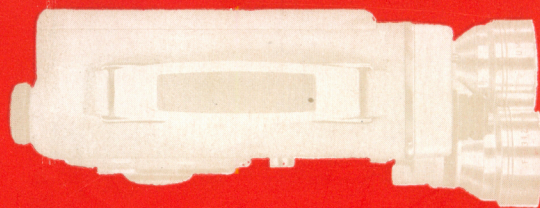


eumig



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english

eumig C3 *m*

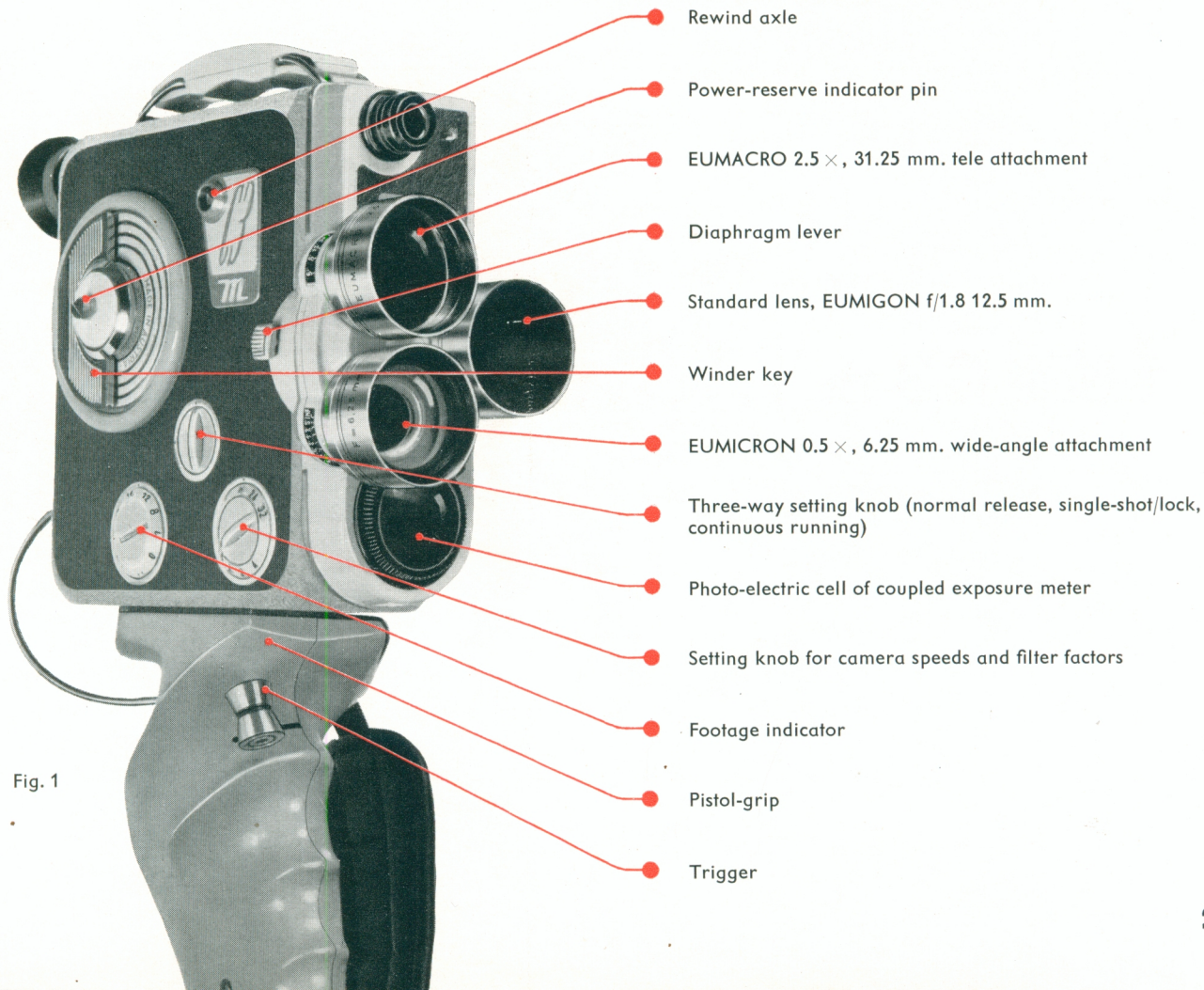
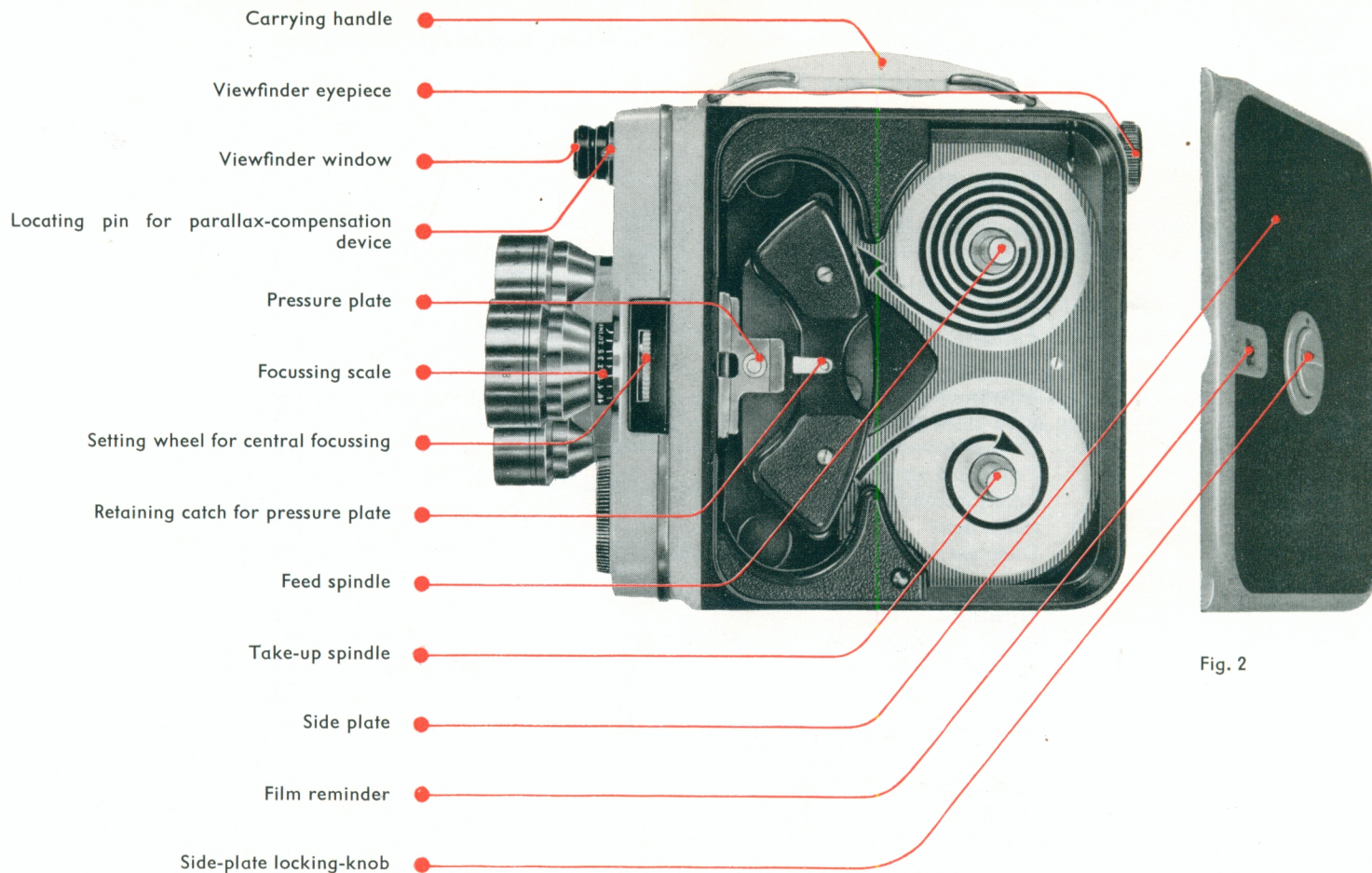


Fig. 1



8 mm. Cine Camera with Built-in Coupled Exposure Meter and Lens Turret

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You are now the owner of a first-class precision camera, a product of Austrian quality engineering. Before your camera left our works, we subjected it to a series of stringent tests and regulated it most carefully. It will fully satisfy all your requirements.

