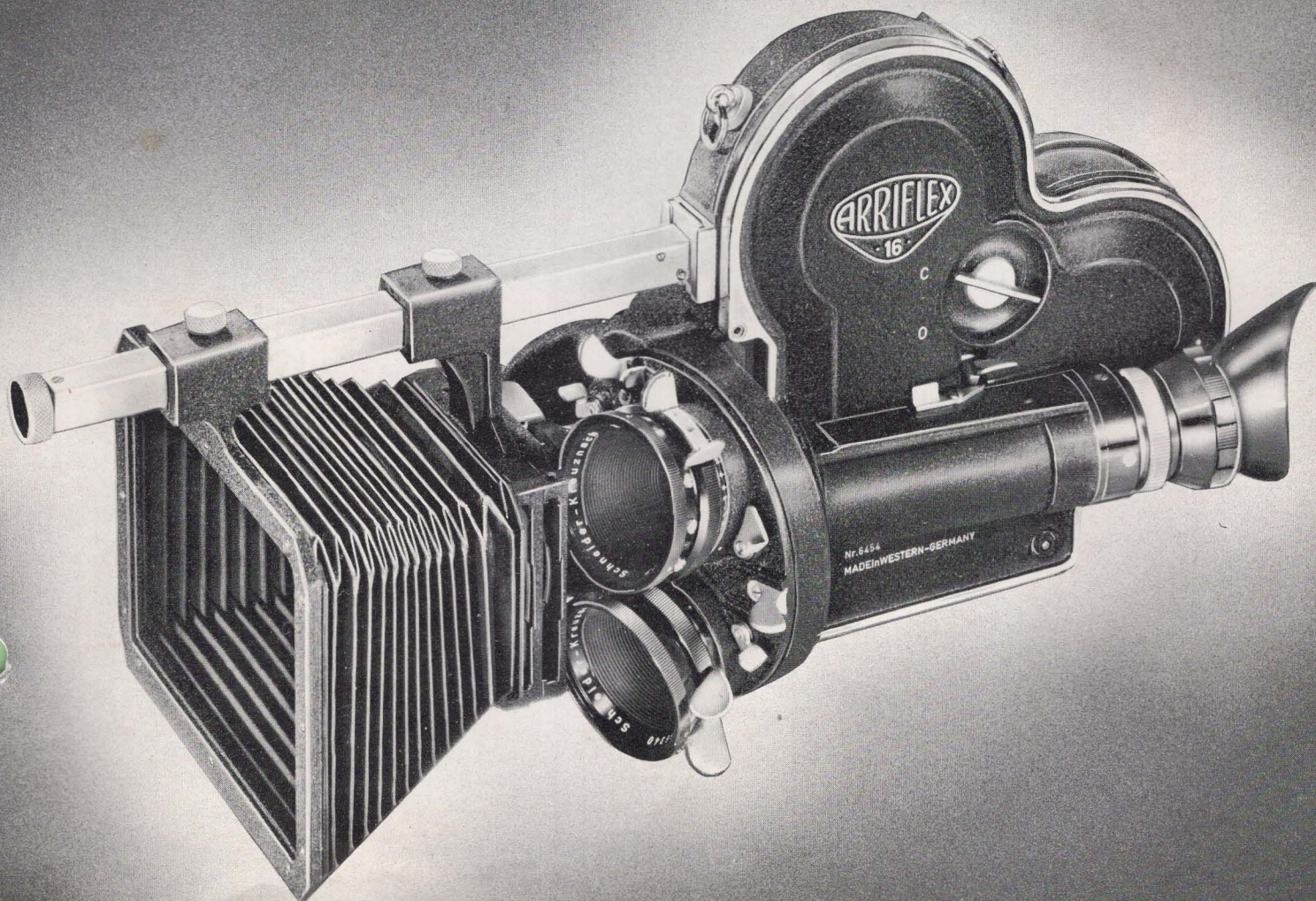


The most  
**versatile**  
professional  
16mm camera

# ARRIFLEX 16<sup>®</sup>



The Arriflex 16 is the most important camera in the 16mm professional field. It is a masterpiece of design and precision craftsmanship; it offers so much more than other existing equipment that no comparisons can be properly made.

The Arriflex 16 was developed to bring to 16mm work all of the facilities and picture quality available in 35mm cinematography. That this objective has been achieved, is understandable in light of the fact that Arnold & Richter has been known — since 1917 — as Europe's leading manufacturer of professional cine equipment. Arri cameras, film lab equipment, printers, etc. are used throughout the world.

The Arriflex 16 is today the most wanted professional 16mm camera in America. The reasons for this preference become quite clear when you consider the many features and advantages it offers.

To start with, the Arriflex 16 is a hand camera. It weighs only 6½ pounds, and has an ingenious contour hand grip that makes steady hand-held filming easy. Then with the simple addition of Arri accessories, the Arriflex 16 can be built up to handle every requirement in cinematography, including lip-synch and sound stage double system recording.

To examine an Arriflex 16 — to handle it — to use it on the set or on location — only once — is to become a confirmed Arriflex enthusiast.

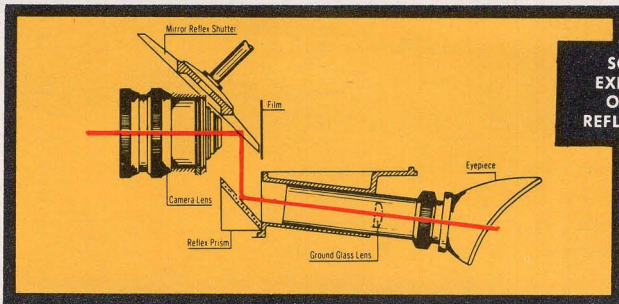
## how the arriflex mirror reflex shutter works

The Arriflex shutter rotates at a  $45^\circ$  angle between the lens axis and film plane. The front of the shutter is an optically flat, surface-coated mirror. When in "closed" position, it reflects the image into the optical system of the finder. In "open" position, the image passes directly onto the film for the exposure.

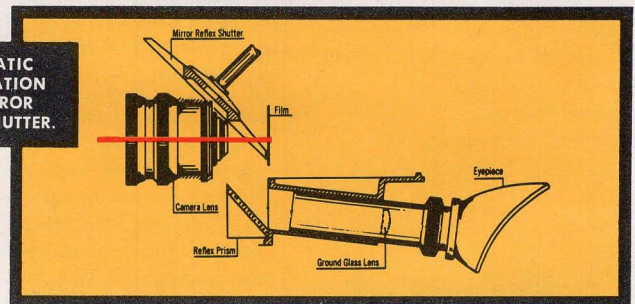
You will note that the Mirror Reflex System of the Arriflex does not beam-split the light, but makes *all* of the light transmitted by the lens available to both the finder and the film — intermittently. This insures a brilliant image in the finder — even when the lens is stopped down — as well as correct film exposure. The Mirror Reflex System was invented and developed by Arnold & Richter.

## thru-the-lens focusing and viewing

The advantages of thru-the-lens focusing and viewing — even while filming — are well recognized. They eliminate parallax problems, and the need for multiple finders and masks, and rack-over devices. You can frame accurately, and follow-focus critically, through the very lens that is shooting the scene. And you see the image continuously — right side up and uninverted — through a highly corrected optical system, magnified 10 times. This applies to every lens you use, whether Wide Angle, Standard, Telephoto, or Varifocal. What you see, you get — and what you get, you see!

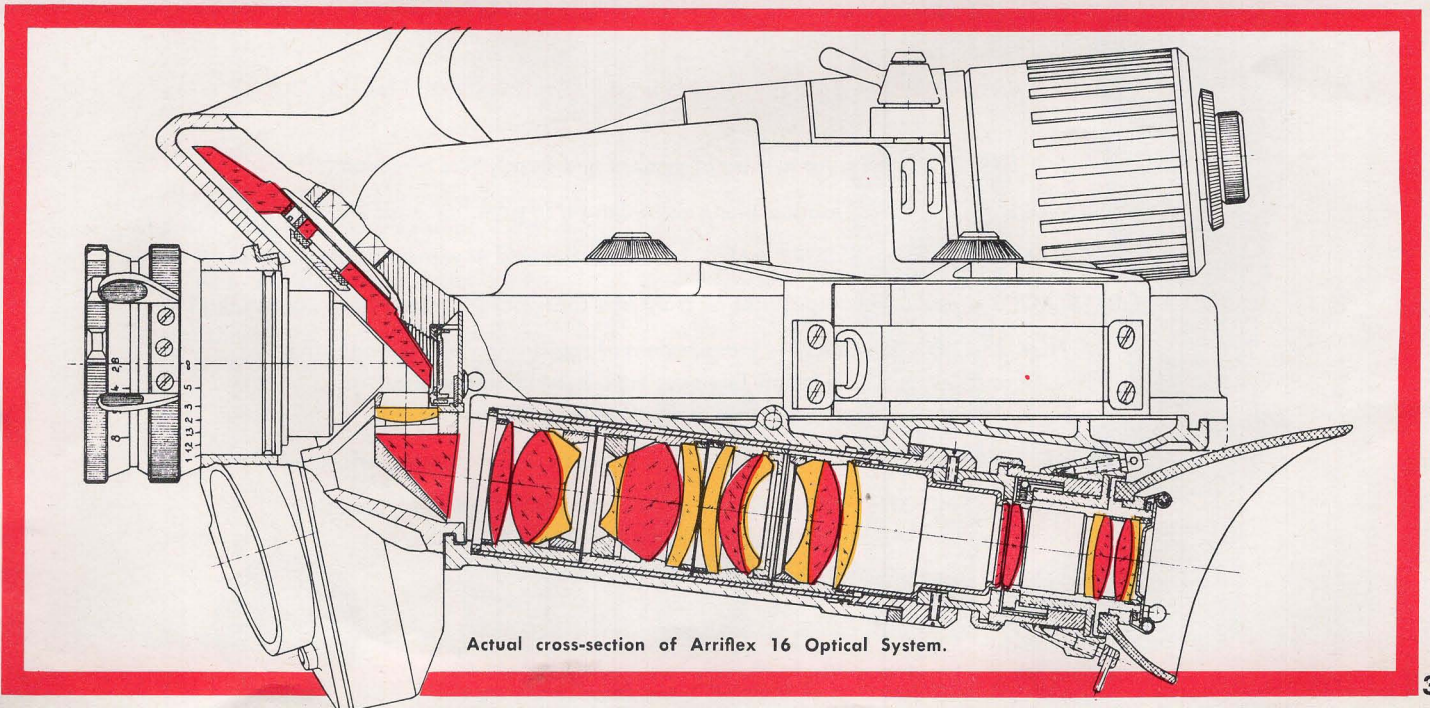


Shutter 'closed' — all light passes through the viewing system.

