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OTHER MINOX CAMERA ATTACHMENTS

Minox Measuring Chain

This is supplied with the camera to protect the instrument against being accidentally dropped, and serves as a measure for short distances.

To attach the chain to the camera, insert the rectangular plug at the end of the chain into the corresponding chain-socket on the camera. This socket is normally covered by a spring loaded dust cover but will retract into the camera body on pushing the chain-plug into position.

To fix the chain plug, use the D-shaped ring attached to it in the manner of a screw driver. Inserting it into the slot of the plug disc, press against the camera chain socket and give the plug a quarter turn to the right, when it will be securely fitted to the camera.

The chain is fitted with beads at distances corresponding exactly to the shortest distances engraved on the distance scale of the camera. With the chain fixed to the camera and held taut the first bead (indicating the shortest extension) equals 8 inches, the second bead 10 inches, the third one 12 inches and the last one 18 inches. The full length of the chain is 2 feet.

Minox Tripod Head

This is a camera cradle with a clamping arm, which carries the cable release thread and has at its end a tripod socket. It is therefore required when using a cable release or if the camera is to be mounted on a tripod.

To fix the camera to the tripod head make sure that the rectangular locking lug on the bottom of the clamp is parallel to the longer dimension of the base. Otherwise, turn the knurled knob until the lug is lined up (see page 67).

To insert the camera, swing the clamping arm down, towards the tripod socket. Slide the camera—with the chain removed—into

the clamp jaws so that all controls of the camera face towards the hinge of the clamping arm. Gently press the camera down on to the locking lug and turn the knurled locking knob to the right through one quarter turn. This locks the camera to the base. Now swing the clamping arm up. This will lock the jaws of the clamp and place the cable release socket over the shutter release button of the camera when the camera is in the open picture-taking position. Insert the cable release into its socket.

After each exposure close and open the camera in the usual manner. The camera need not be removed from the tripod head for this operation.

Minox Pocket Tripod

When closed, the pocket tripod is not much larger than a pencil, but steady enough to support even much heavier cameras than the Minox.

It has a built-in ball-and-socket head. When not in use the legs are fitted into each other and the hollow center of the innermost leg houses the Minox cable release.

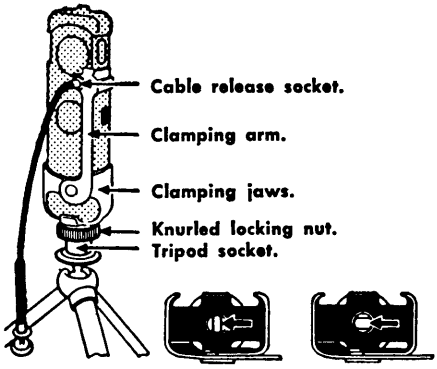
To set up the tripod, unscrew the two small ribbed sections at the lower end of the tripod. Screw the sections into the threads of the tripod top. To get out the cable release unscrew the small knurled disc from the thinnest section and pull it out.

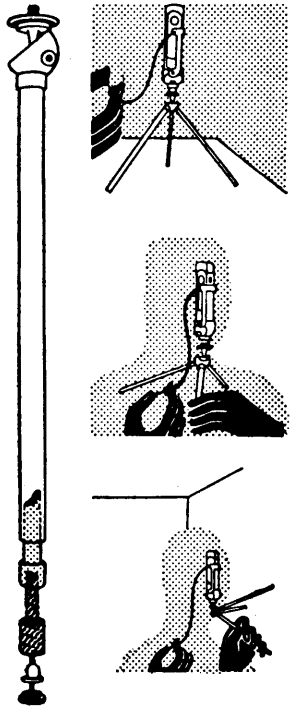
The swivel top may be securely locked in any position by turning the large, fully ribbed section of the tripod. For extra firm locking, the section may be turned by inserting a coin in the slit of the section, using the coin for leverage.

The Minox pocket tripod may be used on any flat surface, or braced against a wall, tree, fence, etc. It may also be held against the shoulder for convenient support of the camera.

Whenever light conditions call for shutter speeds of 1/20 second or longer, the Minox tripod will assure a steady camera hold and sharp pictures.

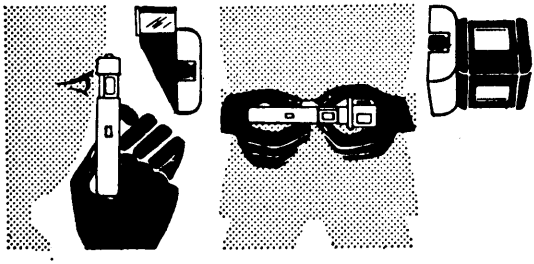
The Minox pocket tripod, together with the Minox tripod head,





The Minox tripod head is a camera cradle with clamping arm which carries the cable release socket and has at its end a tripod bush. Make sure that the locking lug on the clamp bottom is horizontal before inserting camera (*above right*); turn the knurled locking nut if the lens is in the wrong position (*above center*).

Right: The Minox pocket tripod has a built-in ball-and-socket head. When not in use, the legs are fitted into each other and the hollow innermost center houses the cable release. *Far right:* Pocket tripod as table tripod (*top*), as support on your chest (*center*), steadied on a wall (*bottom*).



Left: The Minox right angle finder is placed with its mirror at 45 degrees to the viewfinder over the end of the camera. *Center:* The Minox reflex finder, pushed over the finder end of the camera, shows a clear image at waist level for photographing children, etc. It does not fit the model B Minox.

may be conveniently carried in the pocket in a slim leather sheath case available as an accessory.

Minox Reflex Finder

This shows a brilliant, clearly defined image and is intended for use at waist-level, particularly for photographing children, low subjects, etc. It may also be used as a right-angle finder for upright pictures, but in this position it is suitable only if reasonably fast shutter speeds are used (of 1/100 second or faster) as the camera has to be held in the outstretched hand, where the risk of camera shake is much greater.

The reflex finder is simply pushed over the finder end of the Minox camera.

Minox Right-Angle Finder

This finder permits taking snapshots at right angles to the viewing position, for unobserved working. As you photograph, so to speak, round the corner, the subject remains unaware of the attention it receives.

The right-angle finder consists of a right-angle mirror in a light-metal cap which fits over the finder end of the camera. It places the mirror at 45 degrees to the viewfinder opening. On looking into the mirror you can observe the subject reversed, left-to-right. The camera lens points at the subject but the photographer faces at right angles to it.

Minox Belt Case

To be prepared for picture-taking any time of the day or night and under any lighting condition, carry your Minox and a flashgun in the convenient leather belt case.

For the Minox III S and Minox B, cases are available in brown, black or red leather.

A special case is available for carrying Minox B and Model U B/C Flash.

