

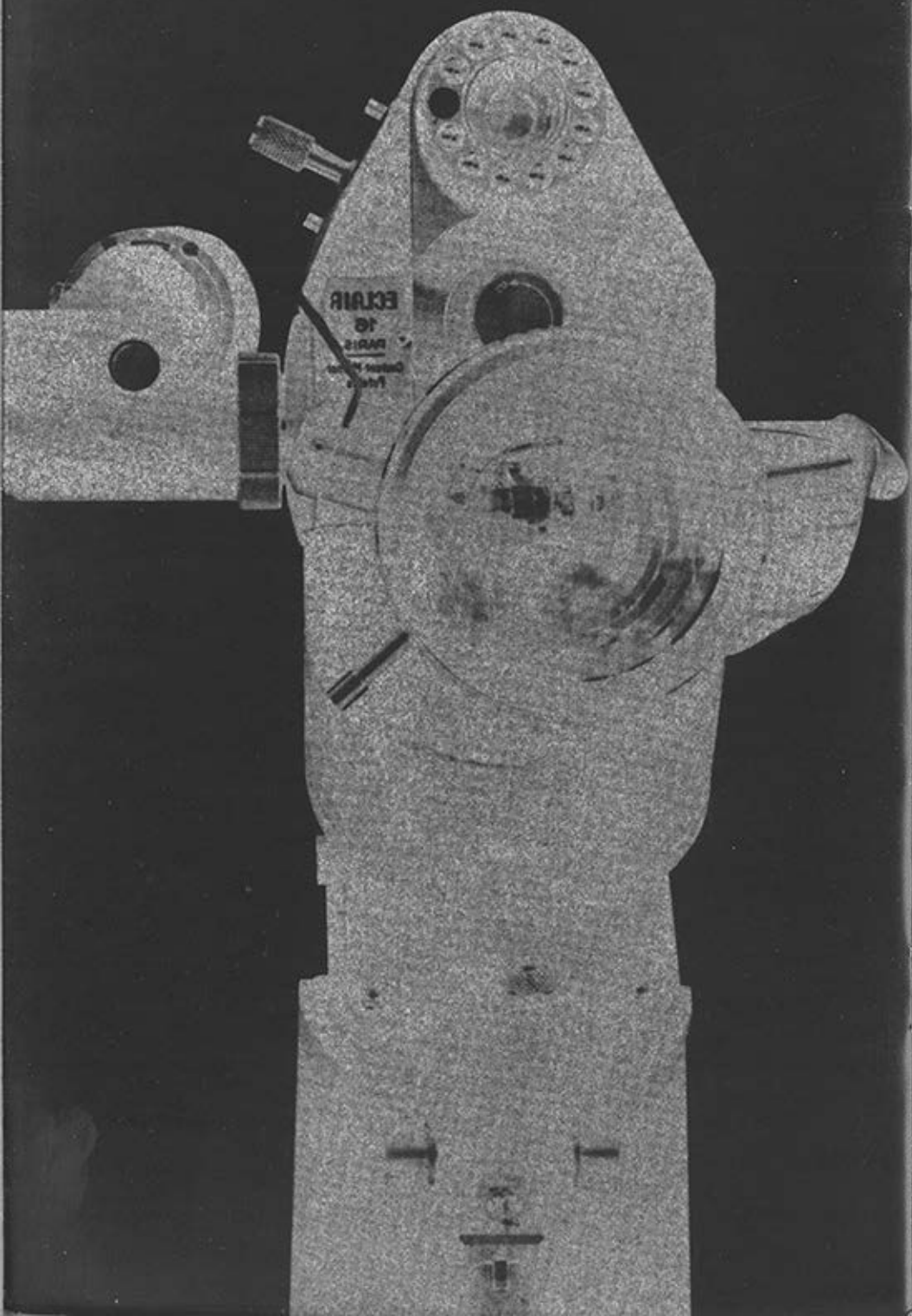


eclair

**the new eclair npr** ✿ a noiseless, portable reflex  
16 mm professional motion picture camera ✿ ✿ ✿

## NOMENCLATURE

1. Camera body
2. Magazine
3. Motor
4. Turret
5. Taking-lens
6. Spare-lens
7. View-finder eyecup
8. Shutter inching-knob
9. Shutter-control lever
10. Carrying-handle
11. Motor-switch
12. Magazine holding lock
13. Turret-lock
14. Footage-indicators
15. Supporting rod
16. Rod support
17. Supporting-rod lock
18. Eyepiece shutter-toothed wheel
19. Shutter-aperture setting
20. View-finder coupling
21. View-finder position lock
22. Eyepiece tension-screw
23. Dioptics-lock
24. Power input socket
25. Sync speed pilot lamp
26. Magazine-lid lock
27. Footage-indicator arm
28. Film supporting flange
29. Flange or spool ejector
30. Feed sprocket-guide
31. Magazine-lid
32. Lid safety lock
33. Take-up spool
34. Film transfer aperture
35. Upper take-up sprocket-guide
36. Lower take-up sprocket-guide
37. Upper pressure-plate aperture
38. Lower pressure-plate aperture
39. Guide roller
40. Film ejector
41. Film-guide opening-pin
42. Magazine driving-shaft connector
43. Film tensioner
44. Cradle (with hole for tripod)
45. Matte box
46. Double filter holder
47. Film notation disc



The ECLAIR NPR will radically change your thinking about film making!