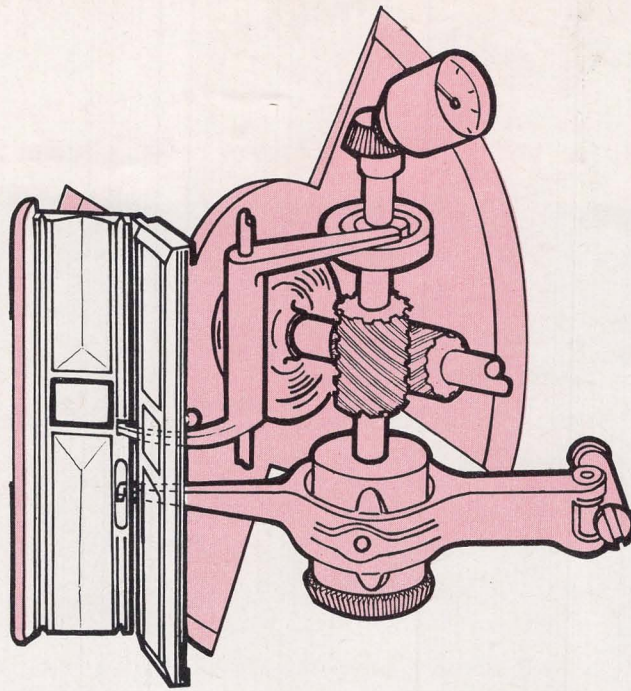


Shutter 'open' — all light passes to film

SCHMATIC  
EXPLANATION  
OF MIRROR  
REFLEX SHUTTER.



Actual cross-section of Arriflex 16 Optical System.



### precision film gate and registration pin

The film gate is, without doubt, the most important component of a professional movie camera, and the registration pin, a most essential feature.

The function of the film gate is to hold the film perfectly flat and absolutely steady during the exposure, and to permit film movement from frame to frame without scratching or otherwise marring the film.

The registration pin in the Arriflex 16 is located in the ideal position — in the bottom frame line! It enters the sprocket hole, engages the film, locks it in position, and holds it rock-steady for the entire duration of the exposure! During the closed-shutter cycle, the registration pin disengages the film and the independent film transport claw mechanism shifts the film to the next frame.

### here are some of the quality features of the arriflex 16 film gate:

- **EXTRA LONG** — for precise alignment and steady film direction.
- **SIDE PRESSURE RAIL** — spring loaded along entire length of gate, for added lateral stability.
- **BALANCED REAR PRESSURE PAD** — holds film flat and in correct focal plane.
- **CROSS STAGES** — around film apertures on front and rear sections prevent film "breathing".
- **FILM TRANSPORT CLAW** — independent of registration pin. Engages film one sprocket hole below film gate from front (emulsion side), whereas registration pin enters from rear (base side).
- **SINGLE SPROCKET DRIVE** — accommodates either double or single perforated film.
- **MICRO-SMOOTH SURFACES** — gate is made of stainless steel, precision lapped, chrome plated, and highly polished. All surfaces in contact with film are microscopically smooth.

500x microphotographs demonstrate the precision finish of the Arriflex 16 Film Gate (left), as contrasted with film gate finish of other well known 16mm camera (right).

## divergent three-lens turret

This unique turret design permits any three lenses, from extreme wide angle to 300mm telephoto, to be mounted simultaneously — without mechanical or optical interference — and brought into use by simply revolving the turret by means of Turret Grips. The Arriflex 16 accommodates all lenses, from 11.5mm. extreme wide angle, to the longest telephotos. The Turret Grips are coded and help identify the lens-in-use from filming position.

## instant-change lens mounts

Arriflex instant-change lens mounts have large flange surfaces to insure positive seating, precise flange-focus and alignment. Tolerances are kept to within .0008 of an inch. Lenses can be changed from Arriflex to Arriflex without need for readjustment. Each Arriflex lens has a convenient follow-focus grip. The entire focusing range of the lens is covered by moving this grip in an arc of less than 160°.

(For complete selection of Arriflex lenses, see price list.)

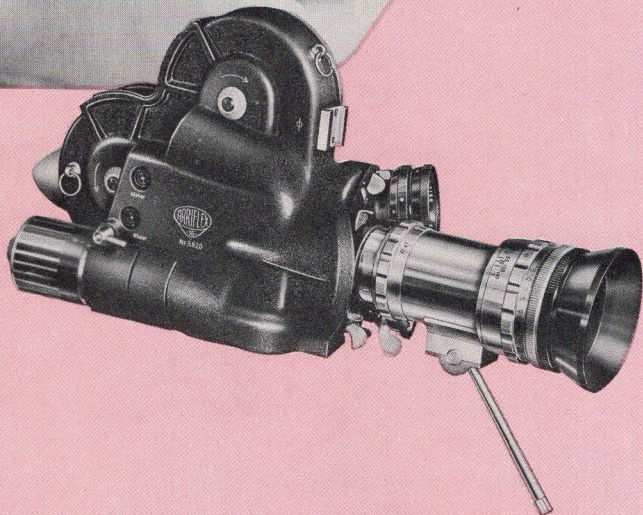
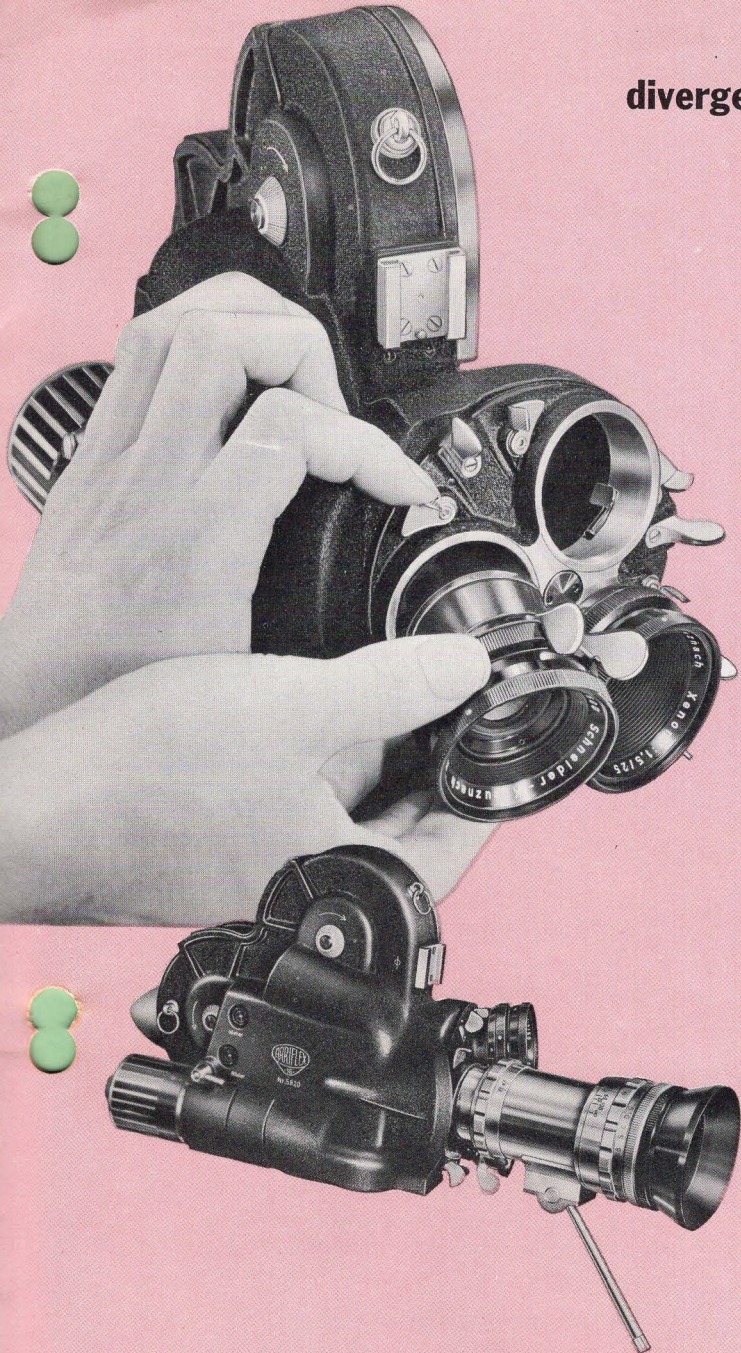
## berthiot pan-cinor varifocal lenses

No movie camera is so well suited for these lenses as the Arriflex 16 with its reflex mirror shutter. The "zoom" action can be observed through the camera eyepiece. No external finder needed. The Pan-Cinor "70" can be mounted on the turret simultaneously with other lenses.

Model 70 — f/2.4, 17.5mm to 70mm

Model 100 — f/3.4, 25mm to 100mm

Model 150 — f/3.8, 38mm to 150mm



## kilfitt tele lenses

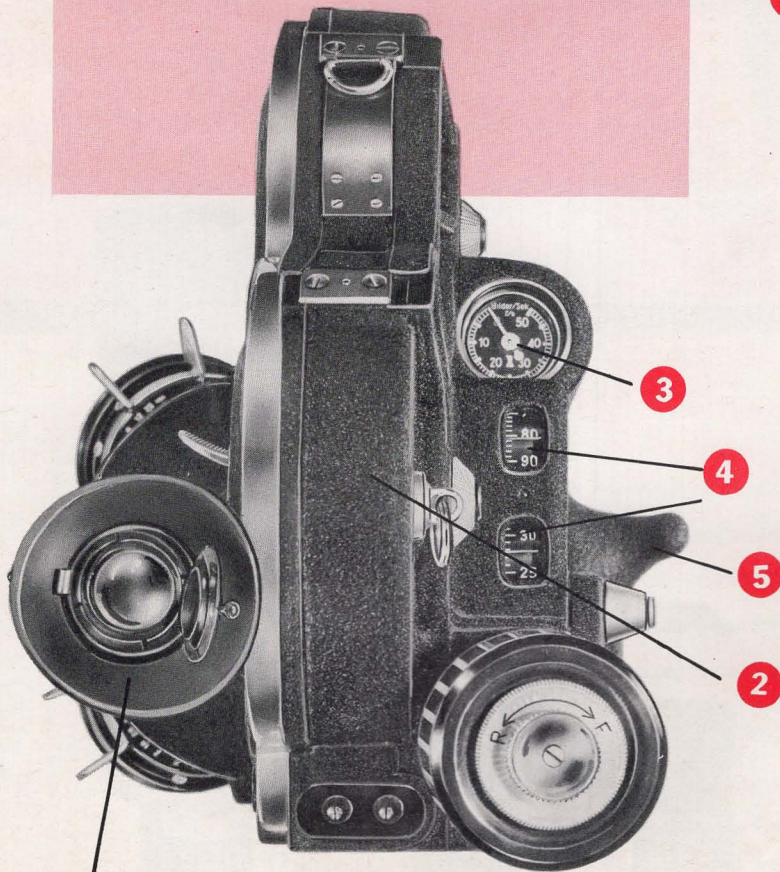
For nature and sports photography, wherever tele lenses are needed, Kilfitt Kilar lenses are recommended. They have won world-wide acclaim. Kilfitt long focus lenses are available from 90mm through 600mm. A complete Kilfitt brochure will be sent on request.