DEVELOPING AND ENLARGING

Many Minox users will be quite happy to get their negatives developed and enlarged by a photographic dealer who specializes in Minox service. The manufacturers of the Minox, however, have also made a special developing tank for processing Minox negatives, and an enlarger designed to give the maximum picture quality for Minox negatives, as no ordinary enlarger could.

The Minox Developing Tank

The tank is a daylight loading model and requires no darkroom. Films may be inserted and completely developed in full daylight. A thermometer to check the temperature of processing solutions is supplied with the tank.

While the process of development is an extensive subject dealt with in standard textbooks, the following instructions for handling the developing tank, together with the set of processing chemicals supplied for the Minox, will allow even the novice to develop his Minox film correctly.

Using the Minox Developing Tank

Before using the tank, make sure it is perfectly dry. The tank consists of a body, and a drum with a spiral film groove, which screws in and out of the lid. The drum is connected to the lid (which also has a cassette holder on its underside), but both can be lifted off from the body before or after screwing out the film drum by turning clock-wise.

1. Pull out film leader.
2. Insert cassette in top part and attach film leader.
3. Assembly tank.
4. Screw back drum.
5. Pour developer in slowly.
6. Agitate with thermometer.

7. Pour developer out.
8. Rinse and fix.
9. Wash.
10. Unload film.
11. Hang up to dry.
12. Cut up and file.

1. The cassette consists of two chambers: the feed chamber which is plain on both sides, and the take-up chamber which carries a round hole (to engage the transport shaft of the camera). Pull the film end out of the *feed chamber* (not the take-up chamber). This end has a punched hole and a smaller slot leading away from it.

2. Turn the top part of the tank upside down (with the drum screwed out). Place the cassette in position between the holding lug and the drum, push the film end under the spring, and button it to the screw. Screw the drum in slightly so that the screw properly engages the film slot, with the film lying flat and smooth in the groove.

3. Place the tank body over the top part, taking care that the parts fit together properly.

4. Invert the tank, and turn the drum counter-clockwise to screw it back into the tank. The end position is reached when the spring-loaded hook on the lid engages and stops the top end of the drum.

5. Slowly pour 2 ounces (53 c.cm.) of developer (preferably filter first) through the central opening of the tank. The liquid should be visible in the wide part of the opening. Gently tap the tank on the table to dislodge air bells.

6. Place the thermometer in the central opening and slowly move it up and down to make the developer circulate. Check and maintain the recommended developer temperature.

7. After the required time, pour the developer out. Hold the top of the tank in place with one finger to prevent it from sliding out of the tank.

8. Fill and empty the tank two or three times with clean water (at the same temperature as the developer) and pour the fixing solution in (also at the same temperature). Leave for 15-20 minutes, then pour out and fill the tank with water again.

9. Put the tank under the tap so that a thin stream of water (preferably filtered) runs down the central opening. Wash in this way for 20-30 minutes (at developer temperature).

10. Remove the top of the tank with the drum from the tank. Hold the top part in the left hand, with the drum horizontal, and turn the drum clockwise. The film winds itself off in a loop.

11. Pin the film leader to a convenient shelf, and let the whole film hang down, with the empty cassette acting as a weight at the other end. Dry in a dust-free room and leave as undisturbed as possible. Use of a final rinse in a wetting agent-solution minimizes the risk of water marks and uneven drying.

12. Cut the film up into strips of 10 negatives and file in the negative envelope.

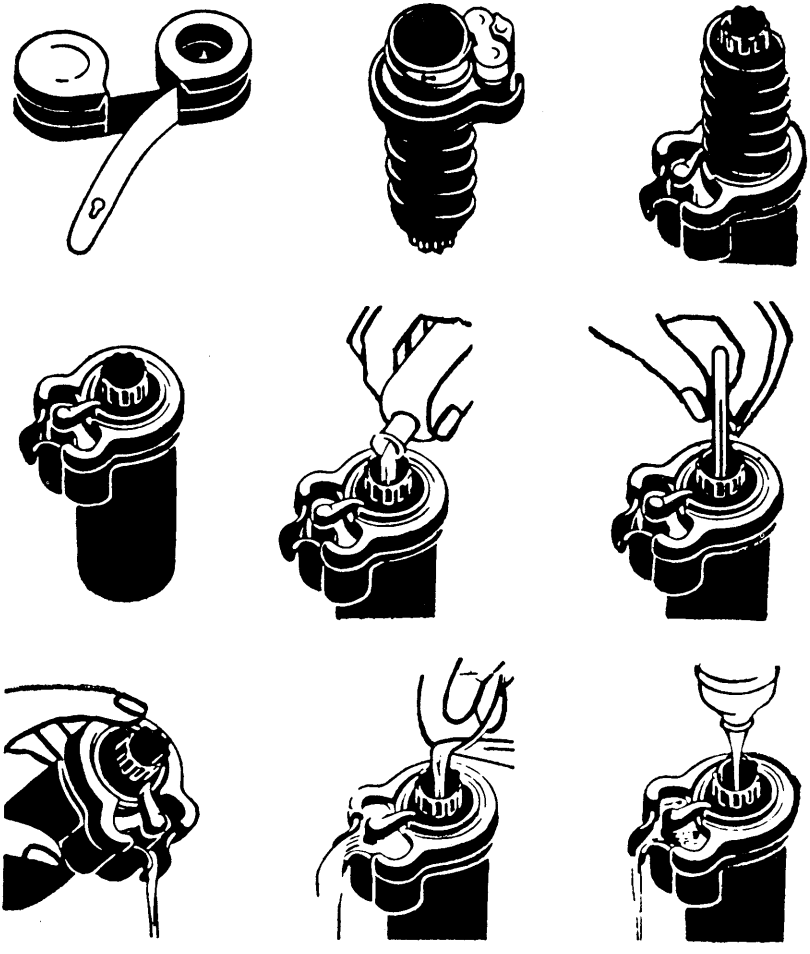
Developing 36-Exposure Films in the Minox Tank

The Minox Developing Tank is designed to take the longest available Minox films, i.e. 50 exposures. The instructions supplied with the tank apply to full 50-exposure loads.

The following instructions apply only to 36-exposure films:

When inserting 36-exposure films into the tank, the spiral drum will meet resistance after it has been turned about three-quarters into the tank. This indicates that the film has been fully withdrawn from the film cartridge, the film end remains anchored to the cartridge. Do not turn the drum any further into the tank.

36-exposure films require 2 *ounces* of all solutions, since the spiral drum, being only partly inserted, does not displace as much liquid as when fully turned in.



Description opposite

The Minox developing tank can be loaded and the film developed in daylight; no darkroom is required. The sequence of operations is as follows.