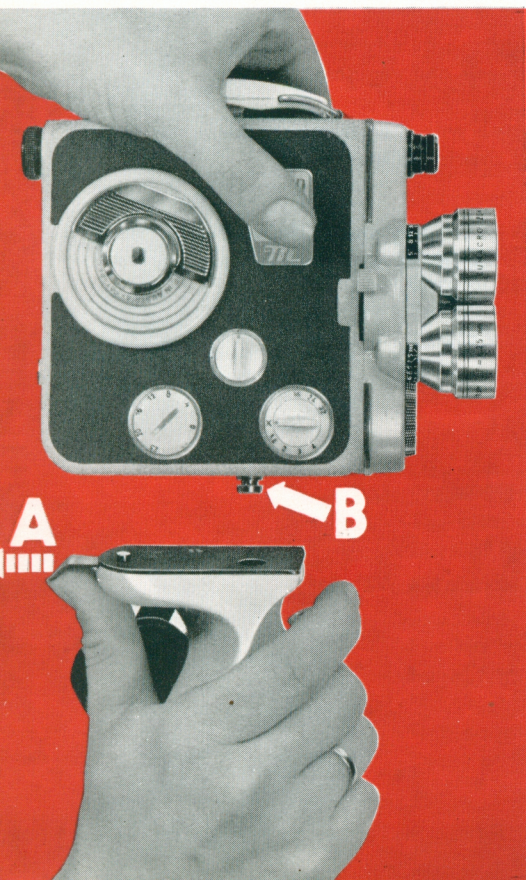
Please read this instruction booklet through carefully and familiarize yourself with the various manipulations before you begin actual filming. This will save you many feet of precious film.

The box in which the EUMIG C 3 *m* is supplied contains the camera with one empty spool, the lens cap, the protective cap for the photo-electric cell, and the following accessories which are supplied as standard with every camera:

1. The pistol-grip with adjustable leather strap (the grip is locked to the camera)
2. The rewind crank and lens-cap
3. The moulded rubber eyepiece
4. The cable release

In addition, your photo dealer can supply you with the following optional extras:—

1. EUMIG 651 parallax-compensation device (10"— ∞)
2. The matte box
3. Colour filters and colour-correction filters (manufactured by Messrs. Biermann & Weber)



BEFORE FILMING

To release the camera from the pistol-grip, pull back the locking lever A. The camera will now lift off as shown in Fig. 3. The retaining bolt B is screwed in to the base of the camera. When you fit the pistol-grip to the camera, this bolt enters the aperture in the top plate of the pistol-grip and locks in place. To avoid losing this bolt, a small but important component, unscrew it from the camera and press it home into the aperture of the pistol grip, where it will be held firm.

Winding

Before you load the camera, wind the clockwork motor by turning the winder key C. The winding mechanism is designed somewhat like that of a watch; you need not let go of the winder key, but merely continue turning it back and forth until you feel a definitive resistance against further turning to the right. The clockwork motor will transport approximately 8 ft. of film at a constant speed on one winding (at

Fig. 3

16 frames per second this corresponds to a scene-length of 40 seconds). However, so that you will always have ample reserves of power, it is advisable to wind up the motor after every scene.

Another very handy feature of the EUMIG C 3 *m* clockwork motor is the indicator pin D in the centre of the winder key boss. When the clockwork motor is completely wound, this pin is flush with the surface of the boss; as the spring runs down, the pin is pushed out further and further until a red ring becomes visible. This indicates that the motor will run for about 10 seconds more.

If the camera is going to be out of use for any considerable time, it is advisable to unload the camera and allow the motor to run down, to avoid weakening the spring.

Setting the film speed

Beside the photo-electric cell you will see the scale E engraved with the values 10 to 100 ASA. To adjust the exposure meter to the speed of your film, set the white dot to the corresponding index. The exposure meter then automatically takes the film speed into account.

Fig. 4

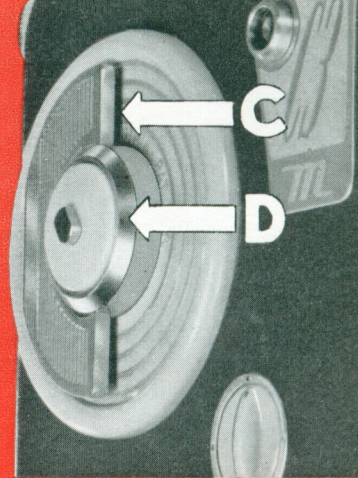


Fig. 5



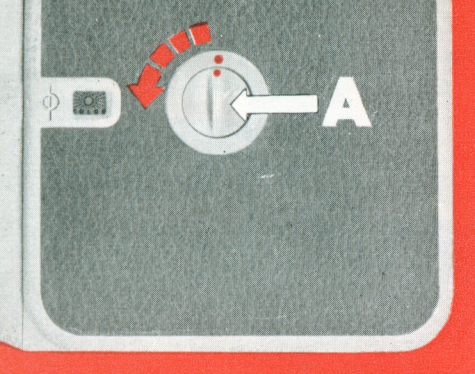


Fig. 6

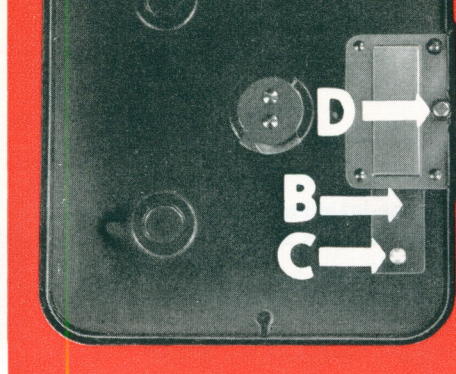


Fig. 7



daylight colour film



artificial-light colour film



black-and-white film

Loading

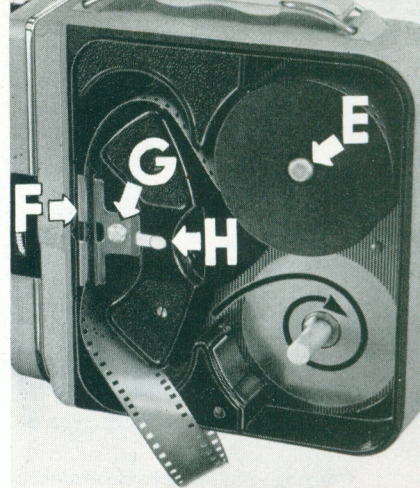
Open the camera by slightly pressing down locking knob A and turning it anti-clockwise as far as it will go; then lift off the side plate.

Set the film reminder with slide B, actuating it by knob C, so that the appropriate symbol appears in the window.