Whether you make entertainment, documentary, educational, industrial or television films in the studio or on location, you will now be able to make complete sync. sound films as easily as you once shot silent and recorded wild. Shooting sync. sound won't take any more time or cost a cent more.

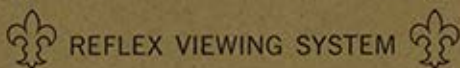
The new ECLAIR NPR (Noiseless, Portable, Reflex) is the first professional 16mm camera to free the film maker from

the tyranny of the heavy sound camera. It is designed to be used with the new professional portable 1/4 inch tape recorders; can be easily hand-held when necessary, and is so quiet no blimp is ever needed.

This freedom from the bulky impedimenta of sound filmmaking is combined with rugged construction, registration pin movement, and the industry's most advanced reflex viewing system.

Even when you shoot the NPR silent with wild sound you will discover that it is quite superior to any other camera. It is easier to hold for long periods, easier to follow action through the viewer; to thread and to change magazines.

Ask your ECLAIR dealer for a demonstration. It should change your thinking about film making.



The ECLAIR NPR has a true reflex viewing system using a mirrored shutter. The primary shutter blade is an optically

ground surface coated mirror. Specially tempered lucite is employed to reduce mass and eliminate breakage.

When the shutter is closed, the light is blocked from the film and the mirrored surface reflects the image onto the ground glass directly above the aperture.

When the film has been positively positioned for the next exposure, the shutter opens and the light goes directly onto the film.

This true reflex viewing (seeing and focusing through the taking lens) eliminates all possibilities of parallax inherent in rack-over or separate viewing systems.

Framing and focusing can be truly cinematic, adapting to the flow of the scene without being slowed down or hampered by static set-ups.

Viewing is continuous and the image is seen magnified twelve times and right side up.

The ground glass provides a finer grained and more luminous image than ever available before.

With the ECLAIR NPR you can pan horizontally faster than comparable cameras before any chatter or "strobe" effect appears. This is because the shutter rotates on a shaft which is below the aperture, thus the shutter cuts across the picture horizontally from side to side. This is the design used for the focal plane shutters of the best still cameras (viz. Nikon, Leica).

Other motion picture cameras have shutters rotating on a shaft which is to one side of the aperture, so their shutters cut down from top to bottom.



The ECLAIR system is better on horizontal pans, the older approach is better on vertical pans.

ECLAIR designed the new horizontal wiping shutter because a cameraman pans horizontally at least five times as often as he pans vertically.

The image in the viewer takes in 20% more area than the film aperture, which of course is indicated by frame lines. Thus the operator can see action approaching the picture

frame before it is in the scene, and can keep an eye on a dangerously close mike boom, the edge of sets, etc.

A provision is also made for changing screen proportions by placing mats in front of the ground glass. These mats can be cut by the operator to meet any special need.

 THE ROTATING EYEPIECE 

The standard eyepiece (7) on the NPR has more versatility than any other viewer whether standard or accessory equipment. It is fully rotating and capable of a double 360° swivel. It can swivel for right or left eye viewing, for high or low positions (shooting up or down) and for shooting forwards or backwards. This eliminates the need for ladders and awkward, uncomfortable and often dangerous positions required by fixed eyepieces.

One of the many advantages of the rotating eyepiece is found on dolly shots or moving shots of any kind where the cameraman can follow the subject without contorting his



body to keep his eye on a fixed eyepiece. He simply rotates the eyepiece to follow the action.

The automatic eyepiece shutter (7) on the NPR closes immediately when the eye is removed from the viewer, and opens automatically when the eye is pressed against the viewer. This eliminates any danger of fogging the film when the eye is removed from the eyepiece and also eliminates the irritation of closing and opening little trap doors.

When the eyepiece is set in any aspect of the normal horizontal position the cameraman is looking along an optical axis which is exactly parallel to the lens axis, whether he uses his right or left eye, is tall or short.

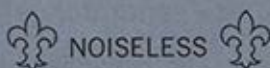
This means that when he opens the "other" eye to check the off scene action, he is looking right where he should be. When the optical axis of the eyepiece is not parallel to that of the lens, the cameraman who opens the "other" eye is looking off across to one side of the scene.

The perfect parallelism of the Eclair viewfinder allows per-

fect lining up in critical matching shots, where mattes are to be used, painted glass set pieces, or other precision work. There is no "built-in error" because of lack of parallelism.

"Bore sighting" is possible without extra cost accessories.

The eyepiece has the widest range of adjustment for individual eyesight, (23) 18 diopters. This permits more cameramen to use viewers without glasses. The diopter adjustment can be securely locked.