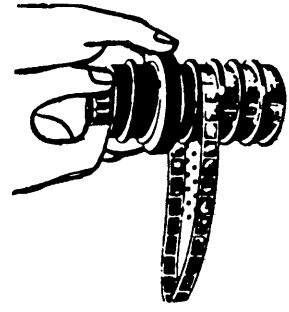
Opposite top row: Pull out film leader from the solid chamber of the cassette (*left*); place cassette between holding lug and drum, push film end under the prong and button it to the screw (*center*); place the tank drum over the support, ensure correct fit, and screw it counterclockwise into the tank (*right*).

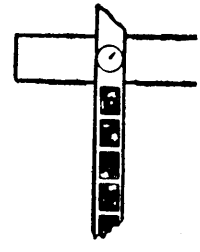
Opposite middle row: Stop when the spring loaded hook engages on the lid (*left*); pour slowly 2 oz. developer into tank (*center*); insert thermometer into central opening, moving it slowly up and down to agitate the developer (*right*).

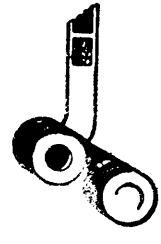
Opposite bottom row: After developing pour developer out while holding top part of tank in place (*left*); rinse tank with water two or three times, then pour in fixer (*center*); after fixing wash in running water (*right*). Wetting agent may be used in final rinse.

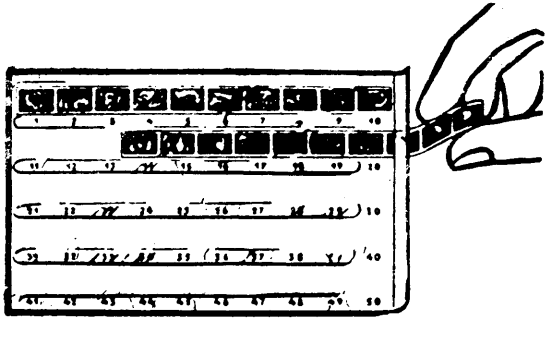
Top right: Remove drum and top part of tank. While holding the top part turn drum clockwise horizontally, whereby film will wind itself off.

Center right: Suspend film for drying in a place free from dust.









Cut the film up into 5 strips of 10 pictures and insert into negative envelope. First cut off the empty cassette, then the first strip of 10 negatives which are inserted emulsion side down and with picture No. 1 in front. Follow with the other strips.

After use, remove the drum of the tank from the top part. Thoroughly clean and dry all parts of the tank; do not re-assemble until completely dry.

Caution: After the drum has been turned into the tank, it must not be turned back. Otherwise the film may become disengaged from the drum and cause scratches on the emulsion.

Minox Negative Envelope

As it is absolutely essential that the Minox negatives are not touched by hand or open to dust, dirt, etc., a special negative envelope has been designed. It consists of a stiff transparent plastic envelope to accept 5 strips each of 10 negatives. You can therefore file a complete film on one sheet. The strips between the negatives are numbered from 1 to 50, so that each negative can be clearly identified.

This 50-frame transparent envelope is supplied in a cardboard cover with space for full data for each negative. After processing, each Minox film should immediately be cut up into strips of ten frames and placed into the negative envelope. Otherwise scratches, marks, etc., are simply unavoidable. The best way of doing that is to start by cutting off the empty cassette at the first frame. Then cut off the first ten frames and slide the strip —emulsion side down and with No. 1 leading—into the first section of the negative envelope. Proceed with succeeding strips in the same way. All the negatives are then in their correct order, and correctly orientated.

Minox Film Viewing Magnifier

This shows the negative at approximately the same apparent size as a standard 3½ X 4½ inches enlargement at normal viewing distance. The viewing magnifier is pushed over the transparent negative envelope (see above) so that the negative does not need to be removed from the envelope for inspection.

The negative is framed by a metal mask in the magnifier holder to prevent distracting side-light. A cut-out in the frame shows also the number of the negative being examined.

The magnifier may be removed from its frame to be used for other purposes or to be inserted into the frame of the transparency viewer and cutter (page 79).

Minox Developing Chemicals Kit

A special set of chemicals is available for the development of Minox films. It consists of 15 bags of each of the two developer components required, 15 bags of fixer and 15 bags of wetting agent. The bags are of thermoplastic foil and air-tight as well as water-proof. Each developer set makes 2 ounces (53 c.cm.) of solution, that is the correct amount required for the Minox tank.

The developer itself is a fine grain developer, producing almost grainless results, without requiring extra exposure.

To make up the developer dissolve the contents of one bag of developer substance A completely in about 1 ounce (30 c.cm.) of water at not more than 100 F. Add part B slowly under constant stirring. When everything is dissolved completely, fill up to 2 ounces (53 c.cm.).

The development time for slow films is 10 minutes, for medium speed and fast films 14 minutes, always at 65-67° F. Keep to this temperature.

Prepare the fixer by dissolving the contents of a bag of fixing salt, which you will find in the lower part of the packing, in 2 ounces (53 c.cm.) of water.

This developer is unsuitable for the copying film, for which the conventional contrasty developers should be employed.

To prevent streaks and drying spots it is advisable to soak the film after the final wash for 1-2 minutes in a wetting agent. To make up this bath dissolve the contents of the bag marked "wetting agent" in 1 quart of water.

Enlarging Minox Negatives

Enlargement of the negatives follows the procedure outlined in any standard textbooks on the subject. Extra care is, however,

necessary to deal with the small negatives and to avoid spots, scratches and other defects.

A special Minox enlarger has been designed for enlarging Minox negatives to retain the highest possible definition by allowing for the curvature given to the films in the camera. The liberal dimensions adopted in conjunction with use of an inclined column ensure vibration-free work and permit the lens-mount to be adjusted with maximum accuracy.

The Minox Enlarger

The baseboard permits enlargements up to 10 X 14 inches to be made on it. For even bigger enlargements the image may be projected horizontally onto a wall by using a surface-silvered mirror. The baseboard is covered with a rubber top to avoid unintentional movement of the masking frame.

The light source is a 6 volt 6 amp. filament lamp. It receives its current via the transformer which is housed in the base of the instrument. Before connecting the enlarger (to A.C. current supply only) the line voltage should be checked. The instrument is properly set if one core of the cable coming from the switch is connected to the clamping screw of the transformer corresponding to the main voltage of the supply available.

The lamp has a bayonet socket and is inserted in such a way that the transverse filament within the bulb points downwards towards the baseplate.

A dimming switch is built-in at the right of the foot of the column. This can be set to bright or dimmed illumination. Use bright light for focusing.

The lamphouse, together with the film stage and lens, is adjustable in height on the column by pressing the height adjustment lever inwards. The lamphouse can be opened by pressing the button near the top rim on the back of the lower part of the housing. To close it place the front hole over the corresponding retaining pin, pull down the top towards the back, depressing the button, and let the top click into place.