The small spring-loaded steel knob D set in the side plate presses lightly against the edge of the film, ensuring perfectly steady lateral position. It is specially hardened and ground. Place a standard 25 ft. daylight-loading spool of double-run 8 mm. film on the feed spindle E so that the free end of the film unwinds as shown in Fig. 8, following the film path marked on the inside of the camera. Lead the film to the film channel F, and open this by drawing back the pressure plate G until it is held by the spring catch. Insert the film into the film channel and lead the free end as shown in Fig. 8. Press the little catch H to release the pressure plate, which will now spring back and close the film channel.

Secure the free end of the film to the take-up spool. The system of fixing the film varies from one make of spool to the other. In the slot of one type of spool there are two small hooks which engage the perforations of the film. In other types, as, for example, the EUMIG spool, there is a spiral spring in the spool core that guides the film round the inside of the core, and holds it firm. If the spool merely has a broad slot for fixing the film, bend the film leader sharply over about $\frac{1}{2}$ " from the end and insert it into the slot (Fig. 9).

Fig. 8



After fixing the film leader to the empty take-up spool, fit this spool on to the take-up spindle J with the figure 1 uppermost. If the film leader is too short for easy attachment to the take-up spool, run the motor for a few moments until sufficient film is available. Turn the take-up spool clockwise to check that the film is firmly attached to it. (A tangled mess of film in the camera is usually due to faulty loading.) Run the motor for a second or two to check that the film transport is operating properly.

Take care to follow the film path marked in the camera when loading.

We recommend the use of slow film stock, as it has much finer grain and thus gives better definition. Fast film should be used only in very unfavourable light conditions.

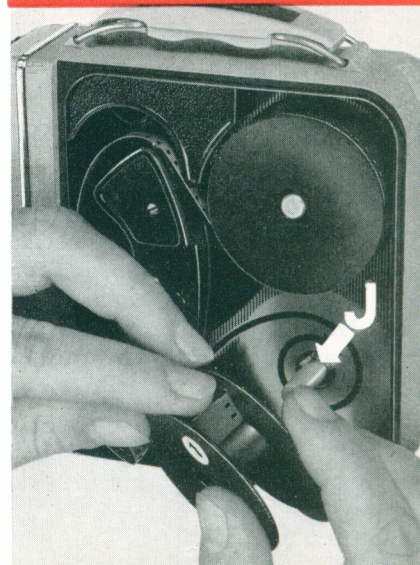
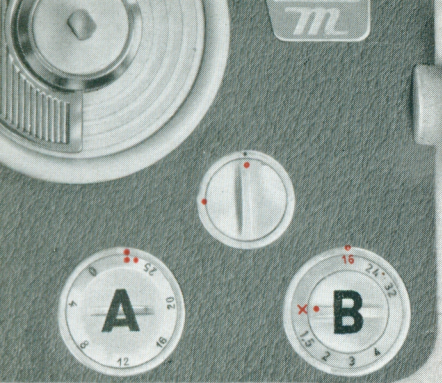


Fig. 9

Fig. 10



Footage indicator

First replace the side plate and lock it in position. Using a coin, turn the indicator disc A in a clockwise direction until the left-hand red dot on the disc coincides with the red dot on the rim. This sets the footage indicator to its initial position. When you press the release button, you will hear a distinct knock signal, which continues until the indicator disc reaches the position O. The film leader, which protects the film from fogging, has now run through, and you can start filming.

When the film indicator reads 25 ft. you have reached the beginning of the trailer, so you must stop filming. From this point onwards you will again hear the knock signal. When the right-hand red dot on the indicator disc coincides with the red dot on the rim, the trailer has run through. When this position

has been reached the indicator disc will not move any further. As the length of the trailer varies from one make of film to the other, we recommend you to allow the motor to run for a few seconds longer.

Second run of film

When the trailer has run through, you can open the camera without fear of fogging the film and turn the film round for its second run.

Never open the camera to load it or turn the film round in direct sunlight, but always in the shade. If no other shade is available work in the shadow of your own body.

Wind the film tightly on the take-up spool by turning it clockwise a few times. Now change the spools round, so that the empty spool is again at the bottom. Turn the full spool round, so that the figure 2 is uppermost and place it on the upper spindle in such a way that the film can be threaded again as already described. You can now expose the second half of the film.

N.B. When you open the camera to turn the film round for its second run, and then replace the side plate, the indicator disc is automatically shifted to the left-hand red-dot setting (= initial position).

Camera speeds

The EUMIG C 3 *m* has three speeds, 16, 24, and 32 frames per second.

16 f. p. s.	approx. $\frac{1}{36}$ sec. per frame	normal speed = projection speed
24 f. p. s.	approx. $\frac{1}{54}$ sec. per frame	} slow motion
32 f. p. s.	approx. $\frac{1}{72}$ sec. per frame	

The speeds are set by means of the dual-purpose knob B. Press the knob inwards slightly and set the figure indicating the desired speed (upper row of figures) to the red dot on the rim. *Take special care that the red dot of the inner part of the dual-purpose knob is opposite X, otherwise a filter factor is operative (lower series of figures).* We shall have more to say about this in the section "Colour filters and colour-correction filters", Page 21.

Each individual camera speed has a corresponding exposure time. These exposure times are automatically taken into account by the exposure meter. For your information, we have quoted in the above table the exposure time for each camera speed.

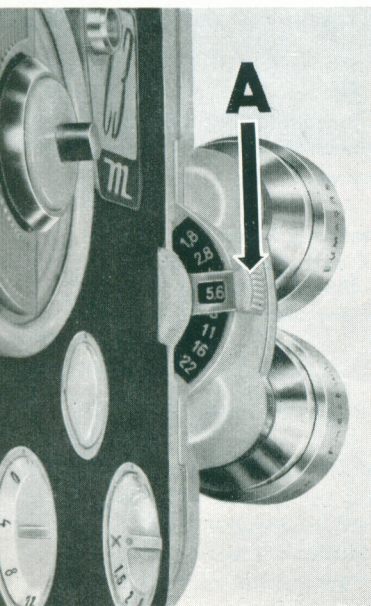


Fig. 11

Coupled exposure meter

The built-in coupled exposure meter of the EUMIG C 3 *m* is the ideal solution of the problem of cine exposure. Its special advantage is that you can regulate the aperture while filming. Operation of the exposure-meter unit is very simple. Remove the cap from the photoelectric cell, aim the camera at your scene, and bring the pointer in line with the triangular mark on the upper edge of the viewfinder window by actuating the diaphragm operating lever, and you have automatically set the correct aperture. No matter what the film speed or camera speed, whether you are using the standard, tele, or wide-angle lens, whether you are using a filter or not, you can always rely on the exposure meter to give you the correct value.

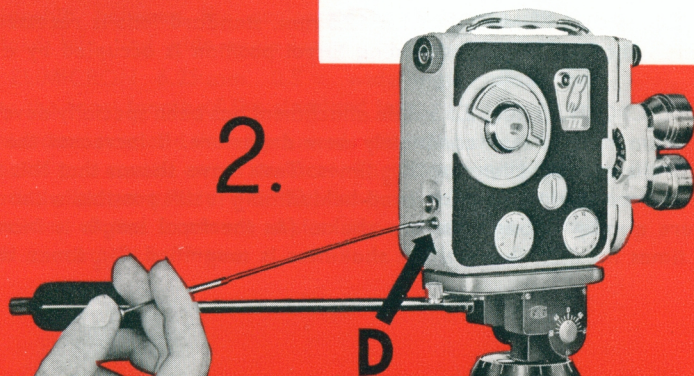
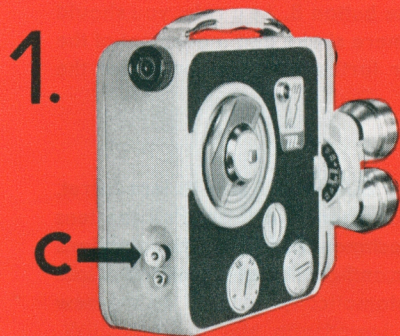
When the diaphragm is completely open— $f/1.8$ —and the pointer is to the right of the triangular mark, the light is too weak, and the shot would be under-exposed. Correspondingly, when the diaphragm is at minimum aperture— $f/22$ —and the pointer is to the left of the triangular mark, the light is too strong, and the shot would be over-exposed. In this case you can use a neutral density filter to reduce the intensity of the light entering the lens. If you are using such a filter, you must adjust the exposure-meter unit by setting the corresponding filter factor.