The NPR has been designed to meet studio sound requirements without sacrificing portability and without a blimp. It is not a self-blimped camera, in the usual connotation of a noisy camera with a sound deadening cover. The NPR is a basic new design utilizing components that were specially designed to be noiseless. The motor is silent and the drive from the motor to the shutter is direct, without gears. This is one reason for the unconventional shape of the camera.

The remarkably simple drive train not only eliminates a major source of noise but at the same time provides for more dependable operation with fewer critical wearing parts.

Studio tests with noise measurement meters indicate that the Eclair NPR equipped with a 10 to 1 Angenieux zoom lens is as quiet as blimped cameras and when used with a Barney is even quieter than blimped cameras.

The transistorized governor controlled motor (3) also incorporates a sync. pulse generator, which, when used with a 1/4 inch professional tape recorder like the Perfectone or Nagra, permits perfect synchronization of sound and picture.

The combination of silent operation and portability makes it possible for the NPR to be used in many locations where the conventional noisy camera, or the large blimped camera would be obtrusive.

 QUICK CHANGE AND QUICK LOADING MAGAZINES 

The NPR was designed as a magazine loading camera and not just modified to accept magazines: The magazines (2)

snap on and off in a second and no threading is required when changing magazines. (All the threading is done in the magazine beforehand.) No extra motors are required to operate the magazine.



The 400 ft. coaxial magazine was designed to be more compact and eliminate many problems that exist in the displacement type of magazine. In the latter type of magazine the very size of the magazine often creates problems: such as with wind on exterior sets or with low overhead clearance. And the shifting of weight from the front to the rear can be a problem in hand-held shooting.

The magazine is quick loading, and because of simplified design the loading does not take any longer than changing magazines on other cameras. Most threading is in open light. A pop-up button (40) for core flange or spool simplifies unloading.

Magazines accept 100 ft., 200 ft. and 400 ft. daylight loading spools and 400 ft. loads on standard cores. There

are separate counters for spools and cores on each magazine.

Because the magazines can be changed instantaneously without any threading whatsoever there is a surprising savings in time when filming live action. The actors and other technicians are never conscious of film run-out, there is therefore no dispersal of personnel from the set or a change of mood during a scene. As far as actors and other personnel are concerned the filming is continuous without interruption for loading.

 TWO POSITION TURRET 



Since the introduction of the new high quality extended range zoom lenses, such as the Angenieux 12 to 120mm, which cover virtually all the focal lengths required in normal production, the need for a turret with several lens sockets has diminished. And yet some turret capacity is desirable in case one is using special purpose lenses.

The NPR was designed especially to accommodate the

new zoom lenses, and the two position turret (4) permits a narrower profile for the camera head as well as simplifying camera operation.

One failing of sliding turrets with click positions is that the operator with a stiff lens focusing mount often discovers that he has moved the turret at the same time that he changed the focus. The NPR turret is of a positive cam type (13), locking into position. It can be changed very quickly but cannot be moved by accidental pressure on the lens.

The turret accommodates both Eclair bayonet mounts or "C" mounts for shorter lenses.

 FILM TRANSPORT MECHANISM 

The NPR uses a single pulldown claw and a single registration pin movement which also permits the use of single perforation film (such as will be used with the Eclair single system accessory to be available soon).

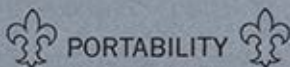
The film is advanced by the cam driven claw and is positioned against the wedge type registration pin, which engages the perforation immediately below the one engaged by the claw. This diminishes and controls the effect of any inaccuracies in film sizes and perforation placement and assures that the film is held absolutely steady during exposure.

During exposure and transport the film is positioned and supported in a long film channel with a spring loaded side pressure plate which is part of the camera aperture plate. The back pressure plate, with its unique center stage to assure a flat film plane, is part of the magazine. This combination of elements assures absolute steadiness and registration to meet the most severe professional requirements, such as blowing up to 35mm, double exposures and title work.

When the magazine is removed, the complete aperture, aperture plate, film channel and side pressure plates are uniquely open and accessible for inspection and cleaning.

Because the magazine snaps on and off in seconds, the

cameraman can easily check the gate and aperture without causing delays.



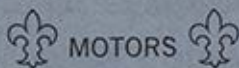
designed for easy hand holding when necessary

The unique design of the NPR permits steadier hand-holding for long periods of time. This design was the result of careful research with cameramen doing a great deal of hand-held shooting. It was discovered that the way in which the camera is held was more important than the weight of the camera. Muscle fatigue in the arms was pinpointed as the leading cause of unsteadiness. The major portion of the weight of the NPR rests on the shoulder of the cameraman, not on his arms. This not only permits longer hand-holding without fatigue but also frees the hands for follow focusing, and the manipulation of other controls. The camera, complete with a transistorized governor controlled sync. motor and a 400 ft. magazine, weighs only 18 pounds.



One of the corollary advantages of the camera shape and the rotating eyepiece is that the NPR can be used in certain positions that would not be possible with any other camera. For example, with the eyepiece extended up, the camera can be held under the arm like a "tommy gun." Or it can be held by the handle just a few feet off the ground for dramatic worm's-eye view traveling shots.

