. Exposure meters have a tendency to mislead; incident readings may be the greatest culprit. It is hard to isolate specific preparation for quality footage on snow, especially in the mountains. Experience, including an apprenticeship with an accomplished cinematographer on snow is probably the most adequate. Summit Films of Denver is an excellent example. (See *AMERICAN CINEMATOGRAPHER*, Corbet, "A NEW WAY OF SEEING... A FRESH WAY OF FILMING", April 1970, and Brown, Fulton, "ATLANTA 70—NZURI: EAST AFRICA", August 1970.) Roger Brown and Barry Corbet probably have had greater effect than most upon the select field of sponsored action/adventure films. To say more than a great deal was learned (absorbed) from association with them and Bill Trautvetter, would be to delve into a lengthy analysis of various meters, lenses and light properties, shutter angles, calculations and whatever is the knack or connoisseurship of disciplined eye/mind.

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Aerials of the North Cascades, Washington, hold a key place in DMA's film "ABOUT TIME". The quality had to measure up to the work of the primary Director of Photography, Jack Priestley, whose credits include "MOBY DICK", "CINERAMA" and "ACROSS 110th STREET". He shot the bulk of "ABOUT TIME" in the spring and summer. Preparation for the aerials was threefold: ONE: experience, TWO: imaginative planning for the specific need, and THREE: finding the appropriate

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pilot, aircraft and camera mount.

ONE: Experience breaks down into several categories. My record here seemed sparse, and included mainly follow-shots of skiers and some scenics from choppers. This was supplemented by a fair amount of time in a helicopter and a great deal of screening unedited aerals. At such screenings, with four cameramen present, serious criticism can be unrelenting. At minimum it is educational: exposure settings (you usually tend to open wider than reflective reading indicates), use of zoom (can be effective, but fraught with great hazard), and using the aircraft as a dolly, etc.

Knowledge of one's fear is another factor of experience. This may seem strange for a professional alpine guide to bring up. But fear of falling, when held by your own ability, and fear when being flown around the mountains, are categorically different. For instance, going up to pick locations in the Bugaboos, British Columbia, some of North America's most vertical topography—a place where I had climbed and guided—I was unnerved by the confined spaces in which the chopper had to spiral to gain 6,000 to 7,000 feet of altitude. The only satisfactory response seemed to be to start shooting. Then reality would cease at the viewfinder.

TWO: Fulfilling scripted requirements cannot be left to impulse or escape. Prior to getting on location, read the script, study the shot schedule with its notes, and discuss the input with the director about what's needed. Time should not be discounted as an element in the fermentation of such plans. Time was allowed for observation of two favorite eagles, climbing to watch and meditate from heights, and review of aerial footage. If you can program dreams, do it—and that from the viewer's seat. The use of footage governs its shooting. Notes for further review with the director are useful. The frenetic pace of location shooting can bounce the best-laid plans from memory.

THREE: After much discussion, we decided upon old friendly, the DC-3. The aerals were to be point-of-view for that now-infamous eagle. The DC-3 simulated the soaring quality better than a chopper.

Using an eight-party phone in the mountains west of Silver Plume, Colorado, to arrange logistics between DMA on the East coast and contacts in Seattle, can be awkward. Add to that the anxiety of trying to explain East and West how critical is the pilot's skill—results in Kierkegaardian Fear and Trembling (Sickness Unto Death came later). ANGST was not the passing



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through the narrows of birth as its etymology suggests; only destructive foreboding.

As it turned out, a Seattle firm had a well-loved and preserved DC-3 pilot. All through what might be called a "training discussion", he kept nodding with assent. Every requirement was defined several days ahead of time so the pilot would have time to mull over, plan and imagine how he would serve the camera. The problem is much different than for a chopper pilot. In a DC-3, the camera, or "eye" of the craft is at the back door, with limited forward movement. Ideally, it would be mounted in a nose-bubble, with optical glass.

The airline's mechanics worked with Kurt Young to secure baby legs, dead-eye chained in the open door, as close as possible to open space. A wind deflector was fabricated and attached to eliminate buffeting on the 50-500mm anamorphic lens. Safety cables secured cameraman, Wawrzyniak, and Young. Ed deMartin gallantly wandered about, relying on the intellectual conviction that no one could fall out past the tripod!

Dramatic aerials of mountains require flying in and around them. Ridges and abysses must be filmed close-on, or they tend to flatten into mere curiosity pieces, like astronaut photos. To accomplish this, a judgment must be made about the pilot. The most useful relationship is for the cameraman to push the pilot for more and more exciting shots, with the confidence that he will not violate that zone beyond reasonable safety. It cannot be emphasized enough that mountain flying is the most testy of sports, requiring specialized training and experience. At least two extraordinary alpine guides and cameramen, of my friendship, are now a double amputee and paraplegic, respectively, because their pilots were not good enough.

