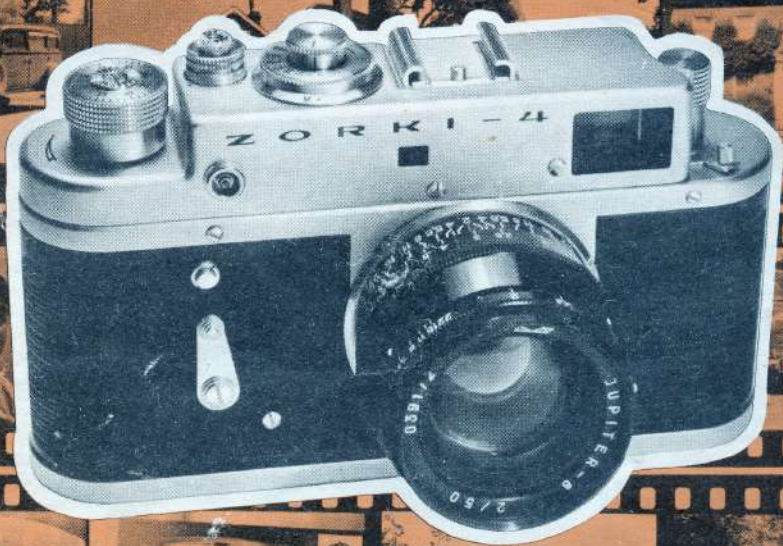




ZORKI 4

35mm Rangefinder Camera

INSTRUCTION
BOOKLET

ZORKI 4

Introduction

Your Zorki-4 is a sturdily built camera and will work happily under widely varying conditions. Do remember though, that it is a precision built optical instrument and should be handled carefully and protected from violent shocks, damp, dust and sudden changes of temperature.

Take care of your Zorki-4 and it will give you years of reliable service and brilliant pictures. There is a wide range of accessories available, offering outstanding value for money to enable you to cope with almost any photographic assignment. You can build up as complete an outfit as you need at your own pace.

To get the best possible results from your Zorki-4 study this booklet thoroughly before you start to take pictures to make sure that you are familiar with the essential features of the camera. Refer back to the booklet any time there is something you are not sure of

Finally if anything should go wrong with your

Zorki-4, for any reason whatsoever, never try to mend it yourself - you could turn a minor adjustment into an expensive repair. Remember that your Zorki-4 and its accessories are backed by top-class service facilities. Factory trained specialists can put things right quickly and inexpensively

Important Note

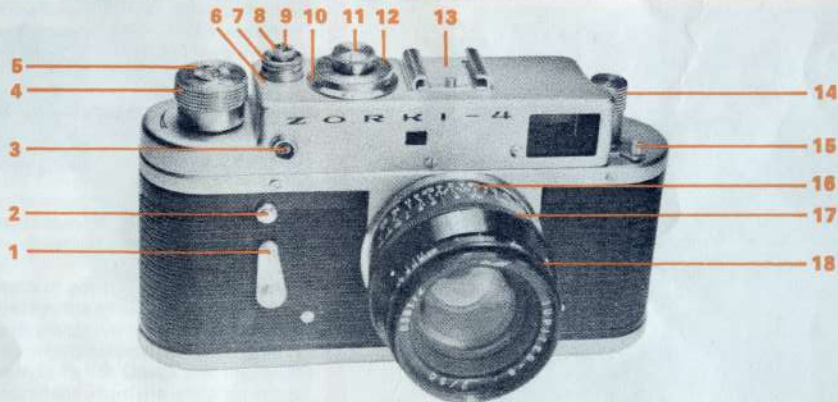
- 1 The 3 dots on the release unit must be in line before winding the shutter
2. Set shutter speed only when shutter is fully wound on.
3. Do not leave speed setting knob on slow speed (if shutter is wound on)
4. Never turn speed setting knob between "30" and "1"

There may be minor differences between your camera and this Instruction Manual due to ever-advancing development in design