The NPR because of its functional design becomes part of the cameraman's body. Thus one can shoot hand held with focal lengths up to 75mm more steadily than when shooting with other cameras using a 35mm lens.





The standard motor for the NPR is a silent transistorized governor controlled motor, operating at a constant speed of 24 frames per second, from 12 to 15v D.C. battery power

supply. It incorporates a sync. pulse generator, which, when used with a professional  $\frac{1}{4}$  inch tape recorder like the PERFECTONE or NAGRA, permits perfect synchronization of sound and picture. The motor is self-correcting within .2% of speed. There is a neon light (25) in the motor which goes on when the motor is turning at 24 frames per second and goes off when the speed varies more than .2%. In practice the intensity of this light is also an extra check on battery efficiency.



The motor has a built-in voltage regulator and will maintain speed as long as the voltage does not drop below 12v. D.C. In normal operation it draws 2.0 amperes.

The sync. pulse is a 1.2v. A.C. current of 60 HZ (cycles).

A variable speed motor with a tachometer will be available soon, also a line of special duty A.C. synchronous motors, such as the crystal controlled motor which allows sync. filming without any mechanical, electrical or radio link between camera and recorder.

 VARIABLE SHUTTER 

The shutter can be set to any opening from 5° to 180° (19). It is standard equipment on the NPR and is important because of the increasing use of high speed emulsions. Many times unexpected light conditions can be best dealt with by varying the shutter opening, as stopping down the lens or adding neutral densities can have an undesirable effect on picture quality as well as making it difficult to frame and focus. Changing film stock is usually impractical or undesirable.

 EASE OF MAINTENANCE REPAIR 

The NPR was designed for heavy duty professional use.

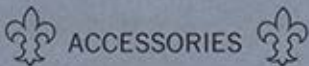
It is less subject to breakdown and repair due to the simplicity of its design and rugged construction.

At the same time considerable attention has been given to the need of the professional to keep the camera and espe-

cially the film gate clean. The aperture, aperture plate and side pressure plates are completely visible and accessible for immediate inspection and cleaning. This also permits the use of straight through the lens focusing devices.



To a professional, repair on a camera is not only a question of cost, there is also the problem of the equipment being tied up in a repair station when it should be in use. ECLAIR engineers have helped solve this problem by using a "building block" principle now used in advanced electronic construction. Whole sections are replaced as a unit, permitting rapid repairs without tying up the whole camera.

Parts and repair facilities are available in New York, Chicago and Los Angeles as well as in most of the principal cities in the world.





A complete line of accessories, including many special use modifications, will be available.



The following are immediately available:

 MATTE BOX (45) 

Provides two filter holders, one of which rotates for special purposes. Will take the long filters such as graduated neutral density filters, special effects filters.

 TELELENS SUPPORT (18) 

Positive locking device and strong support for telephoto lenses. Fits on matte box rod.

 CARRYING CASES 

A variety of carrying cases are available; all are aluminum clad with reinforced corners and edges, and tight, dustproof closures.

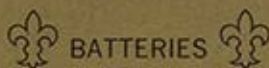
Since the NPR magazines snap on and off in less than a second, most of our cases have been designed to take the

camera without magazine so as to reduce weight and bulk.

The standard case is a fitted foam flotation case, accommodating the camera and its accessories except the magazines. The camera fits with both the eyepiece and 12-120 Zoom lens attached. This case affords maximum protection for the camera and accessories.

The matching magazine case holds two magazines with the film counters up so they can be read just by opening case.

Other cases available offer greater compactness and convenience at the cost of reduced flotation protection.

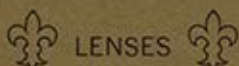


The standard battery is a 12v. D.C. Nickel-Cadmium battery, of 4 AH rated capacity which will supply the camera for filming 4,000 ft. under normal temperate conditions.

This is a rugged sealed battery, which may be shipped by air.

It includes a sync. pulse relay so that the sync. pulse may conveniently be taken from the battery pack, eliminating the need for a sync. cord to the camera, where it usually gets in the cameraman's way.

On special order any battery will be fitted with the relay for the automatic recorder start.



The world's leading lens manufacturers are supplying their lenses in NPR mounts. See the ECLAIR price list for details on lenses for ANGENIEUX, KINOPTIK, TAYLOR-HOBSON-COOKE, SOM BERTHIOT.



The most important consideration in judging synchronous filming equipment is its reliability: it must provide absolute synchronization all through a scene and be dependable in

every scene, and this synchronism must be at a constant sound speed.

Many different methods have been developed to accomplish these objectives but we need be concerned only with three: a) A.C. synchronous motor and sprocketed film (double system); b) sound on film (single system); c) stabilized motors and sync. pulse (double system).

A) A.C. Synchronous motors and sprocketed film. This is the traditional technique. To make it reliable the motors have become bigger and bigger, requiring less and less convenient power supplies. When away from utility power, either generators or awkward, heavy rotary converters must be used, which increase costs and reduce mobility.