Fig. 12

Release mechanism

The normal release mechanism is in operation when the red dot of knob B is opposite the green dot on the rim. There are three modes of operation for normal release:—

1. Manual operation, by pressing the release button C on the back of the camera.
2. Cable-release operation, by means of the release cable screwed into the small bushing D underneath the release knob (for tripod work).
3. Pistol-grip operation, by actuating the trigger on the front of the grip.—There is more about the pistol-grip on Page 23.



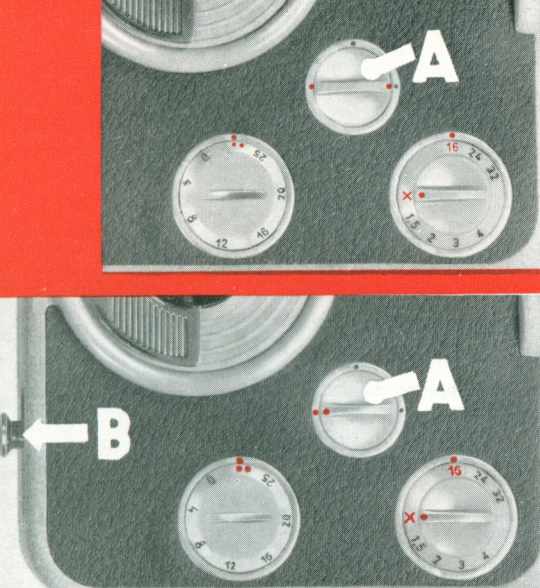


Fig. 13

For continuous-running shots, set the red dot of knob A to the *yellow* dot on the rim. Now the camera will operate automatically, so that you can appear in your own movies. To stop filming, set the red dot of the knob back to the green dot on the rim. Take care that the clockwork motor has a sufficient reserve of power for the scene.

Always use a tripod or mount the camera on a steady base for continuous-running work.

When the red dot of knob A is set to the *red* dot on the rim, the release is locked and accidental exposure is impossible. This setting of the knob is also the single-shot position. The single-shot mechanism is operated by a cable release screwed into the bushing in the release button B. As a rule, you should use a tripod for single-shot work to avoid camera shake and movement of the camera between the individual frames. For further information about the single-shot mechanism, see Page 28.

Lens turret and attachments

One of the most important advantages of your EUMIG C 3 *m* is its lens turret. You can change from one focal length to another in a flash. Pull the lens turret forward and position the desired attachment in front of the standard lens by turning the turret either clockwise or anti-clockwise—it will click into place (Fig. 14). The viewfinder image is automatically adapted to the new focal length.

The fast 4-element EUMIGON f/1.8 12.5 mm. standard lens is recessed into the camera body. The corresponding turret position is occupied by a lens-hood.

The EUMACRO 31.25 mm. $2\frac{1}{2} \times$ tele attachment has been specially developed for this camera and is a completely new departure. It increases the focal length of the standard lens by $2\frac{1}{2}$ times. Tests have shown that this is the maximum focal length at which hand-held filming is still possible without loss of picture quality through camera shake. (As the focal length is increased to $2\frac{1}{2}$ times normal, the slightest shakiness is magnified $2\frac{1}{2}$ times in sub-

sequent projection, so it may be safer to use a tripod for tele shots. For longer focal lengths, a tripod is absolutely indispensable.)

With a $2.5\times$ tele attachment, there is still a harmonious relationship between the scales of reproduction of the standard, tele, and wide-angle lenses.

The EUMICRON 6.25 mm. $0.5\times$ wide-angle attachment halves the focal length of the standard lens.

The standard lens and the attachments are, of course, colour-corrected and coated on all surfaces. The attachments do not alter the effective aperture of the standard lens, so that the indications of the exposure meter are correct, no matter which attachment is in use.

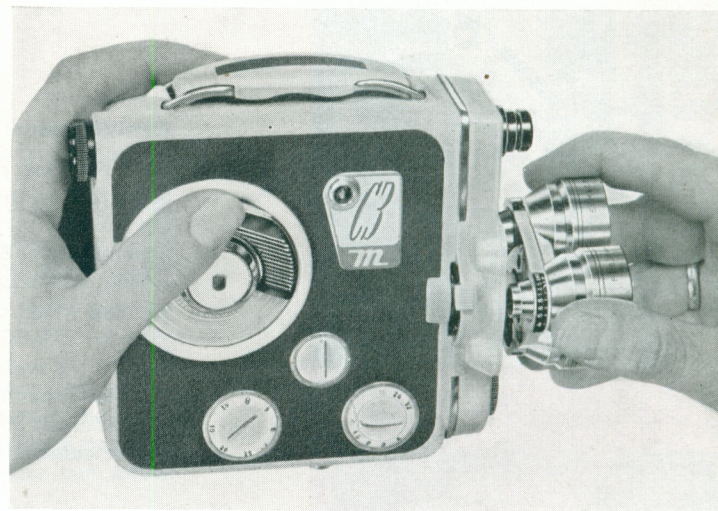


Fig. 14

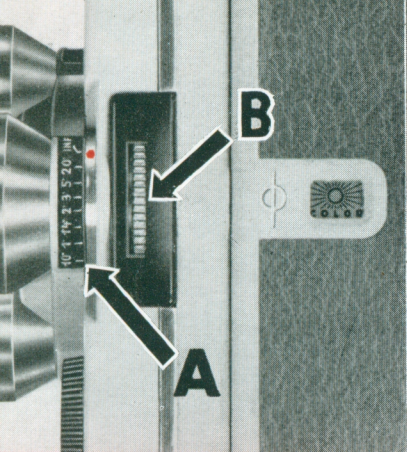
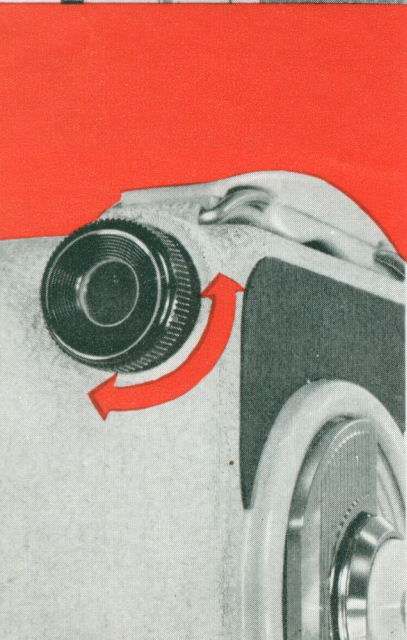


Fig. 15

Central focussing—The last word in distance setting

With the new patented central focussing system, you can focus any of the three lenses by turning a single knurled wheel. The mechanism is operated as follows:— On the lens turret there is a distance scale for each lens (A). To focus, turn the knurled wheel B. On every scale there is a value in red figures—this is the snap-shot setting, which gives adequate depth of field for all normal ranges. You will feel the knurled wheel clicking into place at the snap-shot setting.

With the EUMIG C 3 *m* you can focus the wide-angle attachment—a completely new feature. As wide-angle shots are normally taken at either close ranges (interiors) or infinity (panning), you can thus extract the utmost in definition from this lens. All distances should be measured from the film plane (indicated by the mark \oplus on the camera body).