The film guide keeps the negative in the correct position during the enlarging process. It consists of two metal masks. To

obtain the best possible definition the masks are curved. To interchange the upper backing plate, lift the lever at the right of the lens. In this position the pressure on the film is released and the backing plate can be pulled out. To insert the backing plate push it into position from the front.

To insert and align the negative strip the top backing plate has to be in the lifted position to clear the film. After positioning hold the film in place with both thumbs and index fingers, at the same time using the middle finger of the right hand to press the lever down into its horizontal position. Lift the lever (to take off back plate pressure) when moving the film to the next frame. This is best done by holding it between the middle and fourth fingers of the right hand.

The size of enlargement is set by raising or lowering the lamphouse. Simply depress the lever on the sliding lamphouse arm, and move the latter up or down. Release the lever when the lamphouse is in the required position.

To focus the lens rotate its lower knurled collar. The lens is of highest optical quality, and is coated. In conjunction with the curved negative carrier it will yield perfect definition.

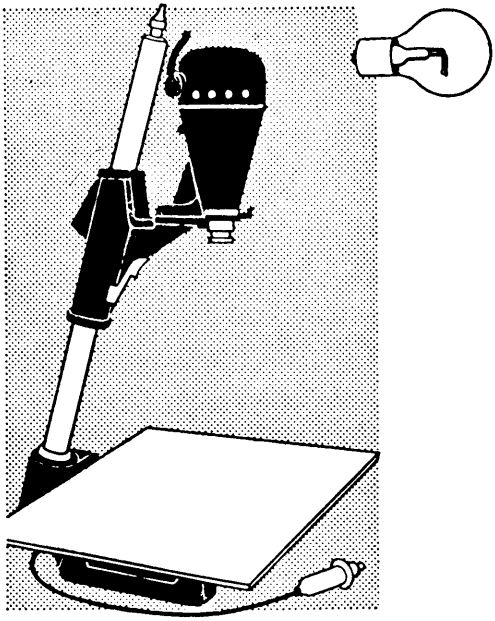
A red filter, sometimes used to position the enlarging paper while the light is switched on, is available as an extra. It is simply clamped on to the rib of the tubular guide on the enlarger.

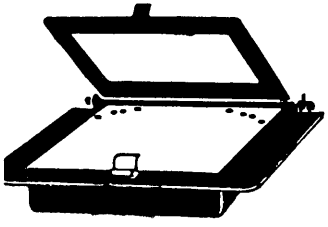
For cleaning, the lens can be detached and the lower film guide mask removed by turning the upper knurled lens ring to the left, thereby unlocking it.

The tilting lamphouse facilitates getting at the condenser or the negative in order to clean them.

To clean the lamphouse, open it as described above. The lens should be cleaned only with a piece of fluffless well washed linen wrapped round a matchstick, or special lens tissue. When reinserting the lens take care that the cutouts on the rear lens barrel engage the pin situated on the side of the film guide next to the column.

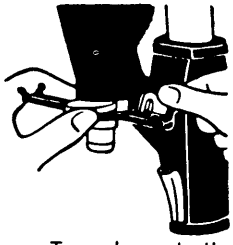
A push-button switch in the cable switches the enlarger lamp on and off for exposing the print.



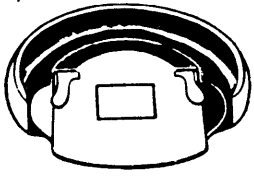


***Above:* Enlarging easel has interchangeable apertures in three sizes from 2½ × 3½ to 4 × 5 in.**

The Minox enlarger is designed to retain the highest possible definition by allowing for the curvature given to the film in the camera. The baseboard permits up to 10 x 14 in. enlargements. It uses a 6-volt 6-amp. lamp, the film guide consists of two metal masts. Below right: To remove pressure on the film (for transport) lift the lever on right side of lens, this also permits removal of backing plate.



Below: To enlarge badly scratched or otherwise damaged negatives without making these faults too pronounced, an opal glass can be placed into the upper film guide mask. An opal glass that may be swung into place is built into the latest Model III Minox enlarger. The exposure time will be somewhat longer and the contrast slightly lowered.



Hiding scratches in negatives. The optical system is designed to ensure perfect definition over the entire negative area, but is soft enough to hide slight negative defects.

To enlarge badly scratched or otherwise damaged negatives without making these faults too pronounced a built-in opal glass may be swung into place. The exposure time will be somewhat increased and the contrast slightly lowered. This latter fact is an advantage for contrasty negatives; for normal ones it can be compensated for by using a slightly more contrasty paper.

Direct current. If only D.C. is available, the enlarger will operate via a series-resistance, which is available for various voltages from 110 to 220 volts. No transformer is required.

A special enlarging easel with interchangeable masks is available for use with the Minox enlarger. The frame accepts any of the four masks corresponding to the usual sizes: 2½ X 3½, 3¼ X 4½ and 4 X 5 in. The masks can be inserted or changed in a matter of a few seconds.

The frame is automatically fixed on the baseboard in any required position.

Transparencies

Color films yield transparencies instead of negatives, and these may be viewed in a suitable viewer or projected on a screen.

Color enlargements are available from local photofinishers, or you may make these yourself on Anscochrome Printon or Kodak Ektachrome Paper (Type R.).

Minox Transparency Viewer and Cutter

The strips of color transparencies (or black-and white) can, of course, be viewed with the negative viewer and magnifier (page 74), but the transparencies have to be cut into single frames if they are to be mounted into the Minox transparency frames to be used in a projector.

For this reason a special viewer has been designed which has in addition a built-in cutting template and knife. When the transparency is correctly positioned in the magnifier, a slight pressure with the thumb on the knife blade cuts the transparency out of

the strip. It seems needless to state that for viewing transparencies they should remain in the negative envelope, while for cutting they have to be removed. The cut transparency has the correct dimensions for fitting into the Minox transparency frame (see below).

The slip-in magnifier is the same as used for the negative viewer and can therefore be used for both devices.

Mounting Transparencies

Special 3 X 3 cm. transparency frames are available to mount the Minox 8 X 11 mm. transparencies for projection in the Minox slide projector (see page 83).

Mount the slides in a room free from flying dust.

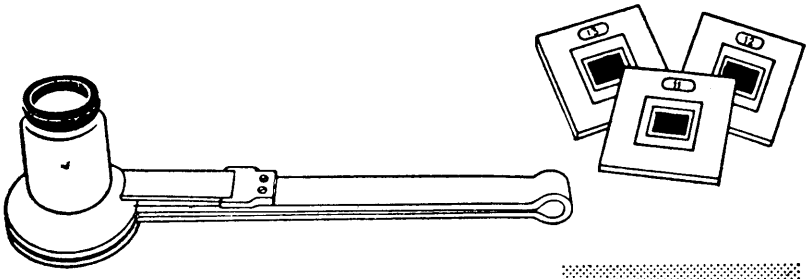
The cover glasses supplied with the Minox slide frames have been carefully cleaned before wrapping. They should therefore remain in their original packing until needed and remaining glasses carefully rewrapped. In this way you can save the arduous work of cleaning cover glasses.