B) Sound on Film. The "single system" method was developed to assure synchronization even where AC power was unavailable. It is still used by certain newsreel operations where speed is the prime consideration, even though both picture and sound quality are severely compromised. For



the film-maker to whom quality and control are important, "single system" creates more problems than it solves.

C) Stabilized motors and sync. pulse. The essential feature of this technique is the sync. pulse, which allows sound and picture to be synchronized after filming even if they were not recorded in perfect synchronization. This is accomplished by recording on a portion of the sound track an A.C. signal generated by the camera as it runs. This A.C. signal which is inaudible to the ear, serves to indicate any discrepancies or variations from perfect synchronism that may have occurred.

By comparing the sync. pulse A.C. signal to a known standard, usually normal A.C. house current, one can control the re-recording of the sound track at the time of transfer so as to re-establish perfect synchronization.

But this alone does not assure usable results. If the discrepancies have been more than 1 or 2% of standard, synchronism is achieved only at the cost of a poor quality sound

track because it must be speeded up or slowed down beyond acceptable norms.

Success came with the development by two Swiss firms, Perfectone, who makes the Perfectone recorders and the Eclair NPR motors, and Kudelski who makes the Nagra recorder, of the "stabilized" motors, motors which maintain speed so accurately (within .2%) that they can even be run in synchronism with AC sync. motors.

This accuracy assures that the speed variations between the camera and recorder are so slight that sync. can always be established without affecting sound track quality.

The next step will be the use of crystal controlled motors; A.C. motors controlled by quartz crystals so accurate that no sync. pulse will be necessary, hence no sync. cord or other link is needed between camera and recorder.

ECLAIR presented the prototype of this system at the SMPTE convention in Los Angeles in the spring of 1964. It has been announced for production early in 1965.



The ECLAIR NPR is manufactured by ECLAIR INTERNATIONAL DIFFUSION, Europe's oldest and largest manufacturer of professional motion picture cameras and equipment.

ECLAIR began as a studio in the 19th century not too long after a Frenchman (Niépce) invented photography and another Frenchman (Méliès) showed the world the fantastic possibilities of motion pictures.

ECLAIR began to manufacture cameras and equipment in 1909. The pioneer American motion picture industry knew Eclair well. Not only did it use the Eclair cameras, but during World War I Eclair opened studios in Fort Lee, New Jersey, and later on Long Island where many of the early American films, including some by D. W. Griffith, were made.

In the twenties Eclair sold off its operations here and retired from the American scene, but it continued to grow in fame and importance in the rest of the world.

During the Second World War when the Germans occupied Paris they immediately seized the ECLAIR facilities and tried without success to persuade ECLAIR engineers to design a new studio camera for UFA, the German State motion picture company. It is an interesting historical footnote that one of the largest single orders for the new ECLAIR NPR has come from a German state television network.

Eclair has produced several other famous cameras, such as the "six holer," a studio camera of silent days which had a six lens turret and is still found hard at work in many animation and special effects houses where it is prized for its unequalled steadiness. There is also the Camé 300, the leading reflex studio camera in Europe.

Probably the best known, however, even though it was never advertised or actively promoted in the USA, is the Eclair Camerette with its unique ability to film in both 16 and 35mm.

It is perhaps the most widely used professional documentary camera in the world. It is the standard camera for the British Admiralty, the French Armed Forces and several other governments. It is widely used in many installations of the U.S. Air Force and, in its underwater version, the Aquaflex, was widely used by the U.S. Navy.

The Eclair Aquaflex, developed with Cdr. Jacques-Yves Cousteau, is unsurpassed for underwater cinematography and has been used on virtually every major undersea film.

ECLAIR has also pioneered in the development of medical, radiology, high speed and instrumentation cameras.

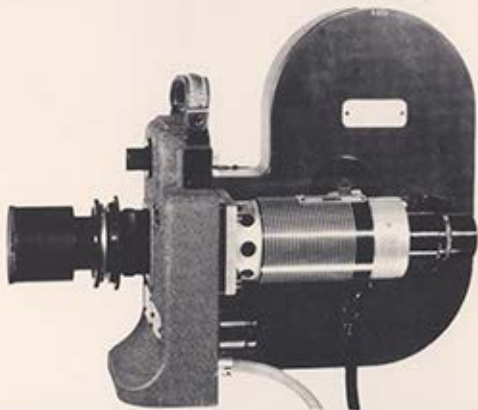
ECLAIR still operates studios in Paris and is thus active in the day-to-day production of motion picture films, a strong influence on the design of Eclair cameras. The NPR was use-tested by cameramen throughout France for 2½ years before the production model was finally determined.

ECLAIR MANUFACTURES A WIDE  
RANGE OF MOTION PICTURE  
EQUIPMENT

**THE CAMERETTE.** The world's outstanding 35mm documentary camera, it introduced such features as the quick change magazines, the divergent turret, the rotating eye-piece, the positive cam-locked turret. It is the only camera to allow filming in both 16mm or 35mm, cinemascope or techniscope at will.