Telescopic viewfinder

The telescopic viewfinder of the EUMIG C 3 *m* is a precision optical system of lens elements coated on all surfaces. It shows the field of view in natural size, i. e. on the scale 1:1, which makes it possible for you to follow the scene through the viewfinder exactly as you would with the naked eye. For spectacle-wearers, the eyepiece can be adjusted from plus to minus 4 diopters (Fig. 16).

The full area of the viewfinder window corresponds to the field of view of the wide-angle lens. When you change from one lens to another, a transparent mask is

Fig. 16

automatically positioned in the viewfinder window. When you are using the tele attachment or the standard lens you can therefore observe moving objects before they come into the field of view.

We supply with the camera a moulded rubber eyepiece cup which keeps out stray light from the side. Set the viewfinder eyepiece and then slip the rubber cup on to the eyepiece mount so that the higher side lies comfortably against your temple when you raise the camera to your eye.

Parallax compensation

Parallax is particularly troublesome in close-ups—the viewfinder image no longer corresponds to the image recorded on the film, because the optical axes of the viewfinder and the lens do not coincide. With the EUMIG C 3 m, the distance between these two axes, parallax, is $\frac{5}{8}$ '' horizontally and 2'' vertically. You can allow for parallax by aiming the camera high and slightly to the right.

A new parallax-compensation device has been developed for the EUMIG C 3 m to give absolutely accurate correction of this error. The device is fitted on to the viewfinder window. The range is set by means of the knob C (you can also set intermediate distances). Setting the range automatically corrects the viewfinder image. The parallax-compensation device is effective no matter which of the three lenses you use; it operates down to a range of 10'' (minimum range of the standard lens). The 4'' close-up setting of the wide-angle lens has a special purpose, which we shall describe in the following section.

Fig. 17



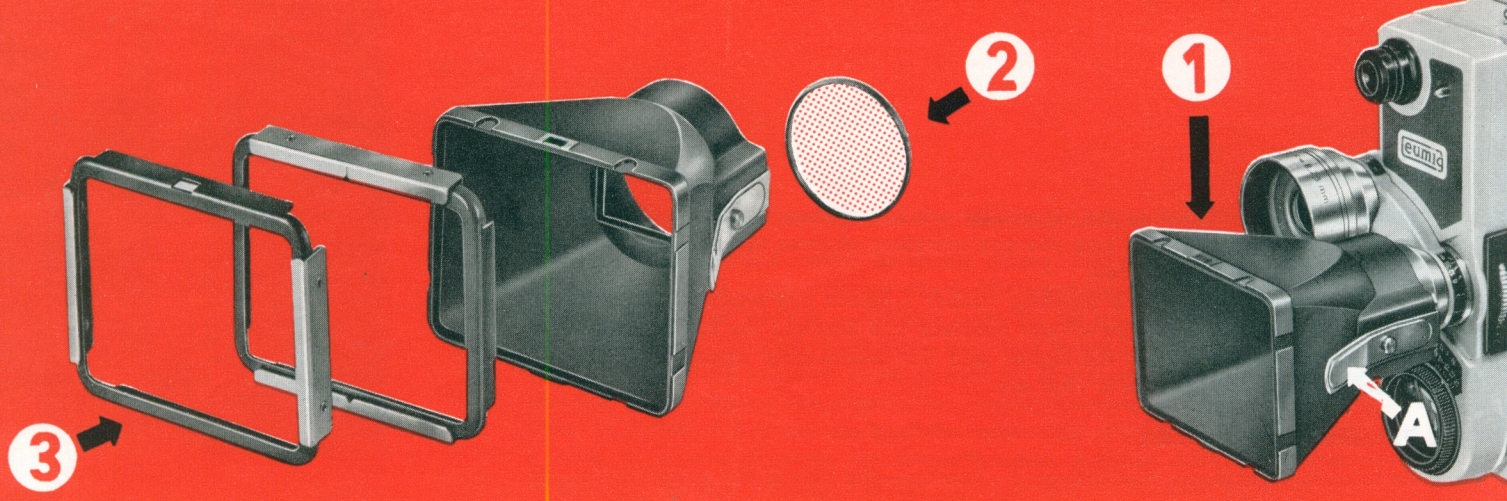


Fig. 18

Matte box

You can obtain the matte box from your photo dealer. It consists of the lens-hood, two metal frames, sliding masks, and a number of mattes. The matte box has four uses:—

1. Lens-hood

To fit the lens-hood on to the tele attachment, wide-angle attachment, or turret lens-hood of the standard lens, press lever A and slide the hood into position so that the lug fits between the two turret elements not in use.

In against-the-light shots the lens-hood should always be used in order to cut out unwanted reflections. In these conditions the lens-hood may cast a shadow on the selenium cell, slightly altering the exposure-meter readings ($\frac{1}{3}$ stop at the most). Such slight deviations are almost always negligible. However, if the exposure must be dead accurate, it is best to take the reading first, then put on the lens-hood, and film at the aperture ascertained previously.

2. Filter-holder

The lens-hood accepts either one or two filters. To insert a filter, open the filter-case, hold it against the rear end of the lens-hood, press the lever A, and allow the filter to slide down into position. Now fit the lens-hood as described above. This method of filter-insertion keeps the filter free of smudges and finger-prints. To remove the filter from the lens-hood, simply reverse the process.

3. Matte box

To adapt the lens-hood for use as a matte box, fit one of the two metal frames on the front opening. One frame has horizontal, and the other vertical guide channels, which accept any of the masks or mattes supplied with the accessory. The mattes reduce the field of view and give it a definite outline (keyhole, intersecting circles = field-glass effect, etc.). Attractive effects can be achieved by filming through these mattes. When using the matte box, take care that you have adequate depth of field.

With the matte box you can easily solve the problem of making the same person appear twice in one picture. First mount the camera on a tripod. Then slide an opaque mask into the guide channels as far as the middle of the frame, indicated by the notch and engraved line, and film the person on half of the frame. In shots of this type only the corresponding half of the viewfinder image will be recorded on the film. When you have finished the scene, rewind the film (see the section "Dissolves and double-exposure tricks" on Page 20), slide the mask half-way in from the other side, and film the person on the unexposed half of the frame.

4. Titler

Finally, the matte box can be used as a titler. Write the title on a piece of transparent or translucent material, such as thin plastic sheet, slide this into the guide channels, point the camera towards an illuminated surface, and film. You cannot use more than $1\frac{5}{16}'' \times 1\frac{11}{16}''$ for the title, as this is the maximum area shown in projection. Use the wide-angle lens and focus it to 4''—the exact distance between the front edge of the matte box and the film plane—and the title will be in sharp focus. To determine the correct exposure when using translucent material, hold the material against the photo-electric cell, aim the camera at the light source, and set the diaphragm. Slide the title into the matte box and film at the aperture thus obtained.

There are countless ways of using the matte box as a titler. For instance, you can write a continuous text on a strip of translucent or transparent sheet and pull this strip slowly through the guide channels while the camera is running. If you are using transparent sheet you can film a background at the same time, but in this case you must watch the depth of field carefully. A tripod should always be used in titling.

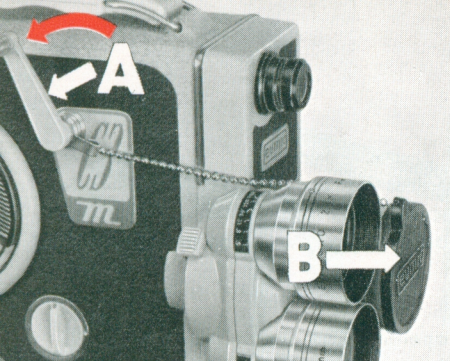


Fig. 19

Dissolves and double-exposure tricks

For these effects it is necessary to wind back the film with the small crank A supplied with the camera. Before you rewind the film, place the cap B, attached to the crank by a short chain, over the lens; this is important, as otherwise you will fog the film. Fit the crank on the rewind axle and turn in an anti-clockwise direction. At every revolution of the crank, one frame is rewound, which means that, in order to rewind a scene lasting 1 second (normal camera speed), you must turn the crank 16 times. To calculate the number of turns necessary for rewinding a scene, multiply the scene-length in seconds by the camera speed.