For accurate and convenient cutting of the transparencies the viewer and cutter (see page 79) should be used.

To mount the transparency into the frame proceed as follows:

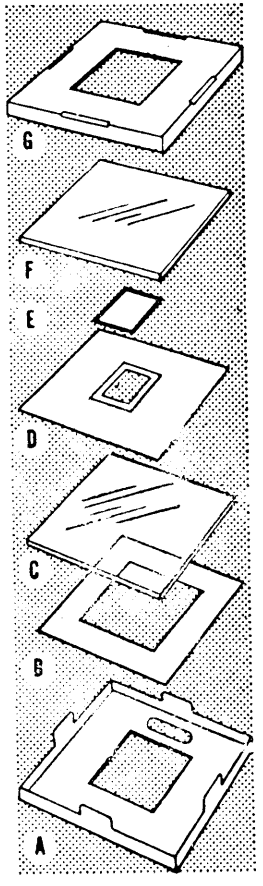
1. Place metal frame with index window on table with index window away from you, the four (on latest versions, two) tongues facing up.
2. Insert a paper mask.
3. Insert one cover glass (hold at edges only).
4. Insert a metal mask with indented frame facing up; position mask for vertical or horizontal transparency.
5. Place the transparency into the frame with the dull side up, so that the picture is upside down.
6. Insert the second cover glass.
7. Place the slotted metal frame over the tongues of the lower frame.
8. Bend the tongues towards the center of the frame with the end of a pencil or similar tool; smooth the tongues flat.
9. Write the file or reference number in the film window.

For correct projection, the slide is placed in the projector

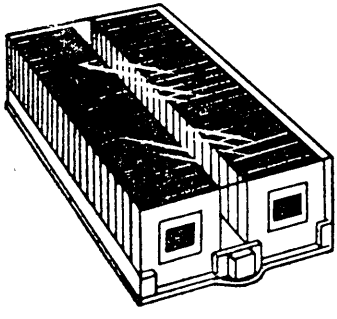


Above: The Minox transparency viewer and cutter permits inspection of strips of color and black-and-white transparencies and has a cutting template and knife built in. Slight pressure on the handle cuts the transparency out of the strip.

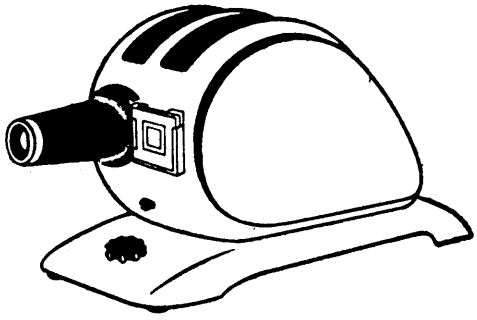
Right: Special 3 × 3 cm. transparency frames are available to mount the Minox 8 × 11 mm. transparencies for projection in the Minox projector. The order of assembly of the frame is: A place frame with four tongues up in front of you, B insert paper mask, C top with cover glass, D cover with metal mask, indented frame up, E place transparency (dull side up, picture upside down) into the frame, F top with second cover glass, G place slotted frame over tongues of lower frame and bend tongues in. The latest frames have only two tongues and slots instead of four, as shown.

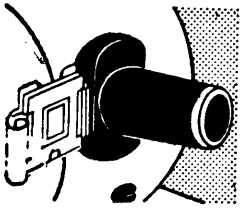


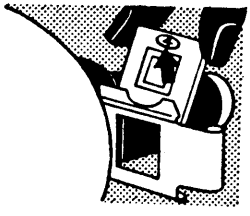
Below: The dust proof transparent plastic box holds 50 mounted transparencies. An index card, placed on top can be read without opening the box.

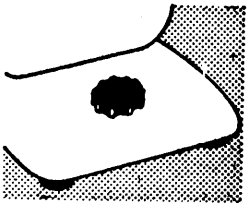


Right: The Minox slide projector model 30 is the most satisfying means of showing color (and black-and-white) Minox transparencies.

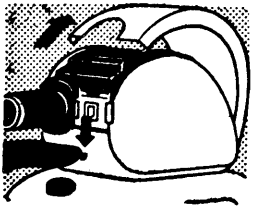


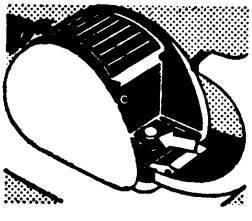


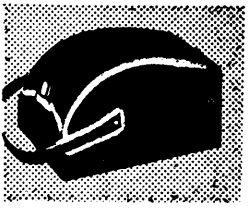




Left: The lens is set in a focusing mount in front of the horizontal slide changer. *Center:* The transparency is inserted so that its number is on the top and faces to the back. *Right:* An adjustment knob permits tilting up or down to align the screen picture.







Left: The lamp house is opened on pressing the black button below the lens. *Center:* The lamp adjustment screw allows re-setting the lamp. *Right:* The carrying case protects the instrument from dust and allows safe, easy transport.

slide changer with the index window on top and facing to the rear of the projector.

Remove any dust from the cover glass with a camel's hair brush; fingerprints or other smudges may be removed with a chamois cloth, lens tissue or other lintless, soft material.

Minox transparency mounts are now available with metal masks in the 10 X 14 mm. size to incorporate 16 mm. slides.

Minox Transparency Storage Box

For convenient and dustproof storage of the mounted transparencies a transparent plastic box has been designed to accept 50 Minox transparencies. An index card for full data of each transparency is provided, which—if placed on top inside the box —can be read from outside.

Minox Slide Projector Model 30

This projector has been designed for the projection of 8 X 11 mm. Minox transparencies. It is also suitable for other sub-miniature transparencies up to 15 X 15 mm.

It has a coated lens, 100 watt prefocus type lamp and a spherical condenser to yield a sharp and bright image.

Always set up the projector first and switch it on afterwards. When the lamp is switched on, the projector must not be tilted or shaken. When setting up the projector, make sure that air has free access to it from below.

The lens is focused by turning its milled mount until the picture on the screen is sharp. For cleaning purposes, the lens may be turned counter-clockwise as far as it will go and then pulled out towards the front. The lens tube, together with the slide carrier, is also removable. Press it into the projector, and after a turn to the left, pull it out towards the front.