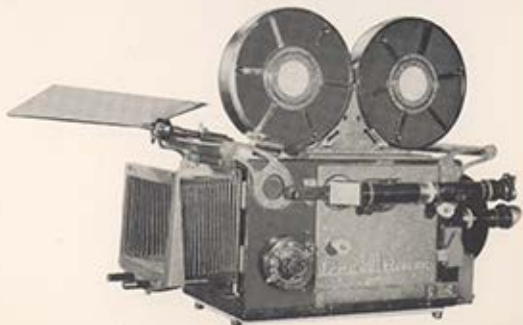
**The GV-35**—a remarkably compact 35mm high-speed and plate camera. Operates up to 150 f/sec., has four claws and four registration pins. Features quick change magazines, magnetic clutches, buckle switches, transistorized speed control, variable shutter.

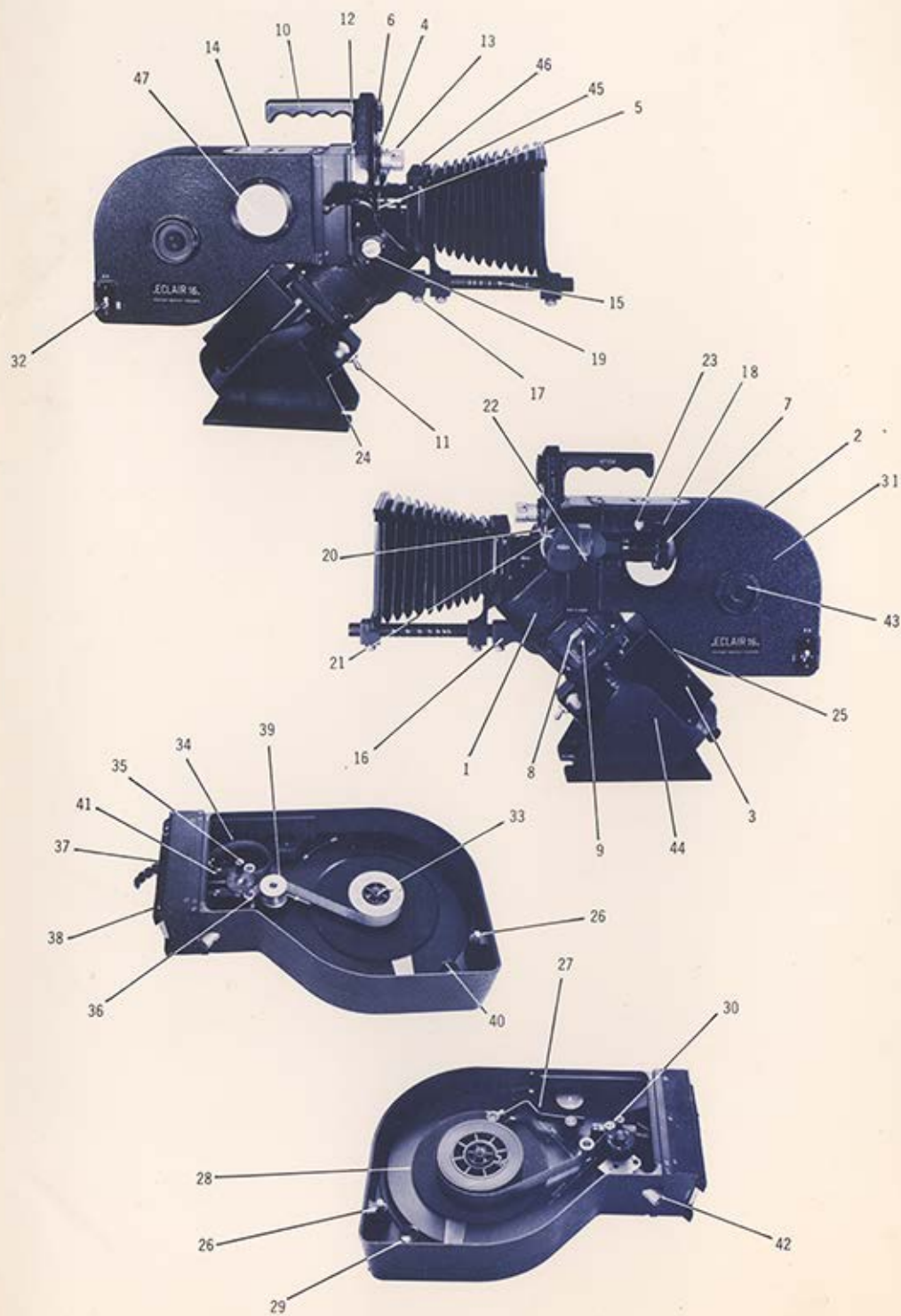


**The GV-16**—an ultra compact medium speed instrumentation camera. Runs up to 200 f/sec., has variable shutter, double pull down claw, registration pin, side pressure plates, quick change magazine and full range of special purpose accessories and controls.