Never rewind with the motor fully wound, as rewinding automatically winds up the spring. When the clockwork motor is fully wound, and also while the leader or the trailer is running through (knock signal), it is possible to turn the crank, but the rewind mechanism does not operate. When the film is being transported by the rewind mechanism, the release button moves in and out—this is a useful check that film is being transported.

Rewinding is an important part of the double-exposure trick and the dissolve. The technique of the dissolve is as follows:—Stop down gradually at the end of the scene. Wind back to the beginning of the fade-out and commence the next scene at minimum aperture, gradually opening up to the correct stop. For an effective dissolve, light conditions must be such as to demand a fairly large aperture, otherwise there will not be sufficient scope for fading. In bright light, when the exposure indicates a small stop, say, $f/11$, the only way of producing a dissolve is to use a neutral density filter, which reduces the intensity of the light entering the lens, so that you need a larger aperture.

Colour filters and colour-correction filters

Your photo dealer can also supply you with a whole range of colour and colour-correction filters manufactured by Messrs. Biermann & Weber especially for the EUMIG C 3 *m*. Each filter is mounted in a slim metal ring, on which the type of filter and its exposure factor are engraved.

The lens-hood of the matte box makes a very handy filter-holder and, in addition, is excellent for eliminating reflections. (We described how to insert the filter into the lens-hood in the section "Matte box".) Your dealer can also supply you with filter-holders for fitting on to the tele or wide-angle attachment or on to the turret lens-hood of the standard lens.

The filter factor is set by turning the inner part of the dual-purpose knob C to the corresponding value (lower series of figures). The coupled exposure meter of the EUMIG C 3 *m* then automatically takes the filter factor into account.

Take care not to alter the camera speed (upper row of figures) when setting the filter factor—see the section "Camera speeds", Page 11.

When you remove the filter, remember to eliminate the filter factor by setting the red dot back to X.

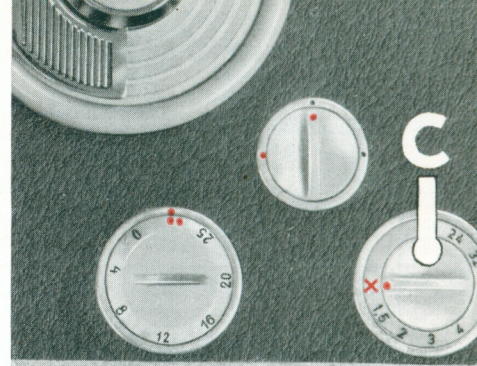


Fig. 20

Colour filters

Colour correction filters (conversion filters)

Filters	Colour film	Black-and-white film	Filter factor	Filters	For colour film only	Filter factor
U. V.		Absorbs excess radiation and prevents loss of contrast in mountain and seaside photography	X	KR 1.5	(Haze Filter) For use in dull, hazy conditions — in mountain photography and to correct slight excess blue tone	X
Neutral Density		Prevents over-exposure when the smallest stop would be too large	4	KR 6	Effect as KR 1.5 but more pronounced (corrects strong excess blue tone). Also suitable for daylight exposures on artificial light film to correct excess red tone	1.5
Yellow	Not suitable	Corrects rendering of water or landscape with sky and clouds	2	KR 12	Correction filter for daylight exposures on artificial light film under normal light conditions	2
Green	Not suitable	Effect similar to yellow but also corrects rendering of red tones	2	KB 1.5	Corrects slight excess red tone (early forenoon or afternoon)	X
Orange	Not suitable	Effect similar to yellow but more pronounced — good penetration of distant haze — contrasting cloud effects	4	KB 6	Corrects pronounced excess red tone (early morning and late afternoon)	1.5

The above indications are intended merely as a guide and may be modified slightly to suit the film in use.

FILMING

Preparatory operations in brief

1. Wind up motor
2. Set film speed
3. Set film reminder
4. Load camera
5. Set footage indicator
6. Set camera speed, and
7. Focus



Fig. 21

Pistol-grip—Holding the camera

The pistol-grip supplied with the EUMIG C 3 *m* is designed to fit snugly into your left hand. To fix the pistol-grip to the camera, screw the retaining bolt A into the tripod bush on the bottom of the camera, pull out the locking lever B as far as it will go, and place the camera on the pistol-grip so that the retaining bolt enters the aperture provided and locks firmly in place. Insert your left hand between the pistol-grip and the leather strap and close your fingers round the grip. The leather strap can be adjusted to the size of your hand.

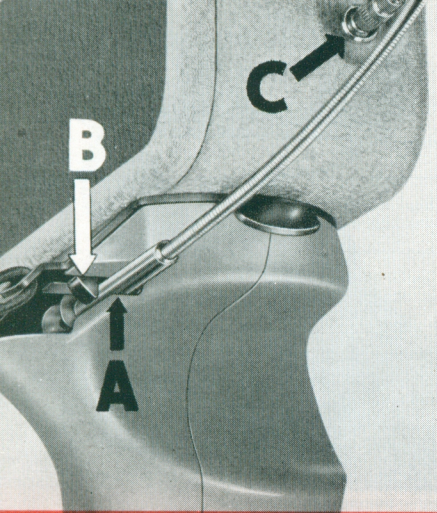


Fig. 22

The trigger that operates the cable release is on the front of the pistol-grip. To fix the cable release to the pistol-grip, insert it into the channel A, where the spring catch B will hold it in place. Screw the free end of the cable release into the small bushing C. To operate the release, press the trigger to the left with the index finger of your left hand.

Fig. 23 shows the correct way of holding the camera during filming.

Actuate the diaphragm-operating lever with the index or middle finger of your right hand. Take care that your right hand does not obstruct the selenium cell, or the exposure meter readings will be inaccurate.

Care of the EUMIG C 3 m

Your EUMIG C 3 m requires hardly any maintenance and will always give faithful service.

It will certainly interest you to know that your EUMIG C 3 m has life-long lubrication and that it requires no attention whatsoever in this respect. N. B. At unusually low temperatures, the action of focussing is likely to be somewhat heavier than at normal temperatures. Tests have shown that your EUMIG C 3 m will give long-term service at temperatures from 5° F. to 122° F. (—15° C. to +50° C.). The camera can be used for short periods at temperatures beyond these limits, but it should be borne in mind that the film will probably not stand up to these extreme conditions.

However, there are a few rules you should observe for the care of your EUMIG C 3 m.

Above all, keep the lens surfaces scrupulously clean, but avoid hard rubbing, which would damage the coating.



Fig. 23

In cold weather, condensation may occur on the surface of the lens when the camera is brought into a warm room. Watch out for this, and wait until the lens clears before beginning to film, otherwise your pictures will be unsharp.

The interior of the camera should also be kept clean. Fluff and gelatine dust may collect on the pressure plate and in the film channel. Remove the pressure plate (see Fig. 24) and clean with a soft cloth or a thin piece of wood. Clean the film channel and the film gate with a soft brush. Never use metal or any sharp objects for cleaning, as these would scratch the film channel and pressure plate.

The EUMIG C 3 *m* has been designed to stand up to the most exacting conditions, but we nevertheless suggest that you protect your camera as far as possible from extremes of temperature, dust, and damp.