## electric motor drive

Electric motor drive is essential in a professional camera, because it alone can afford continuous, uninterrupted filming, and can supply constant power. The Arriflex 16 is supplied with a variable-speed, 8-Volt (wild) DC motor as standard equipment. This motor can be operated from a compact, light, rechargeable battery pack, dry cell batteries, or from 110-120 Volts AC by means of the Transformer-Rectifier Unit. The speed of the motor is regulated with a continuously variable rheostat built into the motor housing, from 0 to 50 frames per second. There is also a switch for forward and reverse filming.

The standard motor is quickly removable, and can be easily interchanged with the DC Governor-Controlled Motor, the AC Synchronous Motor, or the Animation Time-Lapse Mechanism.



● The Arri eyepiece is designed for comfortable, accurate viewing and is rotatable to fit either right or left eye. Full range diopter adjustment facilitates viewing without eye glasses. Hinged door closes viewer when camera is used for remote control filming.

## other arriflex 16 features

These important features contribute immeasurably to the versatility of the Arriflex 16. They serve to demonstrate the amount of planning and study that have gone into the design of the Arriflex 16, to create a well nigh perfect instrument for professional 16mm filming.

- 1 400 foot external magazine**  
for 400-foot darkroom loads or 200-foot daylight spools (see page 9).
- 2 internal film capacity**  
50 and 100 foot standard daylight-load spools.
- 3 tachometer**  
indicates operating speeds from 0 to 50 frames per second. The tachometer is coupled to the film-drive, to assure absolute reliability of frame speed, regardless of motor used, or other conditions.
- 4 footage and frame counters**  
operate both in "forward" and "reverse" filming.
- 5 contour hand grip**  
provides a natural and firm grip for steady hand-held filming.
- 6 matte box and filter holder**  
features adjustable front and rear standards and two stationary and one rotating filter stage. Accepts Arri Optical Glass Filters, Arri Filter Holder with Frame for 2" square Kodak Gelatine Filters, or Series VIII glass filters, with proper screw-on adapter ring.

## detachable neck strap

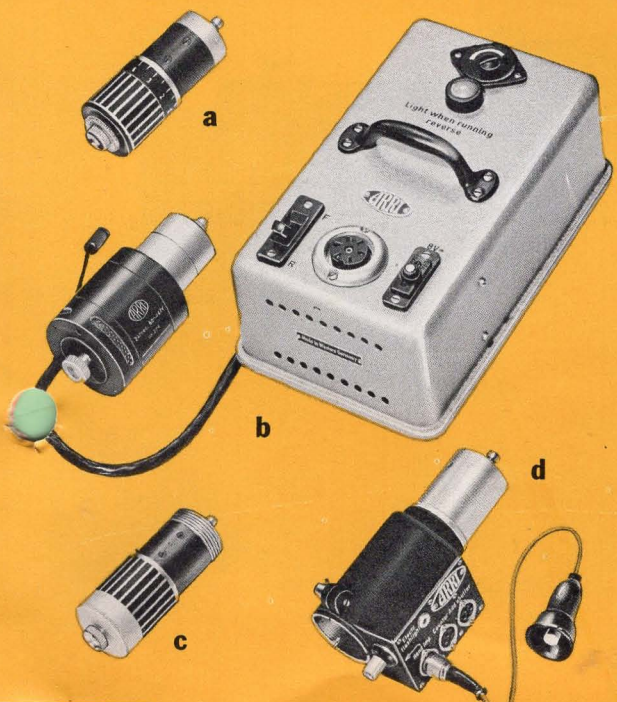
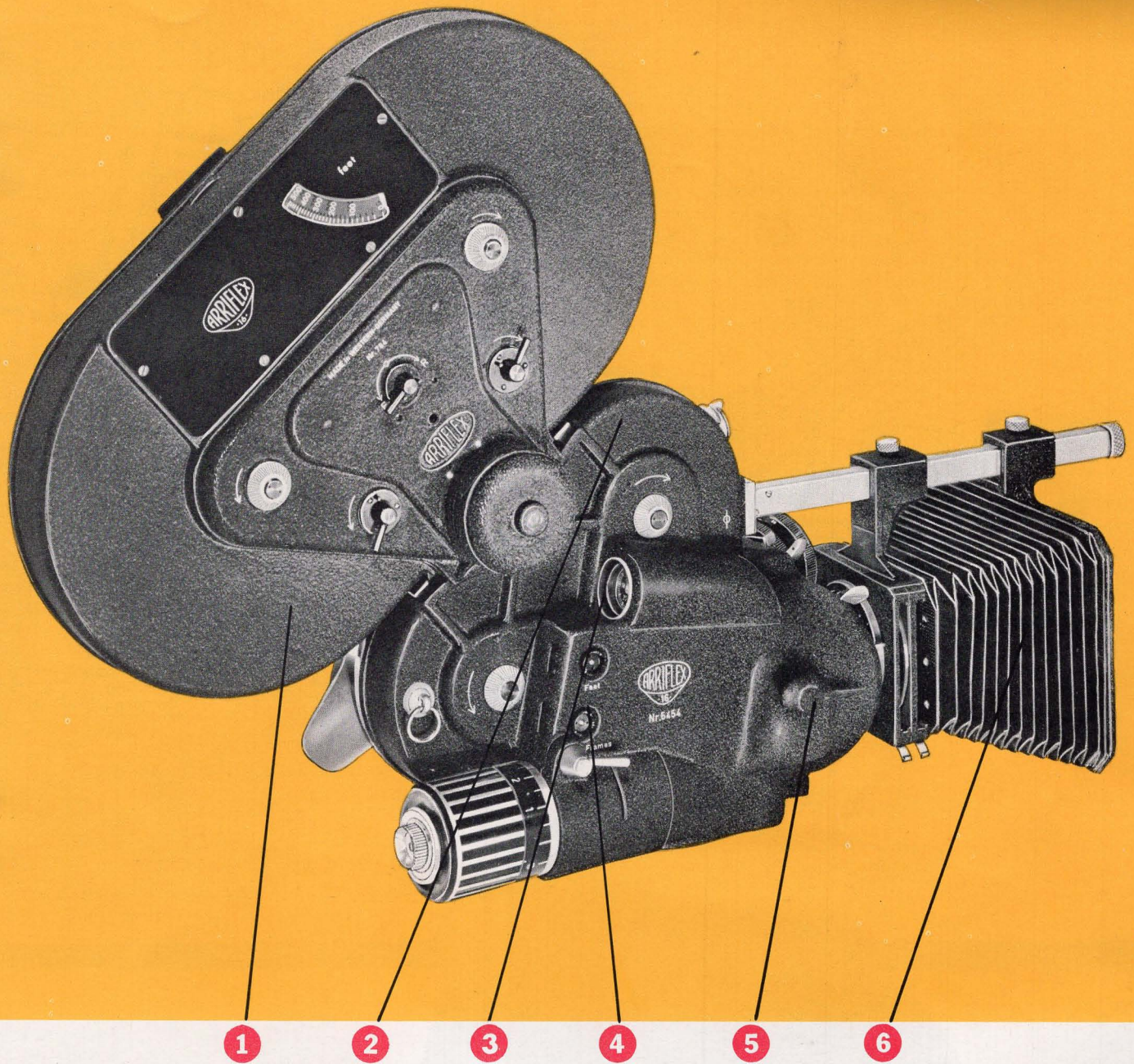
protects camera from accidental dropping when used hand-held.

## lightweight

camera with Matte Box (less lenses) weighs only 6½ lbs.

## motors for the arriflex 16

In addition to the Variable Speed (wild) Motor (a), these other motors are available to meet special requirements. They are easily interchangeable with the standard motor, and are likewise designed for "forward" and "reverse" shooting.



**synchronous motor (b)**

The Synchronous Motor operates on 110-120 Volt, 60 cycle, single phase AC (available for other frequencies on request). Its speed is absolutely constant, regulated by the frequency of the alternating current, and unaffected by variations in the line voltage. Because this motor operates without sparking, it is particularly suited for surgical films in the operating room. Note: The power supply unit of the Synchronous Motor includes a step-down transformer-rectifier, which delivers 8 Volts DC to the Torque Motor of the Film Magazine (see page 9). Weight of motor — 3 pounds; power unit — 10 pounds. Size of motor — 5 $\frac{3}{4}$ " long; power unit — 10-1 $\frac{1}{4}$ " x 5-11 $\frac{1}{16}$ " x 4-7 $\frac{1}{16}$ ".