An eagle, especially the golden, soars on up-drafts at ridges. The North Cascades are supremely Alpine in winter; sharp ridges, like the cutting edges of creation. They had to be filmed: closer, closer. Wow! Beautiful! Fantastic! Hang on, getting it, *wow!* Visual orgasm! Oop, where did they go—hey, I'm floating—*wham!* Thud on an empty galley—*oop*, up again—light-meter glances off face—*crunch*, knees to the deck (don't bother praying, Groesbeek, get that camera back in business). Pull back to find. It's passed. Turbulence was like a space-age exercise in weightlessness. Only by repeating that Sickness Unto Death over and over again, ridge after ridge, and leading the plane as much as possible, could the drop-aways be gotten. The pimples of terror on the face of fear became the criterion of

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**CONCLUSION**

16mm film-makers, especially documentary and action/adventure crews, seem to have a not-unfounded reputation for free-wheeling (sometimes unprofessional) approach to film. When they go to the movies, they often experience frustration, because they know how they could enhance the visual/dramatic impact, if only given the opportunity. Maybe so, maybe not. But, big commercial production houses tend not to seek out independent film-makers for even second unit work. Much of the justification for this lies with the 16mm men themselves. They should give up their flippant descriptions of using gaffer tape to solve all, or talking of creating innovative modifications of equipment with only screwdriver and pliers. Most of that is pure fiction. Sure, 16mm men are resourceful; that's how we survive with one to three-man crews and small budgets. In reality, what the 16mm men are trying to say is that they have a valuable, unfettered approach to film. But, there must be a better way.

16mm equipment has its restrictions. The opportunity to use 35mm and 70mm gear is pretty much controlled by big money, which tends to be conservative. One justification for this article is to say that the ability to jump from 16mm to Todd-AO anamorphic, for instance, is not unusual. Professionals whose experience may be limited largely to 16mm are inclined to measure up while infecting larger formats and big budget films with the realistic excitement/thrill, penetration and sensitivity often found in 16mm. Exercise of professional, disciplined skill will prevail. ■

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AURICON Pro 600 new MA-11 amplifier, 17-85 zoom lens, 2-400 ft mags., extras, \$2995. Arriflex, 2 mags., sync generator, 25, 50, 85, 18.5 Angeneiux, 35 Super Baltar, 35 to 140 Angeneiux zoom lens with wide angle adaptor, offset motor base, Arriflex tripod, \$3995. 2 Jan projectors zoom lens, \$250. ea. 35 Holmes sound projector, \$550. 16 Sync Jan projector 2 x 400 recorders, 1 x 400 3-channel dubber all with selsyncs, \$5500. ElectroVoice 642, \$95; 668, \$275. Moviola Green 16-16, \$1800. O'Connor 100 w/legs, \$695. Moviola, 2-gang 35 synchronizer, \$75, 16 table-top, Moviola, \$495. Magnasync 2200 recorder/reproducer, Brand new, \$2200. FILM ASSISTANCE, 1949 N.E. 147 St., Miami, Fla. 33161.

BIG BARGAINS, BIG SAVINGS, ARRI S16 V/S motor. Complete package includes: matte box, motor, case, 3 lenses, 2-400 mags. and case, 1 torque, 1 battery plus 11 other items. Only \$2850. CANON SCOOPIC 13-75mm lens, accessories, case, \$1000. BEAULIEU R-16. 12.5 to 75mm, Automatic, \$1100. And much, much more. Lenses, lots of filters, editing material, sound, lighting globes, etc. Write or call for list. CHROMA CORPORATION, 106 Howell St., Dallas, Texas, 75207 (214) 651-1601.

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## STUDIO PRODUCTION EQUIP.

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NAGRA recorders and accessories, in any condition. We pay top prices for used Nagra III or Nagra IV. AUDIO SERVICES CO., 565 Fifth Avenue, New York (212) 972-0825.

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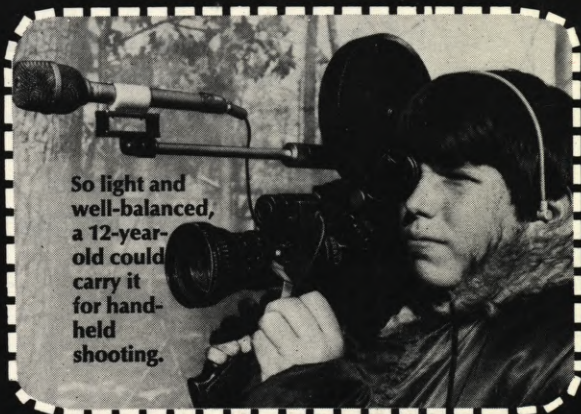


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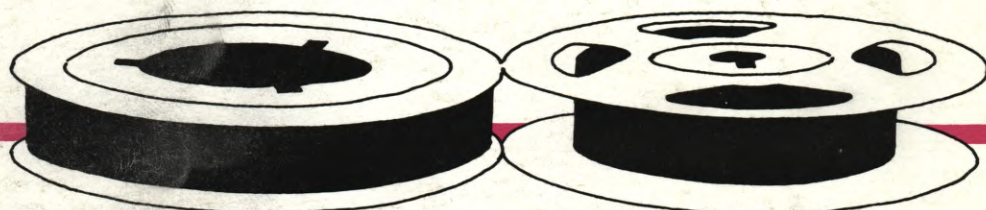


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