The slide changer is of the push-through shuttle design. Draw it out at one side as far as it will go, insert the transparency frame with the oval white numbered window at the top and facing the back of the projector. The slide holder is then pushed to the other side to its stop. The transparency will now be in the light beam

with the picture appearing on the screen. While this picture is being viewed, the next slide can be inserted in the slide holder.

Turning the black knob on the bottom of the front of the projector adjusts the height, so that the image may be raised or lowered on the screen.

To open the lamphouse, press on the black button below the lens. The lid of the lamphouse will spring up for easy access to the inside of the projector (for example when inserting the lamp or cleaning the condenser lens and heat filter).

CONVERSION OF FEET AND INCHES INTO METRIC UNITS

Some items of equipment or certain materials mentioned in this book may not be freely available in every country. Import and marketing conditions vary widely and are outside the control of the photographic retailer.

Many cameras are marked only in either the metric system or in feet and inches, while some of the tables in this book are also given in only one system. The table shows at a glance equivalent lengths.

Feet and Inches to Metric		Metric to Feet and Inches		
$\frac{1}{8}$ in.	0.32 cm.	0.5 cm.		$\frac{3}{16}$ in.
$\frac{1}{4}$ in.	0.64 cm.	1 cm.		$\frac{3}{8}$ in.
$\frac{1}{2}$ in.	1.27 cm.	2 cm.		$\frac{13}{16}$ in.
1 in.	2.54 cm.	3 cm.		$1\frac{3}{16}$ in.
2 in.	5.08 cm.	4 cm.		$1\frac{9}{16}$ in.
3 in.	7.62 cm.	5 cm.		$1\frac{15}{16}$ in.
4 in.	10.2 cm.	6 cm.		$2\frac{3}{8}$ in.
5 in.	12.7 cm.	7 cm.		$2\frac{3}{4}$ in.
6 in.	15.2 cm.	8 cm.		$3\frac{1}{8}$ in.
7 in.	17.8 cm.	9 cm.		$3\frac{1}{2}$ in.
8 in.	20.3 cm.	10 cm.		$3\frac{15}{16}$ in.
9 in.	22.9 cm.	12 cm.		$4\frac{3}{4}$ in.
10 in.	25.4 cm.	15 cm.		$5\frac{7}{8}$ in.
11 in.	27.9 cm.	20 cm.		$7\frac{7}{8}$ in.
1 ft.	30.5 cm.	25 cm.		$9\frac{13}{16}$ in.
2 ft.	61.0 cm.	30 cm.		$11\frac{3}{4}$ in.
3 ft.	91.4 cm.	40 cm.		$15\frac{3}{4}$ in.
4 ft.	1.22 m.	50 cm.		$19\frac{3}{4}$ in.
5 ft.	1.52 m.	60 cm.		$23\frac{5}{8}$ in.
6 ft.	1.83 m.	80 cm.		$31\frac{1}{2}$ in.
7 ft.	2.13 m.	100 cm.		$39\frac{1}{2}$ in.
8 ft.	2.44 m.	1.5 m.	4 ft	11 in.
9 ft.	2.74 m.	2 m.	6 ft.	7 in.
10 ft.	3.05 m.	2.5 m.	8 ft.	3 in.
15 ft.	4.57 m.	3 m.	9 ft.	10 in.
20 ft.	6.10 m.	4 m.	13 ft.	2 in.
30 ft.	9.14 m.	5 m.	16 ft.	5 in.
40 ft.	12.20 m.	10 m.	33 ft.	0 in.
50 ft.	15.24 m.	15 m.	49 ft.	2 in.
100 ft.	30.48 m.	20 m.	66 ft.	0 in.

When inserting the lamp it must be adjusted for even illumination of the picture area. To do this, open the lid of the lamphouse, place a piece of white cardboard about 12-15 inches in front of the projector and, without inserting a transparency, switch on the light. Manipulate the adjusting screw behind the interior black lamphouse in such a way that the bright square field on the card becomes as evenly illuminated and as bright as can be obtained.

A leather case in which the projector can be safely transported is supplied with the Minox Slide Projector 30. It also protects the projector against dust.

The Minomat

The Minomat is the newest and brightest automatic projector built exclusively for the projection of Minox glass-mounted slides.

This ultra-compact projector measures 9¼" X 8½" X 6".

Clear, brilliant pictures are projected by 35mm *f* 1.6 Minolux projection lens, and fan-cooled 150-watt lamp.

Small, light Remote Control Unit allows completely automatic control of the Minomat at distances up to 32 feet (16 ft. cable and 16 ft. extension cord).

Also available is wireless remote control unit. Master unit has three push-buttons for slide changes and two-way focusing.

Remote control cord and wireless ultrasonic control can be combined with automatic slide timer adjustable from 5-45 seconds.

Custom-fitted carry-all case, 15" X 10½" X 6¾", accommodates all Minomat accessories—power cord, remote control unit, automatic timing device, intermediate plug and 3 slide magazines.

Minomat slide magazine holds 36 metal and glass Minox slides in numbered slots. Minox 30mm X 30mm transparency frames with 8 X 11 mm masks for Minox pictures are currently available; 10 X 14 mm masks for projecting transparencies taken with other ultra-miniature cameras will also be available.

The Minomat projects slides three times larger than other miniature projectors at the same projector-to-screen distances.

SUBJECTS IN FRONT OF THE MINOX

Animals—Our Pets

We only need to watch them at play or in repose to get not one, but a whole series of pictures. The camera is best pre-set for zone focusing (p. 28). A low viewpoint is essential, otherwise we shall dwarf our subject. To get close-up heads, it is best to pre-set the Minox at a fixed distance, attract the attention and expose just as the head comes into range. In the Zoo animals behind bars and mesh netting can be photographed by putting the lens right into the space between the bars or netting to avoid their appearance in the picture. The permission and cooperation of Zoo authorities should of course be secured before placing a camera between the bars of a cage. The chief problem will be the usually distracting and ugly background. By choosing side lighting we can eliminate background detail. At the same time the animal will receive satisfactory modeling and will "stand out" boldly. One should make sure of generous exposure to secure good rendering of fur, skin or feathers. Normal speed material without a filter will serve in most cases.

Architecture

The typical "picture-postcard" view can be bought but not your own personal architectural discovery. So concentrate on detail. The Minox has to be held straight, otherwise everything will appear distorted and toppling over. (Still, intentionally distorted views may be effective. For these you must go quite close to the building and take it at a sharp angle from a low viewpoint.) If you must get a lot into the picture, it is essential to stand well back from the building. With all architecture direct front light is bound to give a flat, uninteresting photograph with little detail. Front-side lighting is almost essential to liven up the subject. Extreme side lighting may produce disturbingly strong shadows casting across important lines and shapes.

The exposure time should be determined, particularly if large patches of shadow are included, by the darkest part in which details are clearly visible.