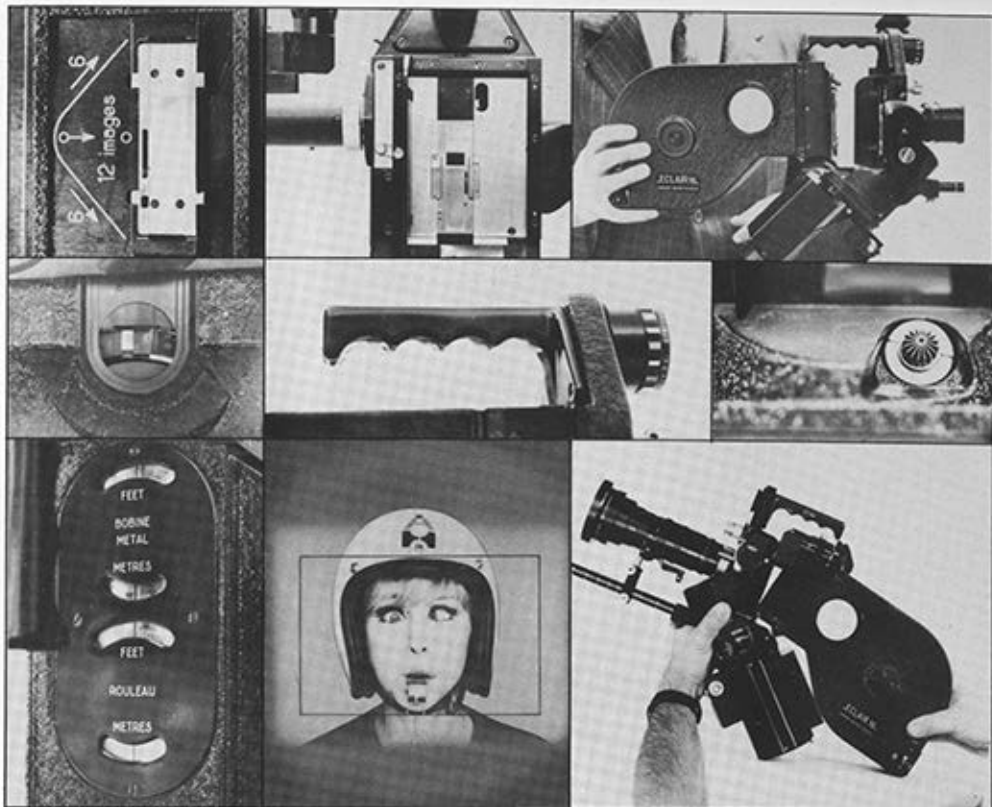


**The "CAME 300" Reflex.** Europe's leading 35mm studio camera. Full reflex viewing, variable shutter and a unique variable pitch double registration pin.