**governor-controlled motor (c)**

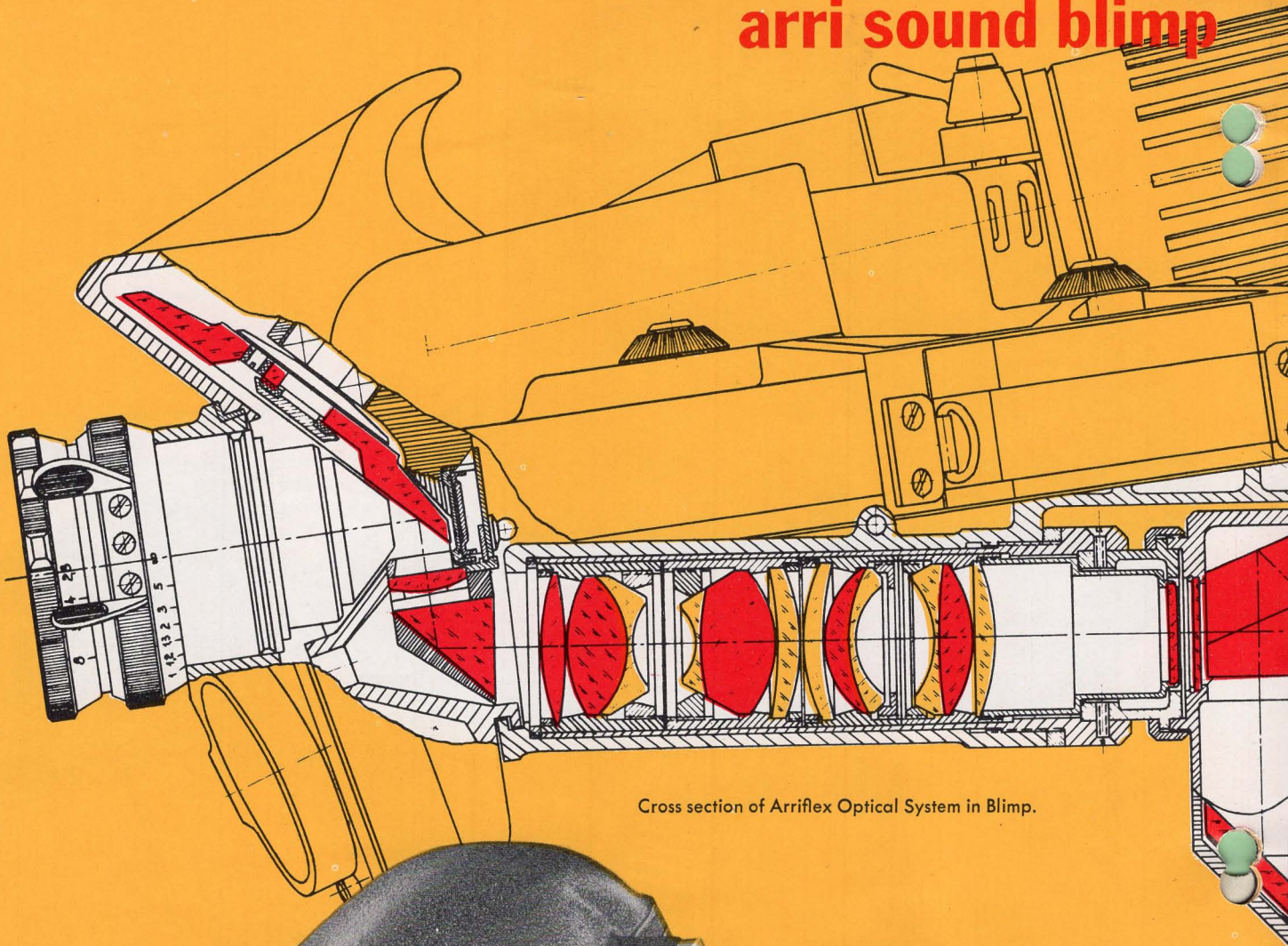
The Governor-Controlled Motor requires 8 Volts, DC power and is operated from the same batteries available for the Variable Speed Motor. Speed is held constant by means of an internal centrifugal governor, so that there is no deviation in rpm within a considerable voltage range. The outstand-

ing advantage of the Governor-Controlled Motor is that it permits constant speed operation where 110-120 Volts AC is not available for use with the Synchronous Motor. It is available in two types: 16 and 24 frames per second. It is identical to the wild motor in size, shape and weight.

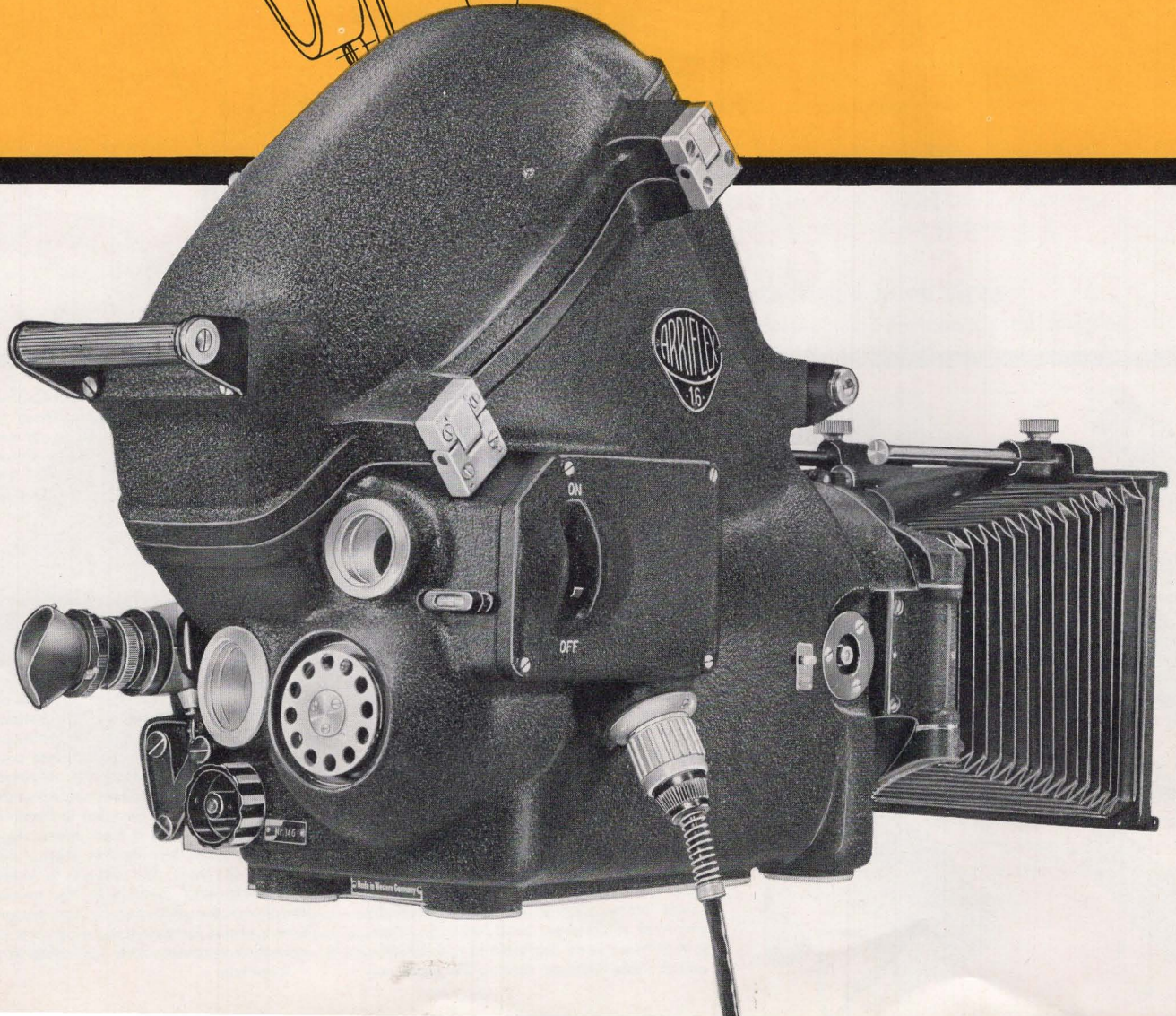
**animation and time-lapse mechanism (d)**

The Animation Time-Lapse Mechanism is inserted into the camera in place of a motor, and any of the three Arri motors can in turn be inserted into the device. It makes one exposure per impulse. This can be given either manually (release button on housing) or by remote control, supplied with the instrument, or by an intervalometer. There is also provision for connecting a remote frame counter (available as an accessory). In addition an outlet is provided for connecting an auxiliary shutter which can be mounted in front of the taking lens to shield it from excess light. The mechanism has built-in flash synchronization (X type) and accepts a standard Compur-tip cord. Besides titling, animation and time lapse photography, the mechanism is very useful for data recording and instrumentation purposes. Size: 6 $\frac{1}{2}$ " long. Weight — 2 pounds.

# arri sound blimp



Cross section of Arriflex Optical System in Blimp.





# for arriflex 16

The final tribute to the versatility of the Arriflex 16 is its demonstrated efficiency as a studio sound camera, with the Arri Sound Blimp.

The Blimp is constructed with the most advanced techniques of acoustical damping. Extremely sound-proof, it accommodates the camera with 400 ft. Film Magazine and Synchronous Motor. The Blimp Housing is made of strong aluminum alloy casting, precision-machined and black crackle finished. The internal walls are lined with ten layers of goat skin, sheat lead and foam plastic, covered with a top layer of grey corduroy.