Children

Children are the most rewarding of all photographic subjects if we succeed in shooting them candidly—unconscious of the Minox. We must take when they do what they like. They should never be asked to pose, to look into the camera or be dressed up for the occasion. It is best to prepare the camera without being obtrusive. Then watch for and have patience till the decisive moment, and shoot quickly. The small size of the Minox helps in making it unobtrusive, making truly candid results easy.

Try not to take too high a viewpoint when photographing children. Use a normal angle with the camera at a height of a child's head or, better still, shoot from a low angle, say the height of your knees. The results will be more natural and pleasing.

Flowers, Plants

The Minox is particularly suited for close-up studies. Slow film is generally the most suitable material, and there are few flower subjects whose delicate tone rendering cannot be improved by the use of the green filter. Flowers and plants should be photographed in natural surroundings, but they need to be isolated from the surroundings. This can be done by choosing a suitable viewpoint for the camera and by clearing the ground near the subject. Both fore- and background should be watched, for if blurred parts of other plants are included in the picture they may spoil the effect. A sheet of not too light colored paper attached to two sticks may be used to form a neutral, restful background; set in a slight curve around the flower it will serve, at the same time, to shield the plant from the wind. The harsh midday sun will be found unsuitable, and diffused, hazy sunlight is as a rule most effective. A small mirror, reflecting light to the shadows, may sometimes be useful. The Minox measuring chain will assure accurate distance setting.

Groups

While the technicalities of photographing groups are not different from those involved in taking portraits, the pictorial side is a problem which needs study if the group is not to look like the all-too-famous "football-eleven." Some sort of occupation serves to join a number of people together in the garden, around the tea table, at sports. If nothing of the kind can be arranged, then group them roughly together, let them talk to each other, but do not let them look into the Minox — deceive them as to the moment of exposure, even pretend to have taken the picture and actually expose when they feel free again. To avoid over-cutting when taking a large number of people you should use a higher viewpoint, a chair, a table or a first-floor window, for example; but do not make it too high, otherwise you will dwarf the figures too much.

Interiors

You will have to content yourself with small sections. Work with Minox solid tripod, as the exposure time is bound to be long — as a rule a few seconds. If a mere "record" of the building is all that is required, the camera should be placed centrally; for a pictorial effect it should be in or near a corner. In public buildings, churches, etc., where artificial light cannot be arranged one will sometimes get striking pictorial patterns by making use of sunshine streaming through windows, though there is a danger here of producing a "patchy" effect. A safer medium, however, is soft, diffused, outdoor light, which will bring out details more clearly without too many heavy shadows. The strong midday light should be avoided. Where the light can be arranged, as for example at home, one can combine daylight with artificial light, using the artificial light to lighten deep shadows, or work in artificial light only. A simple way to get an even, shadowless illumination with one lamp only is to hold the lamp in the hand and swing it slowly in large circles on either side of the camera towards the part of the room to be photographed without letting the light shine directly into the lens.

Landscapes

Distant landscapes rich in small detail will be disappointing,

as will those consisting mainly of "green" values, e.g., meadows with woods in the background. By including a subject of known size, such as a tree, in the foreground, we get a measure of distance in the picture and create an impression of depth. By choosing a high viewpoint we may be able to disentangle an otherwise confused view; low viewpoint, on the other hand, will increase the importance of things near the camera. The skyline, too, may be raised and lowered according to whether a low or high position is chosen for the camera. Even tilting up or downwards is permissible so long as you keep the camera otherwise level and there are no buildings included in the view which may show tilted lines. Tilting upwards emphasizes foreground and diminishes background, a downward tilt will give you more of a bird's eye view. The mood, or atmosphere of a landscape depends to a great extent on two factors—sky and distance. To obtain the impression, given by objects which gradually fade into the distance, of contrasting colors and cloud formations we must use slow film. But even this highly suitable material requires further correction in color balance if it is to bring out the clouds against a blue sky. This is a task for the green filter, which will also differentiate between the various shades of green in a landscape. Front lighting, which is bound to give a flat, lifeless impression, is to be avoided. The interplay of light and shade resulting from side lighting will give the picture body and life. Backlighting, that is, with the camera direct against the light, may produce striking effects, emphasizing outlines and suppressing details.

Mountains

With the Minox, impressive distant peaks will appear miserably small. On the other hand, when moving among or upon the mountains, the Minox will come in useful to produce a survey particularly when care is taken to include sufficient foreground to create the impression of depth. Slow material should always be used with the green filter at heights up to 6,000 ft.

The Minox Binocular Attachment (see p. 61) used with suitable binoculars can make impressive closeups of distant mountains.

Night Photography

The Minox must be mounted on its tripod, with a medium

fast film and exposure time of 30 secs. to 2 minutes will be required according to the illumination available. Floodlit buildings, lighted shop windows, illuminated advertisements, brilliantly lit shopping centers, can be taken with relatively short exposure times of about 1/20 sec. on the fastest film, action shots at night of people looking in windows, or slow traffic in main street and similar subjects with fastest film can be risked with 1/20 to 1/50 sec.

Panoramas

A panorama view can be obtained by taking a number of photographs which slightly overlap each other. These photographs are joined together to form one picture after the overlap has been cut off. The Minox should be used on a tripod with a panoramic head. The panoramic head allows the camera to be turned smoothly, a degree-scale indicating the angle through which the camera has been turned. It is essential that the camera should be mounted strictly level; otherwise the horizon line cannot be linked up. A spirit level should be used whenever possible.

Portraits

First and foremost, get away from the fear of approaching your subject closely. The photograph which is half landscape with a figure placed half-heartedly somewhere in it is not a portrait. With the Minox, about 3 ft. is the most useful portrait distance. At this distance the head is sufficiently large yet there is not too much perspective distortion. The background deserves special consideration. The less prominent it is the better; it should be kept strictly neutral, an evenly colored wall or sky is excellent. The most important point in producing the "lifelike" portrait is the approach to the subject. You will not get a good portrait by asking for a smile, you will only make the sitter self-conscious and that is the one thing to avoid. Prevent your model from thinking about being photographed by giving him something to do—let him read, smoke, play or work—and then watch for your opportunity to snap.