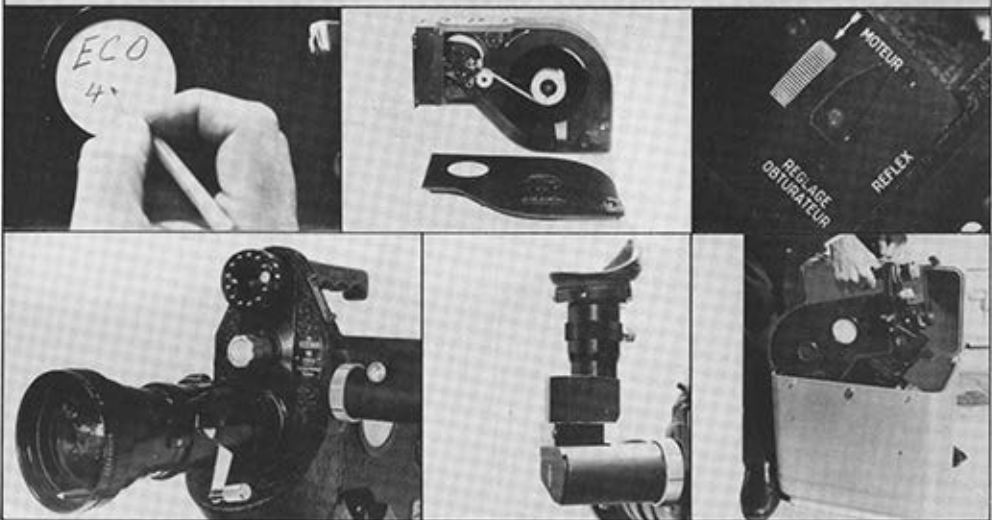




COUTANT-MATHOT PATENTS

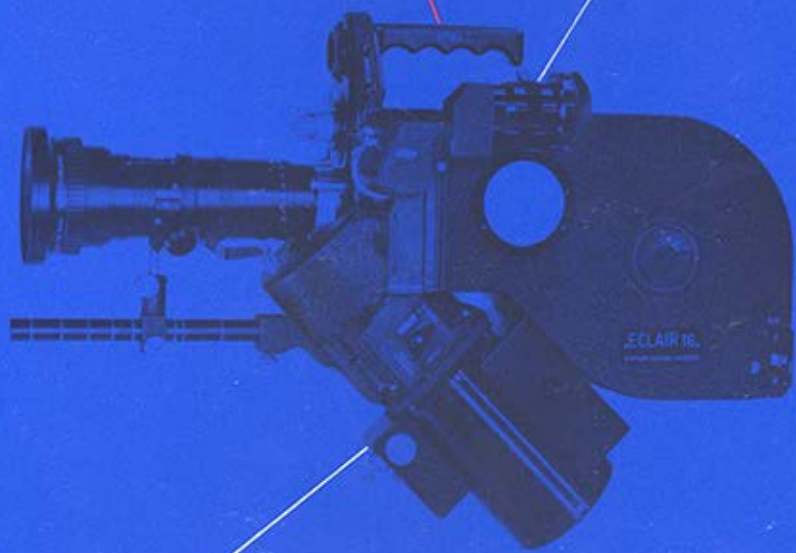


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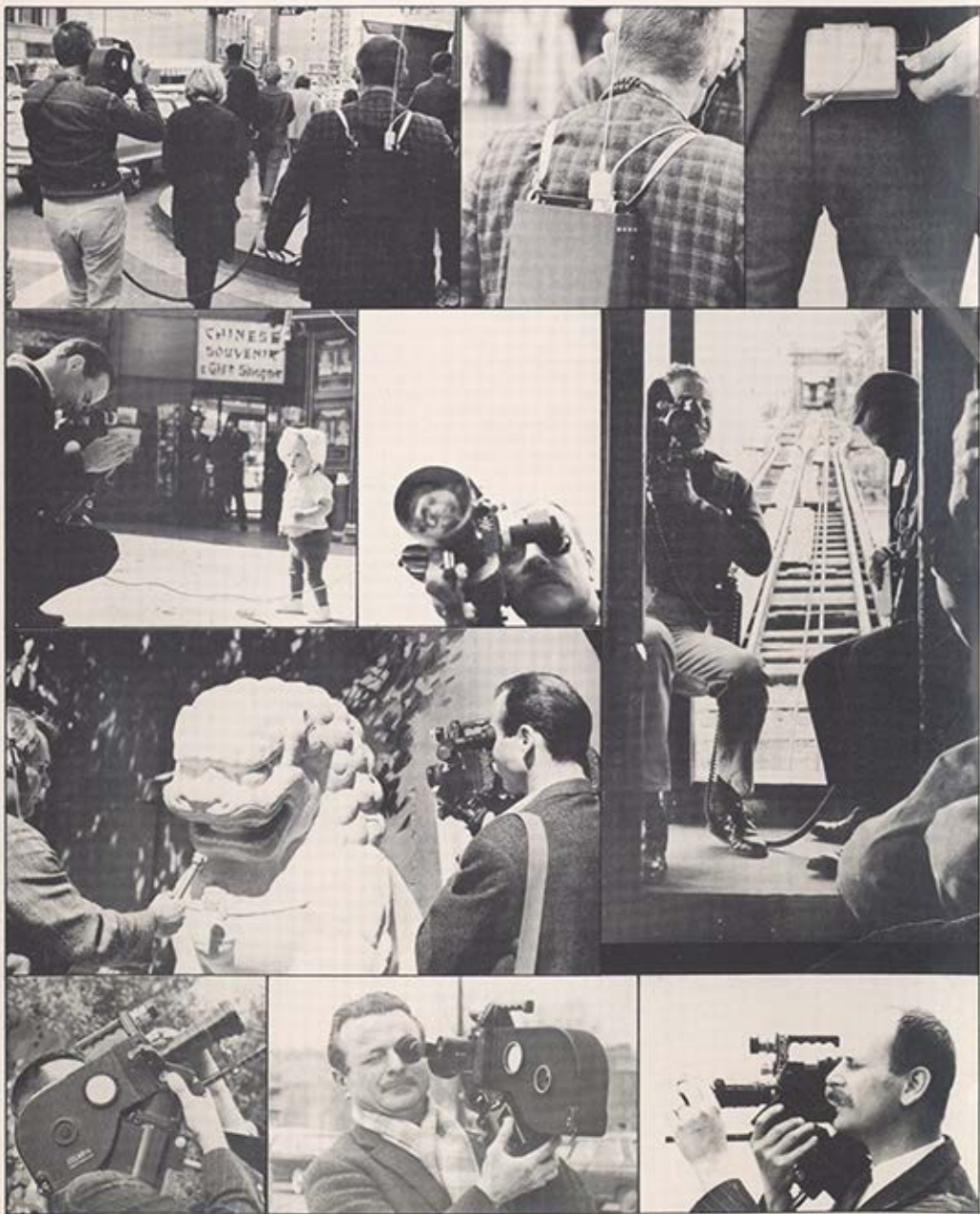


**portable**

**reflex**



**noiseless**



Official franchised Eclair dealer:

ECLAIR CORPORATION OF AMERICA, 7262 Melrose Avenue, Los Angeles 46, California  
Exclusive distributors in the U.S.A. for Eclair cameras and Perfectone tape recorders