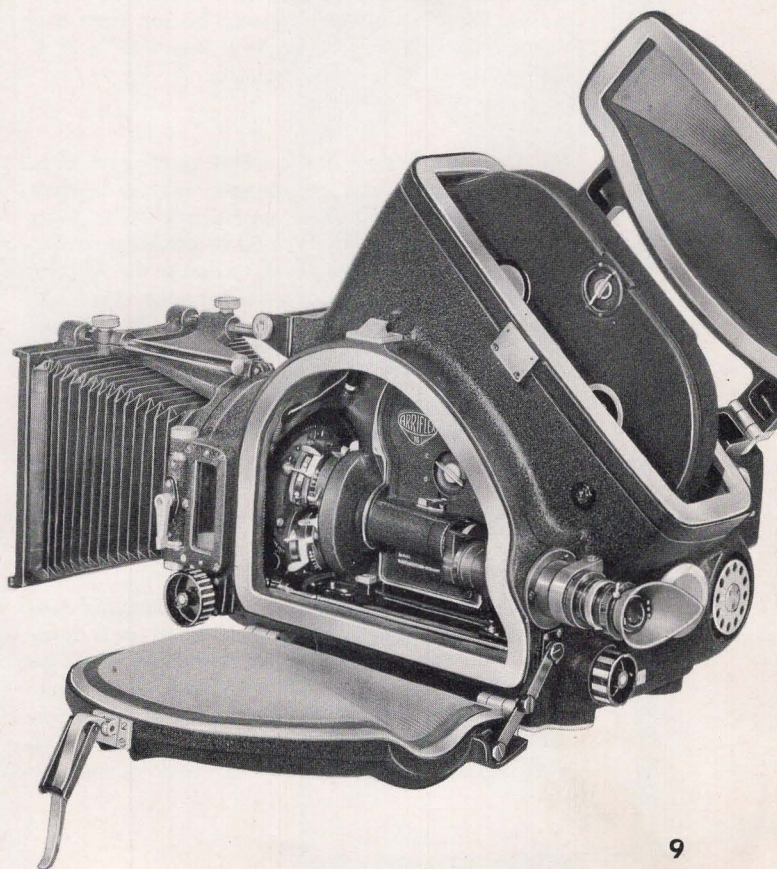
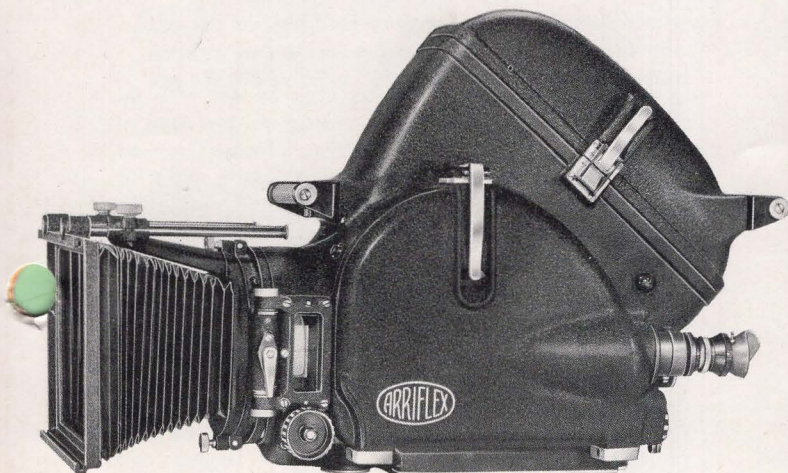
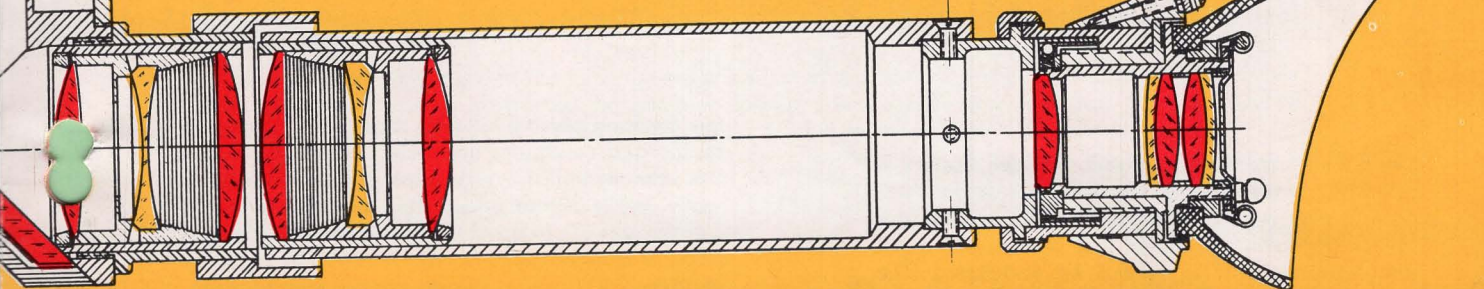
Three separate doors are provided for easy access to the interior — one, on top, for attaching the 400 ft. magazine; another, in front, for reaching lenses and turret; a third, on the side, for inserting the camera. The latter door is also used for loading film. All doors are sealed with foam rubber gaskets and are closed by means of ingenious "knee-action" clamp locks.

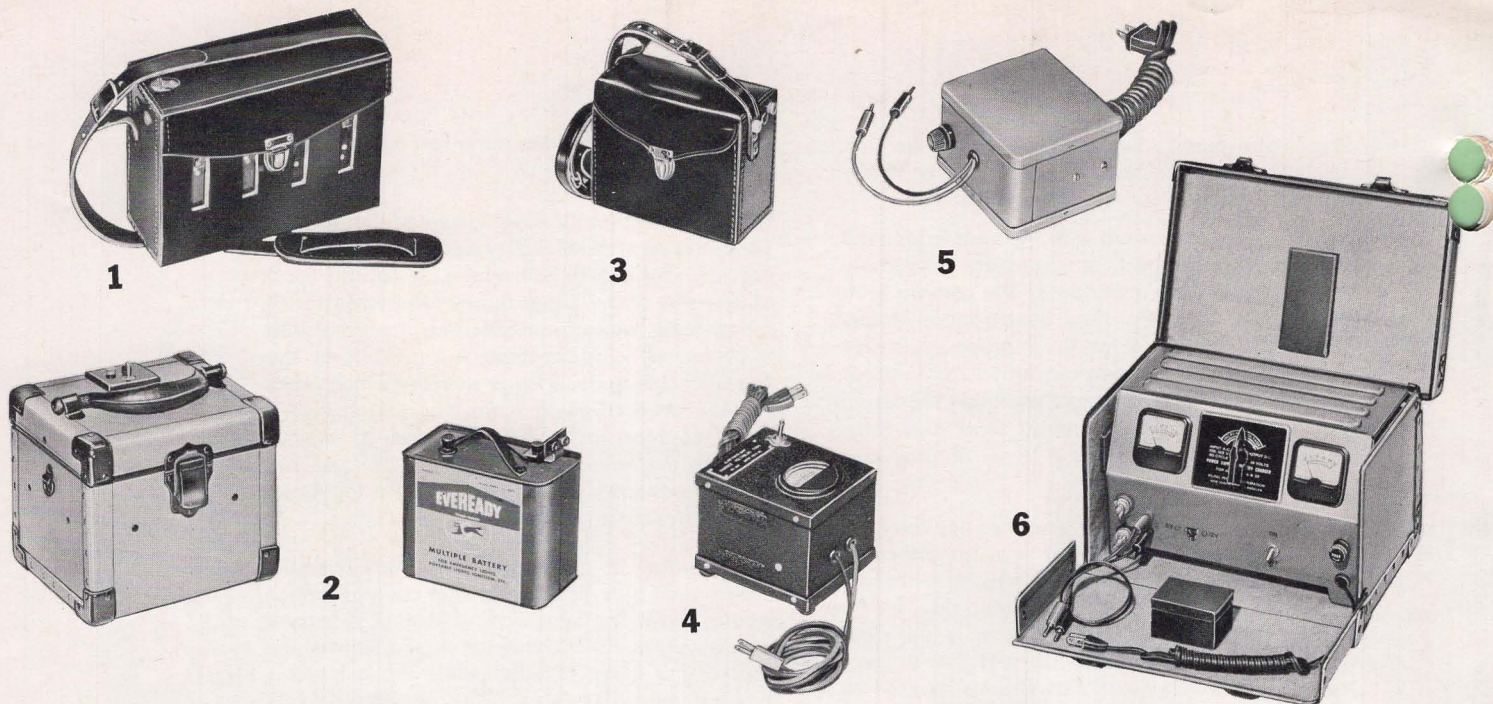
The camera is cushion-mounted on a base, "floating" on rubber bumpers; inserting or re-

moving the camera takes but a few moments and requires no tools.

The Mirror Reflex Viewing System of the Arriflex 16 is utilized in the Blimp by means of the Special Blimp Finder, which is included. A control knob at the rear of the Blimp permits the operator to follow-focus without an assistant; if an assistant is preferred, a focus knob is provided at the front-left side under a large window, which shows the oversized focusing scale. The taking lens is easily coupled to the exterior focusing mechanism, by engaging a rubber covered finger, between the follow-focus grips of the lens (no gears required around lens mounts).

One window at the rear of the Blimp permits observation of a geared footage counter (which is attached to the Synchronous Motor). A second window shows the tachometer. A pilot light at the rear of the Blimp pulsates while the camera is running. Two carrying handles permit easy mobility of the Blimp, which weighs 70¾ pounds, complete with camera, lenses, Synchronous Motor, and 400 ft. film magazine.





## power supplies and battery chargers

### 1. wet cell battery

The 8 Volt Lead Acid, non-spill, wet cell battery is rated at 6 ampere-hours, and will operate the Variable Speed (wild) or the Governor-Controlled Motor for approximately 2500 feet of film, at normal temperatures, before it need be recharged. The normal life of the battery is approximately 200 charges. Supplied in an acid-resistant Neolite case, with leather shoulder strap, and lined with foam plastic. The Arriflex 16 may also be run from a 6 Volt automobile storage battery. Size — 8" x 3" x 5½". Weight — 6 pounds 2 ounces.

### 2. dry cell battery pack

The Dry Cell Battery Pack offers packaged electricity on expeditions or wherever nightly battery recharging is impossible or undesirable. Consisting of 2 Eveready No. 715 7½ Volt or similar batteries in a fibre case, it has terminals to accept the Arriflex power cable and is wired to deliver either 7½ Volts in parallel or 15 Volts in series. Two No. 715 batteries in parallel will run the Arriflex 16 for 7000-8000 feet at normal temperatures. This unit can also be used with the Arriflex 35. Size — 9" x 9" x 8½". Weight — 18½ pounds (complete with 2 batteries). A single Eveready No. 715 or similar battery can also be used for driving the Arriflex 16. A little adapter is available to connect the Arri cable.

### 3. voltabloc battery

This nickel-cadmium battery of ingenious and new design, offers unique features of safety and durability. The hermetically sealed cells need never be refilled. The battery cannot be damaged by overcharging, or charging too rapidly. A built-in pressure switch automatically stops charging when full capacity has been reached. The Voltabloc may be

left for long periods of time in either charged or discharged condition, and needs no maintenance. It is virtually indestructible electrically and mechanically. While higher priced than other batteries, its advantages are so great that it has become the most popular power source for the Arriflex. Its capacity is about 2500 feet of film at normal temperatures, and it comes complete with leather case and shoulder strap. Size — 6" x 3" x 5¼". Weight — 4½ pounds.

### 4. voltabloc battery charger

A constant-potential charger, especially developed for the Voltabloc, is easily connected to the battery and requires no timing or control. The charging will stop when battery has reached capacity. Works from standard 110 Volt AC current. Size — 5¼" x 6¼" x 6". Weight — 5½ pounds.

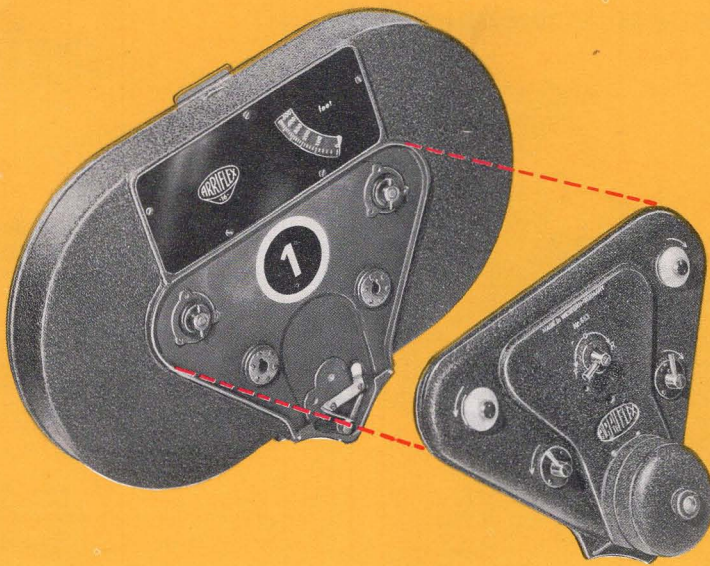
### 5. trickle charger for wet cell lead acid battery

A selenium rectifier charger unit designed for use with 110-120 Volt AC. Charges Arri 8 Volt wet cell batteries overnight. Size — 4½" x 4½" x 3". Weight — 2 pounds.