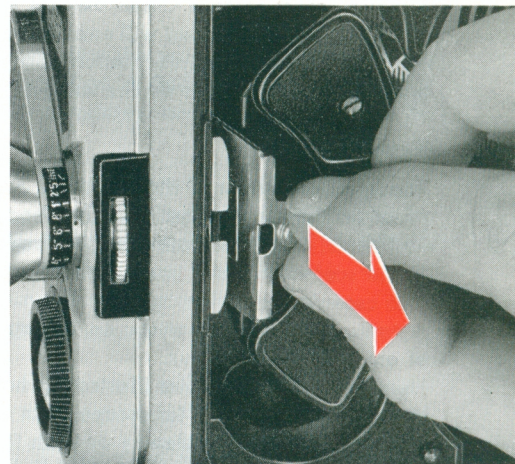


Fig. 24

HINTS ON FILMING

Although most EUMIG C 3 *m* owners will be familiar with the fundamentals of filming technique, we should like to give here a few important hints that will enable even the novice to make a success of his first films. Of course, we cannot say very much here. So, if you want more information about filming technique, production and direction, titling, etc., we recommend you to consult one of the many books on the subject.

Exposure

The exposure meter of the EUMIG C 3 *m* measures the average brightness of the entire scene to be filmed. If the scene is one of great brightness contrast, you can choose between filming with the average stop given by the exposure meter, exposing for the highlights, or concentrating on the shadows. If you decide on one of the two latter courses, go close up to the corresponding part of the scene and take an exposure meter reading. Then return to your original viewpoint and film the scene at the aperture thus ascertained.

A similar procedure is, of course, adopted when you are working with colour film and attach special value to the correct rendering of any particular colour.

Here are a few examples illustrating how to use the built-in coupled exposure meter:—

When filming a sunny landscape from a dark gateway or arch, first go out into the open and take a reading for the landscape, then step back until gateway or arch forms a silhouette frame for the landscape, and film from this viewpoint at the setting first obtained.

In colour shots of sunsets, the red clouds are particularly good subjects. As, in this case, the correct rendering of the red tones is all-important, and as the exposure meter measures not only the highlights but also the dark near areas, the diaphragm should be closed 2 or 3 stops.

Sunsets and evening scenes are particularly effective and make very good closing scenes for films. By very gradual stopping down to $f/22$, the scene appears to become darker and darker, while the sun takes on a reddish tinge, to turn slowly dark red as the aperture becomes smaller.

Side lighting gives excellent modelling.

Unusual effects can be achieved by filming against the light, but you should always take care that the sun does not shine directly into the lens or the selenium cell, and you should use a lens-hood if necessary. A good method of finding the correct stop for against-the-light shots is to make a quarter turn away from the sun with your camera, take a reading, and shoot the scene at the stop thus obtained.

Filming by artificial light

In scenes illuminated by artificial light, the lamps are usually directed on to a certain object. The exposure meter of the EUMIG C 3 *m*, however, gives an average reading between highlights and shadows, so go right up to the illuminated object (4'' to 1'8'' away according to its size) and take a reading. Then return to your original viewpoint, and film the scene from there.

If you are making colour shots by artificial light, it is absolutely essential to use artificial-light colour film—daylight colour film will give completely wrong colour renderings.

Night filming

Night scenes of streets with normal lighting and neon signs can perfectly well be filmed at stops from $f/1.8$ to $f/4$ (the latter for very bright light), although the exposure meter cannot indicate this, the reason being, as mentioned before, that the meter gives an average value between light and dark, while, in the scenes in question, the illuminated points make up only a very small fraction of the total picture area.

Movement of the camera

It is best of all to avoid any movement of the camera, for the film comes to life through the movement of objects before a motionless camera, and not through the movement of the camera itself.

There are, nevertheless, cases in which movement of the camera can be effective, for example, in panorama shots. Pan the camera very slowly and smoothly, allowing about 10 to 12 seconds for panning through 90° with a distant scene, and always in one direction only—as a rule either horizontally or vertically. When panning without a tripod, move only the upper part of the body, keeping the feet quite still. In order to give a feeling of rest, film for about one second with the camera steady at the beginning and end of each panorama shot.

In filming fast-moving objects (for example, cars, galloping horses, etc.) you can swing the camera very quickly—this is known as a swish pan. The background is blurred in such shots, but this is actually an advantage, as it adds to the impression of speed.

The advantage of the coupled exposure meter becomes particularly evident in panning, as you can make diaphragm adjustments while actually filming.

Single-shot filming

Very attractive effects can be achieved with the single-shot mechanism, but it is absolutely essential to use a tripod, as all your efforts will be wasted if there is the slightest movement of the camera between shots.

To produce a time-condensation effect, say, to accelerate the motion of clouds to many times the natural speed, you can expose one frame per second instead of the normal sixteen, using the single-shot mechanism. When the film is projected at a constant speed of 16 frames per second, the scene will appear to take place at sixteen times its natural speed, and the clouds will seem to be racing across the sky. You can also use the single-shot mechanism for trick titles and numerous other attractive effects.

Depth of field

The table below gives the exact depths of field for all three lenses.

Depths of focus for EUMIG C 3 *m* with normal lens *f*/1.8 12.5 mm.

	1,8	2,8	4	5,6
10"	$9\frac{1}{2}" - 10\frac{3}{16}"$	$9\frac{3}{8}" - 10\frac{3}{8}"$	$9\frac{3}{16}" - 10\frac{5}{8}"$	$8\frac{15}{16}" - 11"$
1'	$11\frac{3}{8}" - 1\frac{5}{16}"$	$11\frac{1}{8}" - 1\frac{5}{8}"$	$10\frac{13}{16}" - 1'1"$	$10\frac{1}{2}" - 1'1\frac{1}{2}"$
1'4"	$1'3\frac{1}{8}" - 1'5"$	$1'2\frac{3}{4}" - 1'5\frac{1}{2}"$	$1'2\frac{1}{4}" - 1'6\frac{1}{4}"$	$1'1\frac{5}{8}" - 1'7\frac{3}{8}"$
2'	$1'10\frac{1}{8}" - 2'2\frac{1}{4}"$	$1'9\frac{3}{16}" - 2'3\frac{5}{8}"$	$1'8\frac{3}{8}" - 2'5\frac{5}{8}"$	$1'7" - 2'8\frac{5}{8}"$
3'	$2'7\frac{7}{8}" - 3'5\frac{5}{16}"$	$2'6" - 3'9"$	$2'4" - 4'2\frac{1}{2}"$	$2'1\frac{3}{4}" - 5'3\frac{3}{16}"$
5'	$4'1\frac{3}{8}" - 6'4\frac{5}{8}"$	$3'8\frac{7}{8}" - 7'6\frac{1}{2}"$	$3'4\frac{1}{2}" - 9'7\frac{7}{8}"$	$3' - 15'4\frac{7}{8}"$
20'	$10'8\frac{3}{4}" - 161'$	$8'5\frac{3}{4}" - \infty$	$6'9\frac{3}{4}" - \infty$	$5'4\frac{3}{4}" - \infty$
∞	$22'10" - \infty$	$14'8" - \infty$	$10'3\frac{1}{2}" - \infty$	$7'4" - \infty$
	8	11	16	22
10"	$8\frac{9}{16}" - 11\frac{9}{16}"$	$8\frac{3}{16}" - 1'3\frac{3}{8}"$	$7\frac{5}{8}" - 1'2"$	$7\frac{1}{16}" - 1'4\frac{11}{16}"$
1'	$10" - 1'2\frac{3}{8}"$	$9\frac{1}{2}" - 1'3\frac{11}{16}"$	$8\frac{3}{4}" - 1'6\frac{1}{2}"$	$8" - 1'11\frac{5}{8}"$
1'4"	$1'7\frac{7}{8}" - 1'9\frac{1}{4}"$	$1' - 2'5\frac{5}{16}"$	$10\frac{3}{4}" - 2'8"$	$9\frac{5}{8}" - 3'5"$
2'	$1'5\frac{1}{2}" - 3'2\frac{5}{8}"$	$1'3\frac{7}{8}" - 4'2\frac{1}{4}"$	$1'1\frac{3}{4}" - 8'5\frac{1}{4}"$	$11\frac{7}{8}" - \infty$
3'	$1'11" - 7'1\frac{1}{2}"$	$1'8\frac{1}{4}" - 14'5\frac{7}{8}"$	$1'4\frac{1}{2}" - \infty$	$1'2\frac{1}{8}" - \infty$
5'	$2'6\frac{3}{4}" - 156'8"$	$2'2" - \infty$	$1'8\frac{3}{4}" - \infty$	$1'4\frac{3}{4}" - \infty$
20'	$4'1\frac{3}{8}" - \infty$	$3'2\frac{1}{8}" - \infty$	$2'3\frac{3}{4}" - \infty$	$1'8\frac{7}{8}" - \infty$
∞	$5'2" - \infty$	$3'9" - \infty$	$2'7" - \infty$	$1'10" - \infty$