Outdoors

The perfect light for outdoor portraits is hazy sunlight, strong enough to give good modeling to the face and soft enough to

avoid hard shadows. Failing this try shooting in the open shade, say of a building. In strong midday sun it is just as well to give your camera a rest. Morning and late afternoon sunlight will be helpful, particularly when the sun shines from the side, and slightly in front of your subject. The possibilities of a reflector in the form of a large sheet of white cardboard to lighten deeper shadows, are worth keeping in mind. A filter is hardly necessary. Indoors: with fast films it is possible to take pictures indoors with the Minox as long as one works in reasonably good light and not far from the window. While practically all that was said about outdoor portraits also applicable to indoor conditions, one should take into account the fact that if the light is coming from one window only it will cast heavy shadows. These heavy shadows have to be lightened to produce a reasonably balanced negative. This can be best effected by a reflector consisting of a large sheet of white paper, or any other white material, for example, a bedsheet, a pillow case and so on. There are two ways in which you can keep the exposure time reasonably short. The sitter may either be placed to one side of the window, with a reflector to lighten the shadows, while the Minox is pointed towards him from the other side of the window, or he may sit facing the window, in which case no reflector is needed. The Minox may then be placed either in front or to one side of the window. If two windows are available in one room, the sitter should be placed between them so that both front and back lighting is given; a reflector should be used to lighten the shadow side and the Minox can be used either parallel with the windows or pointing slightly away from them into the room. If the windows are at an angle to each other the sitter should be placed in the corner between them and looking into the room. The reflector is placed facing the corner, while the camera can be put between a window and a reflector.

Artificial Light

A good background is supplied by self-colored wall, a piece of light or dark cloth stretched taut or simply the frame of an open door leading into an unlighted room. The sitter should be about 3 ft. away from the background. The exposure time will be fairly short, particularly when two lamps are used. With a medium film

suffice. One can straddle a chair, supporting the Minox on the chair back and so dispense with a tripod. If one lamp only is available, a reflector must be used to lighten shadows. The position will be the and lamps about 5 ft. from the subject, a speed of 1/50 sec. will same as for daylight indoors, the lamp being substituted for the window. When two lamps are employed, one should be used as a main light source while the other one, farther away, should lighten the shadows. Different lamp positions can give different effects. Do not be afraid, therefore, of moving your lights, or the subject of the Minox. The film to be used for indoor portraits must be the medium panchromatic type to allow short exposure times. Where ample light is available, the slower pan film, with a reduced red sensitivity, is preferable in order to produce better color rendering and finer grain.

Seaside

By using a low viewpoint for the Minox you will get impressive waves or a pleasing still life of sea-grass against a background of water and sky; from a high viewpoint—the top of a cliff—you will show the stretch of coastline photographed against the light, the water glittering and shining. You may tilt the Minox downwards to get a lively impression of the pattern produced by the back-flowing water in the sand. But do not bother about the steamer which comes up over the horizon; it would appear as a mere pin-point on your film, unless you use the Minox Binocular Attachment and suitable binoculars (see p. 61). Snapshots of living subjects on slow film should in sunshine give well-exposed negatives at 1/50. For close-ups make use of zone focusing. Protect the camera well from the sand, which has a habit of creeping into the mechanism. The film should be changed away from sand and in the darkest spot available. If you have to change film on the spot shield the camera with your own shadow.

Shows

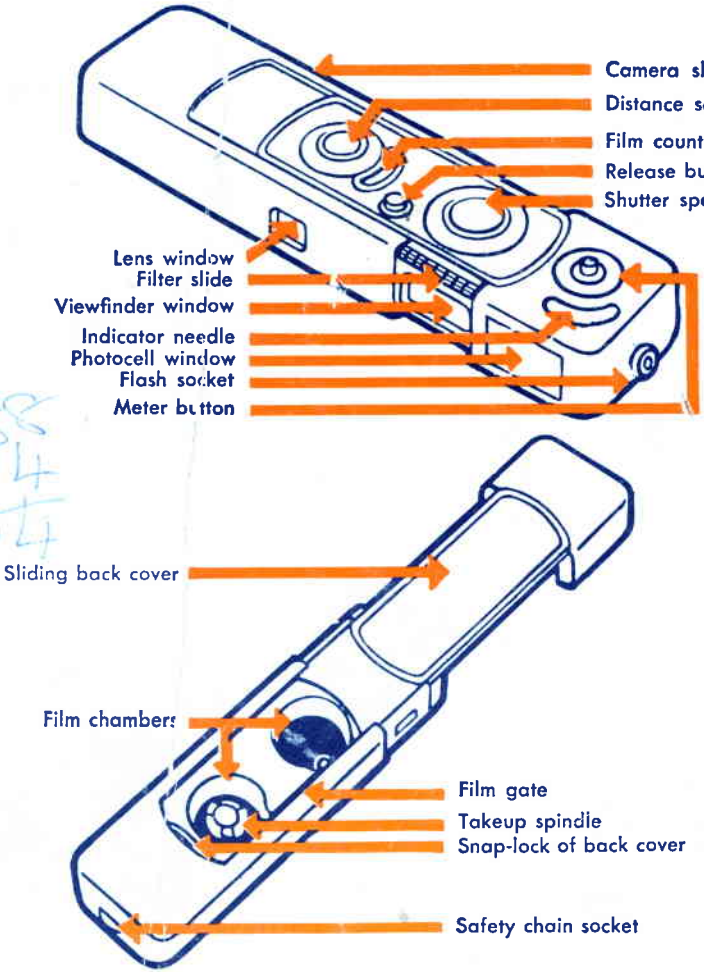
Hundreds of photographic possibilities exist here for the man with a Minox. The technique varies with the type of show, the lighting conditions available and the camera position. Colored

lighting has to be treated with care as often our eye finds it difficult to estimate its lighting value for our film. While a front row position will give large figures, one has to put up with a low viewpoint which leads to distortion. Seats on the sides are as a rule to be preferred, as a center view usually produces flat lighting. The distance is best pre-set to the spot on the stage where action is likely to take place; then wait for the dramatic movement which at the same time coincides with the dead-point of motion, so as to make longer exposure time possible without fear of image movement. While the exposure time will vary according to the light prevailing, an average setting for fastest panchromatic film is 1/20-1/50 sec.

Snow and Ice

Snow and ice, which might seem to be colorless, are not so to photographic material. The shadows in snow—which give it shape and feel—contain much blue. Our film being very sensitive to blue will register this particularly strongly, thus reproducing the shadows and sunny patches on the negative with equal strength, with the result that, instead of powdery snow and glittering ice, we get a wide even field of white, devoid of just those fine details which may have made us want to take the photograph. For ice and snow, therefore, use the green filter.

As snow-light is essentially blue light, and this blue of which the picture mainly consists is partly filtered away by the green glass, give twice the exposure. Snow and ice appear as such only in sunshine. Wide open snow scapes are reguarly disappointing in the picture. Near distance and close-up shots are more satisfying. The cold glittering brilliancy of snow and ice, particularly in close-up work, is best brought out in strong sidelight or better still, back-light. And do not forget, if your cold lens should get warm in a pocket or a heated room, mist may form on it and make it blind for a little while. You must have the patience to let this condensation evaporate before using the Minox.



FOR FULL REFERENCE SEE INDEX: PAGE 94

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