### 6. combination power supply and charger

As a power supply, it enables the use of the camera with Variable Speed, or Governor-Controlled Motor directly from 110-120 Volt AC outlet. Output — 1 to 20 Volts DC. Built-in controls and voltmeter permit selection of desired voltage.

As a charger, it can recharge all batteries. A built-in ammeter permits selection of rate of charge. Voltage selectors and voltmeter are used to set the desired voltage. It comes complete with a fibre carrying case. Size — 11½" x 7½" x 7". Weight — 11½ pounds.



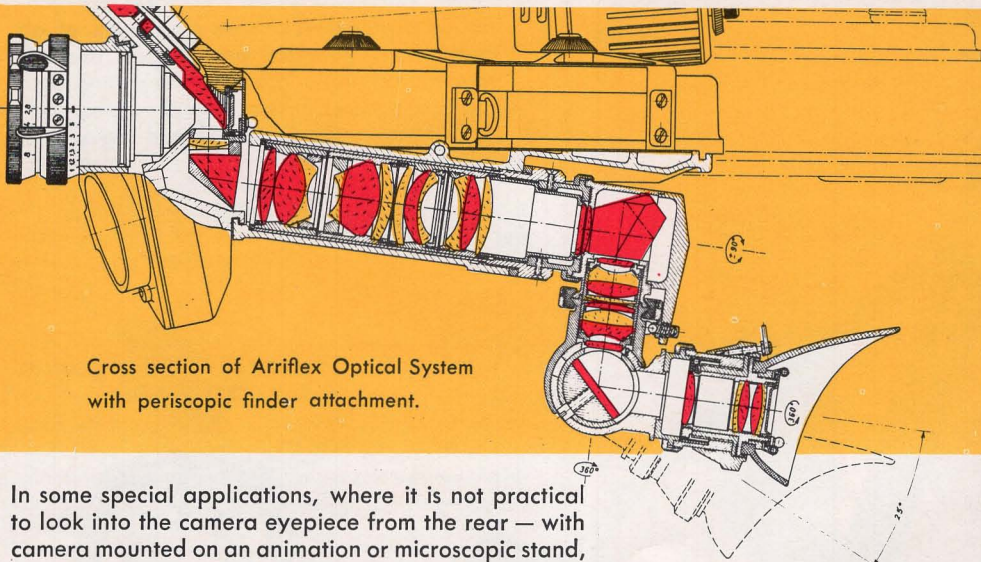
### 400 foot magazine

The Arri 400 foot Film Magazine for the Arriflex 16 is designed on the single compartment displacement principle for greater compactness. Its film capacity in Lab loads (on plastic cores) is in excess of 400 feet, and in daylight loads (on flanged spools) 200 feet.

A Torque Motor drives the take-up spindle, eliminating the necessity for take-up belts. This motor, supplied separately, is easily attached or removed from the magazine. It is readily interchangeable, and can be used with many magazines, hence only one Torque Motor is needed per camera. It can be set for "forward" or "reverse" filming. The Torque Motor operates on 6-8 Volts DC, supplied by either the battery packs, the Combination Power Supply-Charger, or the auxiliary supply included in the Synchronous Motor assembly.

As the magazine is attached to the camera, electrical contact is automatically made. Each magazine is numbered for purposes of identifying the emulsion load or the scenes filmed, and each magazine has its own footage counter. Magazine weight — 3½ pounds. Torque Motor weight — 1½ pounds.

### periscopic finder attachment



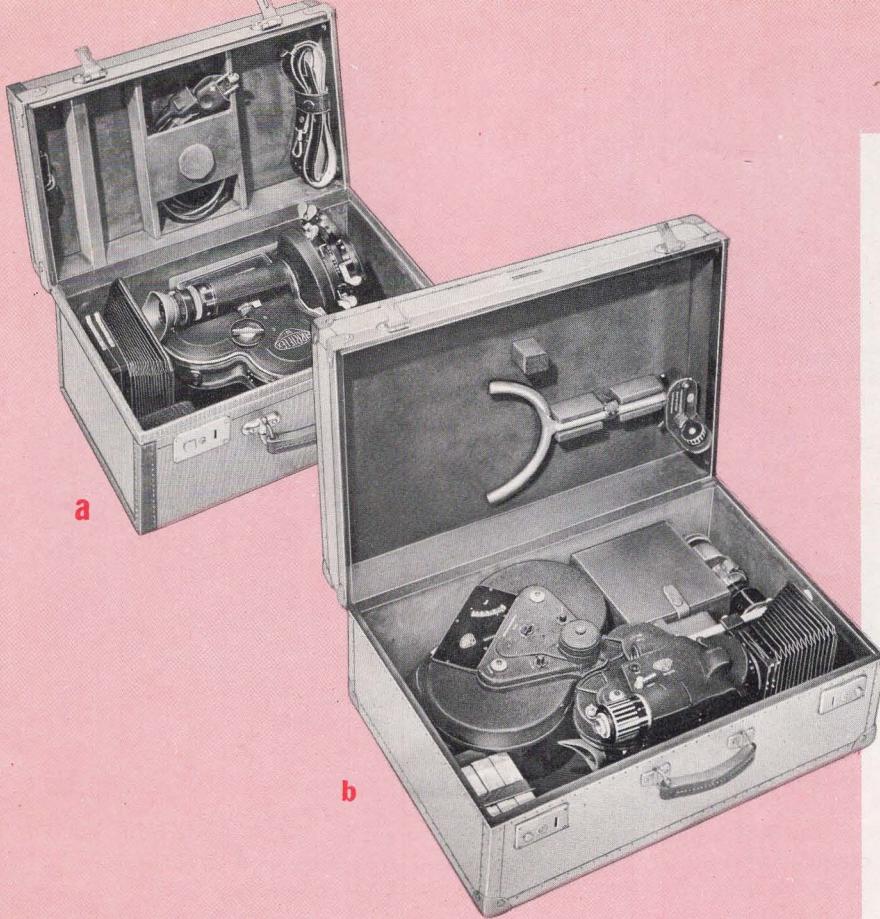
Cross section of Arriflex Optical System with periscopic finder attachment.

In some special applications, where it is not practical to look into the camera eyepiece from the rear — with camera mounted on an animation or microscopic stand, or when shooting upwards from ground level — the Periscopic Finder Attachment offers invaluable convenience. An optical system, consisting of a roof prism and ten lenses, it attaches to the camera between the regular finder and the detachable eyepiece. It carries the image "around the corner" so to speak. An elbow joint permits adjustment of the angle to suit the requirements of the moment.

The Periscopic Finder Attachment also serves as an extension eyepiece, and makes viewing with the left eye possible when the 400' magazine is used on the camera.



# arriflex 16



## **a** arriflex "a" case

Holds camera, three lenses, matte box, filters and small accessories. Fabricoid covered, red-velvet lined, with chrome plated brass hardware and channelling around cover, to insure dust- and moisture-proof storage. Only 15" x 9" x 8", it is particularly designed to fit under the seat of an airplane. Weight — 8 pounds.

## **b** arriflex "b" case

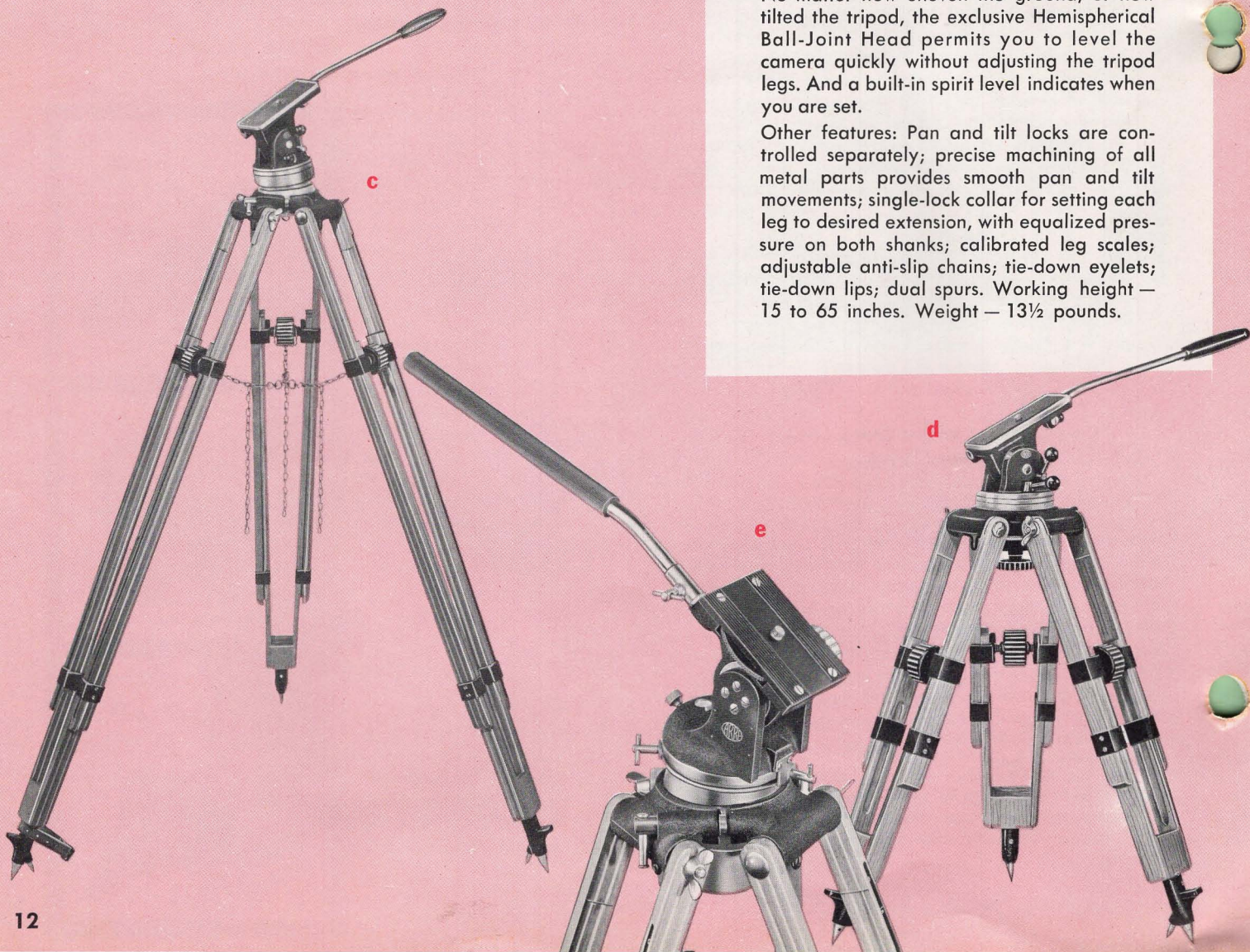
Holds Arriflex 16, with 400 ft. Magazine in position, two spare magazines, Torque Motor, lenses, Matte Box, Shoulder Pod, filters and other accessories. The Model "B" case has hammered aluminum covering, is lined in red velvet and has chromium plated brass hardware, chrome plated brass channelling to insure dust- and moisture-proof storage. Measures 24" x 6" x 8½". Weight 20 pounds.