Depths of focus for EUMIG C 3 m with tele attachment 2.5×31.25 mm.

	1,8	2,8	4	5,6
5'	$4'9''-5'3\frac{1}{8}''$	$4'7\frac{3}{4}''-5'5''$	$4'6''-5'7\frac{3}{8}''$	$4'4''-5'10\frac{3}{4}''$
8'	$7'5''-8'8''$	$7'1\frac{5}{8}''-9'1\frac{1}{8}''$	$6'9\frac{7}{8}''-9'7\frac{7}{8}''$	$6'5\frac{1}{4}''-10'6\frac{1}{4}''$
12'	$10'9''-13'6\frac{5}{8}''$	$10'2''-14'7\frac{1}{2}''$	$9'6\frac{1}{2}''-16'1\frac{1}{2}''$	$8'9\frac{1}{2}''-18'8''$
30'	$23'4\frac{1}{4}''-41'10\frac{1}{2}''$	$20'9\frac{1}{2}''-53'8''$	$18'4\frac{1}{2}''-81'$	$15'11''-251'$
120'	$56'4''-\infty$	$43'5''-\infty$	$34'1''-\infty$	$26'6''-\infty$
∞	$106'4''-\infty$	$68'4''-\infty$	$47'9''-\infty$	$34'1''-\infty$
	8	11	16	22
5'	$4'1\frac{1}{4}''-6'4\frac{5}{8}''$	$3'10''-7'1\frac{1}{2}''$	$3'5\frac{5}{8}''-8'9\frac{3}{4}''$	$3'1\frac{1}{4}''-12'3\frac{1}{4}''$
8'	$5'11\frac{3}{8}''-12'1\frac{7}{8}''$	$5'5''-16'$	$4'8\frac{1}{2}''-25'$	$4'1''-118'6''$
12'	$7'11''-24'5''$	$7'1\frac{1}{4}''-39'8''$	$5'11''-\infty$	$4'11\frac{1}{2}''-\infty$
30'	$13'2\frac{1}{2}''-\infty$	$10'11''-\infty$	$8'5\frac{1}{2}''-\infty$	$6'7\frac{1}{2}''-\infty$
120'	$19'10''-\infty$	$15'1''-\infty$	$10'9''-\infty$	$8''-\infty$
∞	$23'10''-\infty$	$17'3''-\infty$	$11'10''-\infty$	$8'7''-\infty$

Depths of focus for EUMIG C 3 m with wide-angle attachment 0.5×6.25 mm.

	1,8	2,8	4	5,6
4"	$3\frac{7}{8}" - 4\frac{1}{8}"$	$3\frac{7}{8}" - 4\frac{3}{16}"$	$3\frac{3}{4}" - 4\frac{1}{4}"$	$3\frac{5}{8}" - 4\frac{3}{8}"$
5"	$4\frac{13}{16}" - 5\frac{1}{4}"$	$4\frac{3}{4}" - 5\frac{3}{8}"$	$4\frac{9}{16}" - 5\frac{1}{2}"$	$4\frac{7}{16}" - 5\frac{7}{8}"$
6"	$5\frac{5}{8}" - 6\frac{3}{8}"$	$5\frac{1}{2}" - 6\frac{5}{8}"$	$5\frac{3}{8}" - 6\frac{7}{8}"$	$5\frac{1}{8}" - 7\frac{3}{8}"$
10"	$9" - 11\frac{1}{4}"$	$8\frac{1}{2}" - 1\frac{1}{4}"$	$8" - 1\frac{1}{2}"$	$7\frac{1}{2}" - 1\frac{3}{8}"$
1' 4"	$1' 1\frac{3}{8}" - 1' 8\frac{1}{8}"$	$1' \frac{1}{4}" - 1' 11\frac{1}{2}"$	$11\frac{1}{8}" - 2' 5\frac{3}{4}"$	$10" - 3' 10\frac{5}{8}"$
2'	$1' 6\frac{1}{4}" - 2' 11\frac{1}{2}"$	$1' 4\frac{1}{4}" - 4' 5\frac{1}{8}"$	$1' 2\frac{1}{4}" - 7' 5\frac{3}{8}"$	$1' 3\frac{1}{8}" - \infty$
5'	$2' 8\frac{3}{4}" - 35' 1"$	$2' 2\frac{3}{8}" - \infty$	$1' 9\frac{3}{8}" - \infty$	$1' 5\frac{1}{8}" - \infty$
10'	$5' 6" - \infty$	$3' 9\frac{1}{8}" - \infty$	$2' 8" - \infty$	$2' 11\frac{1}{8}" - \infty$
	8	11	16	22
4"	$3\frac{9}{16}" - 4\frac{5}{8}"$	$3\frac{7}{16}" - 5"$	$3\frac{1}{4}" - 5\frac{5}{8}"$	$3\frac{1}{16}" - 6\frac{7}{8}"$
5"	$4\frac{1}{4}" - 6\frac{1}{4}"$	$4" - 7"$	$3\frac{3}{4}" - 8\frac{3}{4}"$	$3\frac{1}{2}" - 1' 1\frac{1}{8}"$
6"	$4\frac{7}{8}" - 8\frac{1}{4}"$	$4\frac{1}{2}" - 9\frac{5}{8}"$	$4\frac{1}{8}" - 1' 2"$	$3\frac{3}{4}" - 2' 11\frac{3}{8}"$
10"	$6\frac{3}{4}" - 1' 9\frac{7}{8}"$	$6\frac{1}{8}" - 3' 6\frac{5}{8}"$	$5\frac{1}{4}" - \infty$	$4\frac{5}{8}" - \infty$
1' 4"	$8\frac{3}{4}" - 3' 4\frac{7}{8}"$	$7\frac{1}{2}" - \infty$	$6\frac{1}{4}" - \infty$	$5\frac{1}{4}" - \infty$
2'	$10\frac{3}{8}" - \infty$	$8\frac{3}{4}" - \infty$	$7" - \infty$	$5\frac{5}{8}" - \infty$
5'	$1' 1\frac{3}{8}" - \infty$	$10\frac{1}{2}" - \infty$	$8" - \infty$	$6\frac{1}{4}" - \infty$
10'	$1' 3\frac{3}{8}" - \infty$	$1' 3\frac{1}{8}" - \infty$	$8\frac{7}{8}" - \infty$	$6\frac{3}{4}" - \infty$

And now we wish you much pleasure with your

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