## **c** arriflex 16 tripod

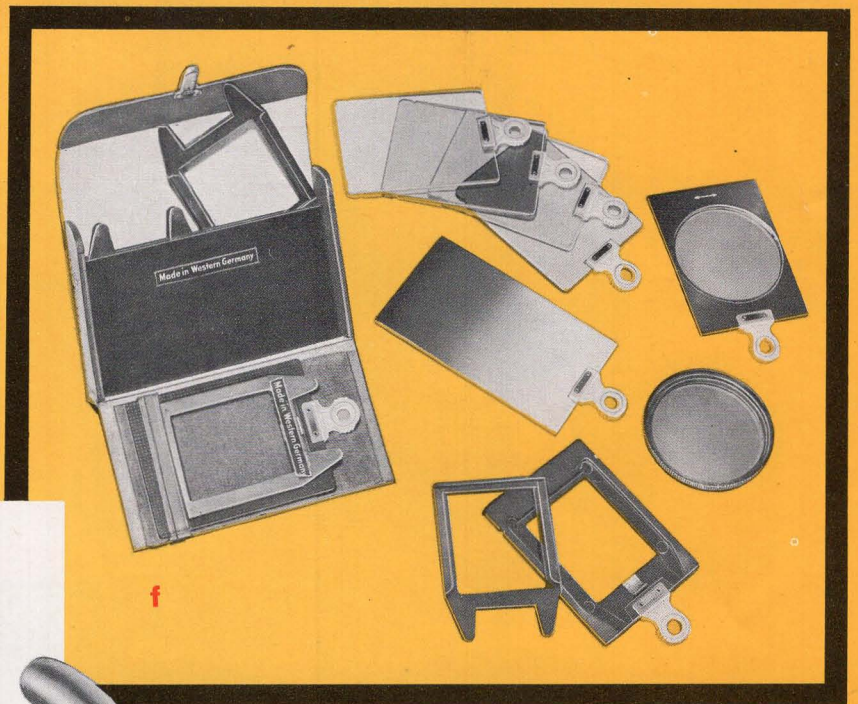
The Arri 16 Tripod, though an ideal tripod for any camera, was particularly designed for the Arriflex 16. When the camera is mounted, its film plane is positioned directly in line with the pan and tilt axes of the panhead, which results in smoother pan shots.

No matter how uneven the ground, or how tilted the tripod, the exclusive Hemispherical Ball-Joint Head permits you to level the camera quickly without adjusting the tripod legs. And a built-in spirit level indicates when you are set.

Other features: Pan and tilt locks are controlled separately; precise machining of all metal parts provides smooth pan and tilt movements; single-lock collar for setting each leg to desired extension, with equalized pressure on both shanks; calibrated leg scales; adjustable anti-slip chains; tie-down eyelets; tie-down lips; dual spurs. Working height — 15 to 65 inches. Weight — 13½ pounds.



# accessories



## **d arri 16 shorty tripod**

For low angle shooting. Supplied less head. Uses Hemispherical Ball-Joint Head (or Gyro Head) interchangeably with Arri 16 Tripod. Working Height — 9 to 21 inches. Weight — 8½ pounds, less head.

## **e gyro head for arriflex 16 tripod**

The Gyro Head is interchangeable with the standard head on the Arriflex 16 Tripod. It offers all the adjustments and advantages of the normal head, plus gyro panning. The range of panning can be set between two movable screw clamps.

## **helmet and boots for tripod**

(not illustrated)

These are tripod accessories for safe transportation. Bucket-like in appearance, they are made of heavy saddle leather and are held together by means of leather straps.

## **f arriflex filters**

Dyed-in-the-mass, optical glass filters with finger grips and locking notch for Arri Matte Box. See price list for types, and details.

## **g arriflex shoulder-pod**

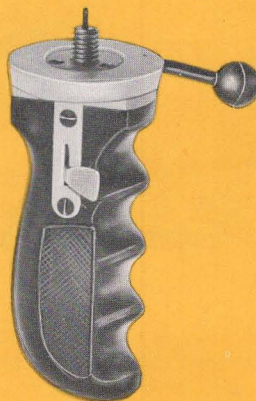
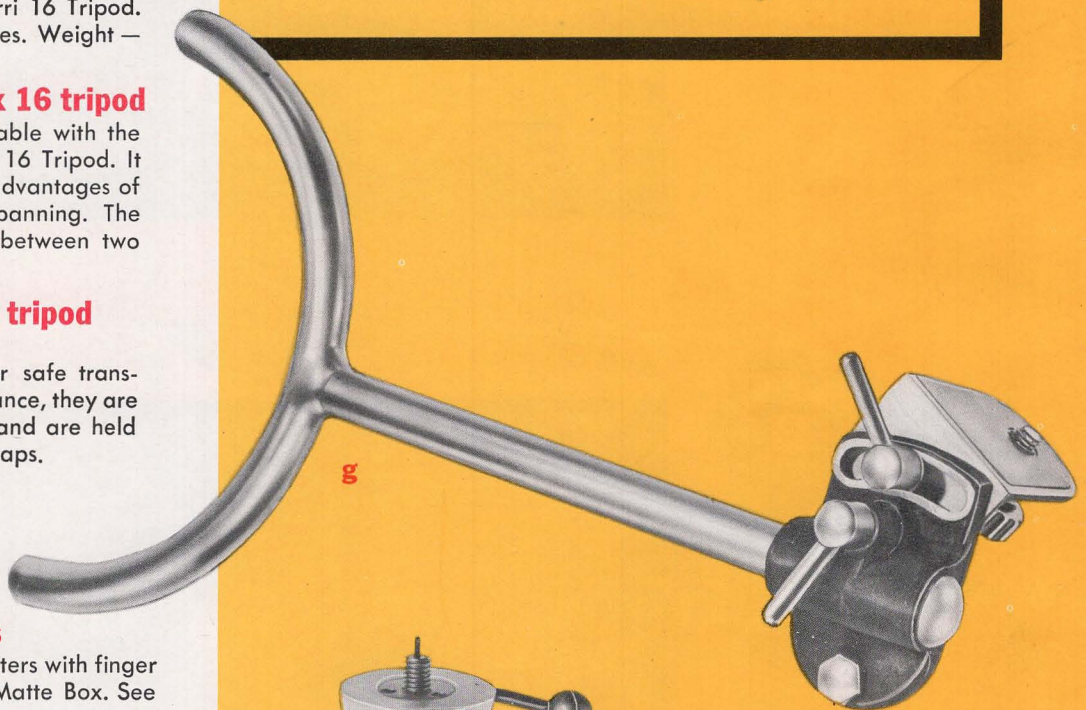
The Shoulder Pod is a further aid to hand-held shooting with the Arriflex 16. It consists of a crescent-shaped, chrome-plated frame with sliding and tilting camera bracket. It is adjustable, so that camera can be held comfortably with the viewfinder eyepiece at the most convenient viewing position for each individual photographer.

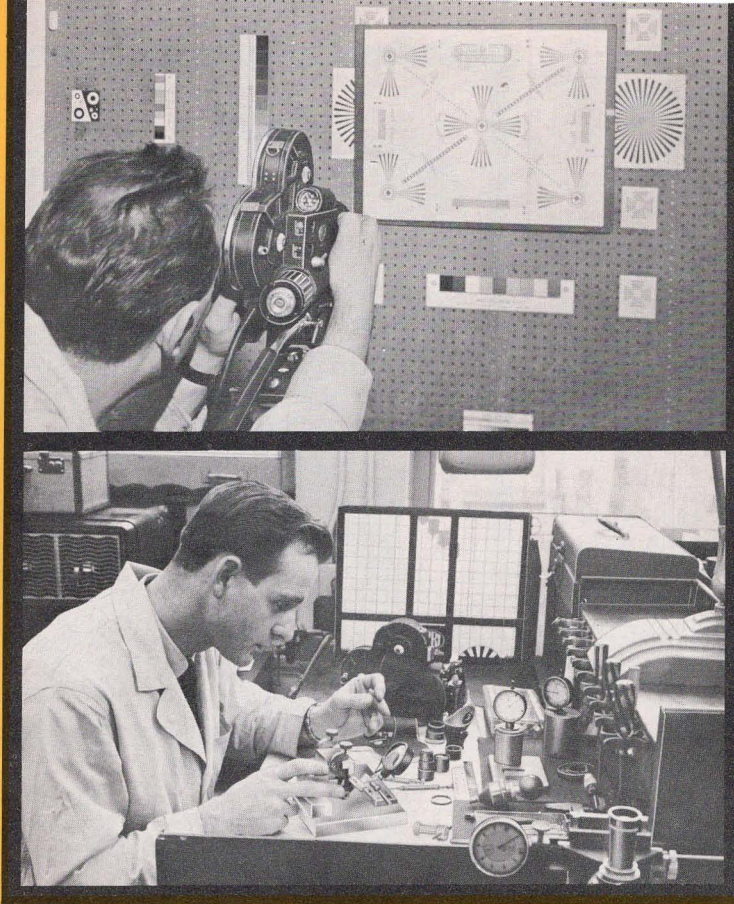
## **h arriflex pistol grip**

The Pistol Grip which screws into the camera's tripod socket, and connects to an internal switch, permits the cameraman to hold the camera and release the shutter with the left hand, while the right hand balances the Arriflex and operates the follow-focus. It is finely machined of light-weight metal alloys, smoothly finished, and is shaped to the contour of a clenched left hand.

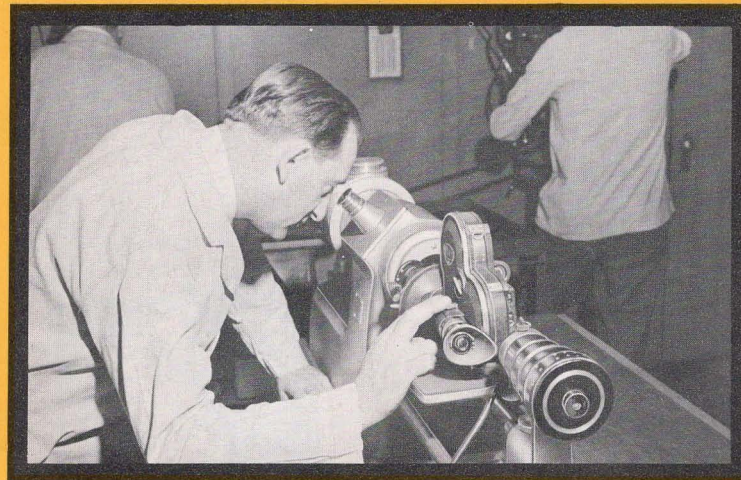
## **i arriflex extension tube**

Inserted between lens and camera. Permits limited close-up photography. (Send for separate data sheet for complete information.)



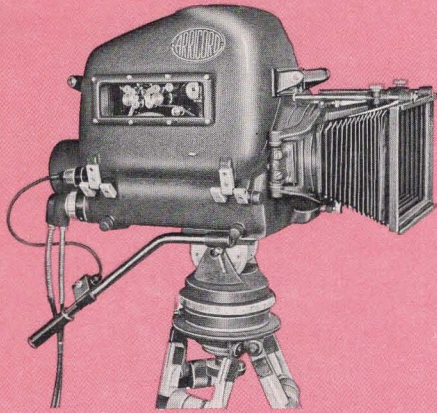


**top caliber service facilities in the U.S.**



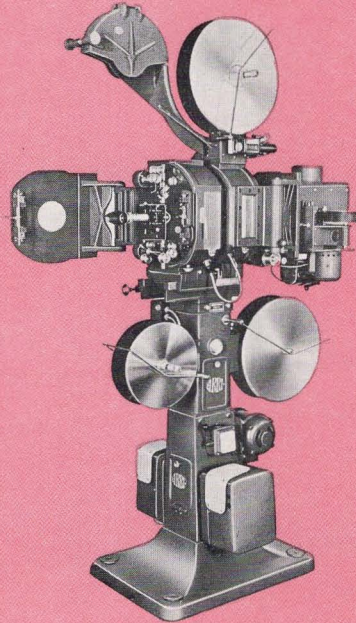
A modern, fully equipped service center is maintained at Kling Headquarters in New York City, manned by factory trained technicians. A complete stock of Arriflex parts is always on hand. Because most Arriflex owners derive their income through the use of their cameras, service is handled on the promptest possible basis — in most instances, within 24 hours.

# other arri professional equipment



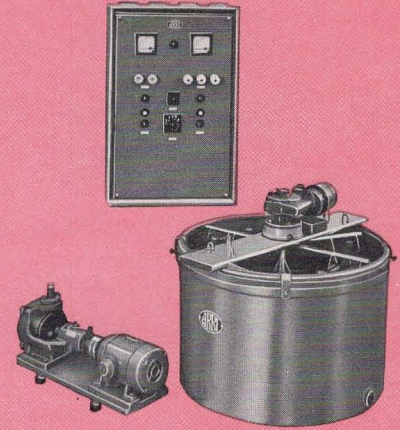
## ArriCORD 35

Single unit, double system, picture and sound camera



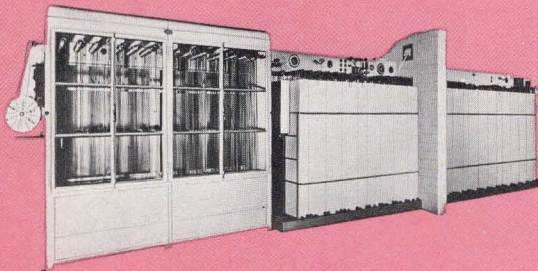
## Arri Printers

35mm and 16mm, contact and optical, color and black-and-white.



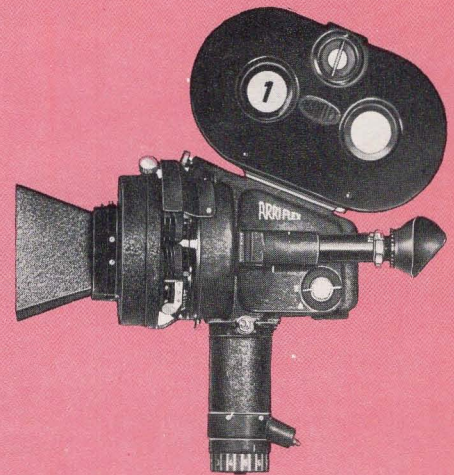
## Arri Silver Recovery Unit

For photo and cine laboratories



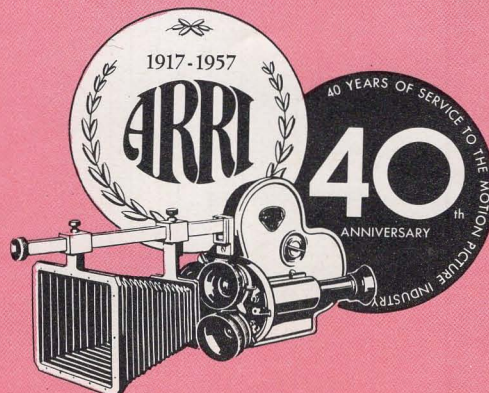
## Arri Film Developing Machines

35mm, 16mm and combined, sprocket or bottom drive, for color and black-and-white



## ArriFLEX 35 Mirror Reflex Camera

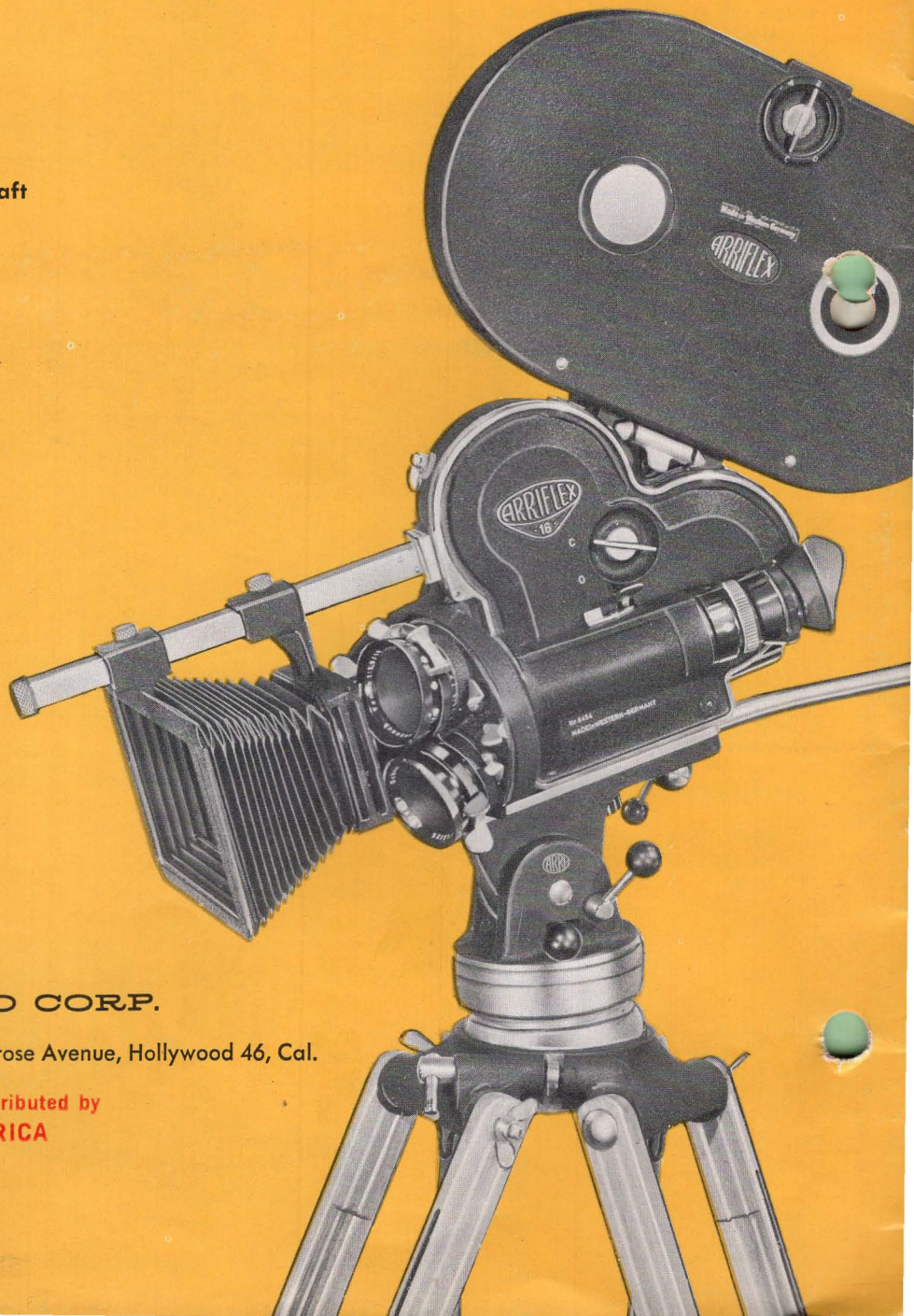
Thousands in use, the world over.



Details and specifications subject to change without notice.

Hundreds of satisfied Arriflex customers throughout the nation are our best recommendation. Many companies own two or more—Walt Disney Studios has more than thirty. Here is a partial list of Arriflex users:

Atchison, Topeka and Santa Fe Railway Company  
Barber-Greene Company  
Boeing Airplane Company  
California State Polytechnic College  
Dr. Ramon Castroviejo  
Chrysler Corporation  
Colburn Film Services  
University of Colorado  
Walt Disney Productions  
Florida Cypress Gardens  
Hunter Boat Corporation  
University of Kansas  
Kimberly Clark Corporation  
Steve McCutcheon, Anchorage, Alaska  
University of Michigan  
Missile Systems Division, Lockheed Aircraft  
M P O Productions  
Moody Institute of Science  
Nationwide Insurance Company  
University of Oregon  
Purdue University  
Raymond Concrete Pile Company  
Rolab Photo Science Laboratories  
Santa Fe Railroad  
Charles Scirba  
Union Pacific Railroad Company  
United States Steel Corporation  
The Venard Organization  
Virginia Polytechnic Institute  
University of Wisconsin



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**NOTE: As of July 1, 1959 ARRI products are distributed by  
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