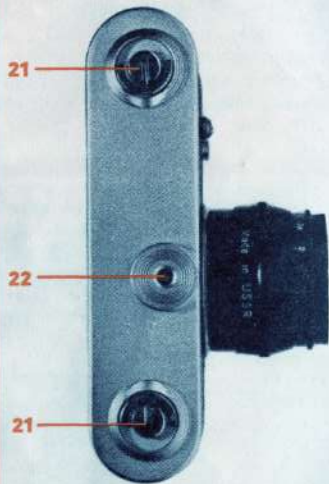
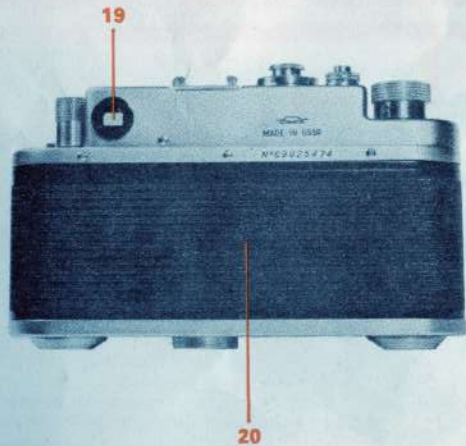
1. Delayed action setting lever
2. Delayed action release button
3. Flash synchronisation socket
4. Winding knob
5. Frame counter dial
6. Frame counter index dot
7. Rewind release ring

8. Shutter release button
9. Cable release socket
10. Synchronisation scale
11. Shutter speed selector knob (with index)
12. Shutter speed scale
13. Accessory shoe

14. Rewind knob
15. Dioptic correction lever
16. Depth of field scale
17. Focussing ring
18. Aperture ring



- 19. Range and view-finder eyepiece
- 20. Detachable back
- 21. Base locking latch
- 22. Tripod bush



Using your Zorki - 4

Loading

Never load the camera in bright or direct sunlight. Remember you can easily provide shade for film loading by turning your back on the sun and using your own shadow

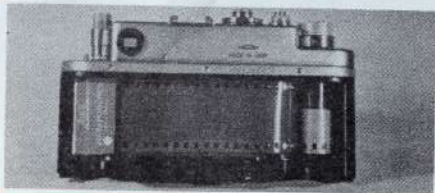
Your Zorki-4 will accept any standard 35mm. cassette. Enthusiasts can also use bulk film in the special reloadable cassette provided.

Remove the camera from its case by unscrewing the case screw and remove the back by pulling up the latches on the base and giving them a half turn. The back can now be pulled down and lifted off. Remove the take-up spool and push the end of the film under the spring clip.

Replace the take-up spool in the camera and draw sufficient film about 3" out of the cassette to allow you to drop the cassette into position in its chamber. The transport sprockets should fully engage in the film perforations and the film must lie flat across the film guides.

It may be necessary to turn the rewind knob (pull it upwards first) before the cassette can be pushed fully home.

Place the back in position as near the top as possible, making sure that the edges are in the guides at the sides, slide upwards until fully closed and turn the latches to their original position where they can be pushed down to lie flat. Check that the back is properly locked then turn the wind-on knob clockwise, gently but firmly to its limit in order to wind the shutter and advance the film. Press the



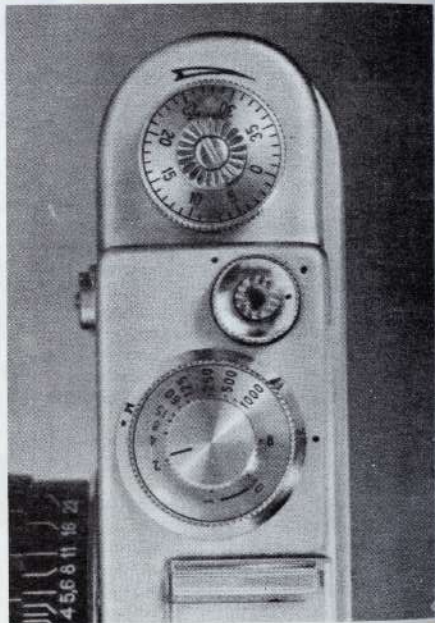
shutter release and wind again, whilst doing this watch to see whether the re-wind knob revolves if not, check camera for correct loading Press the release again and then wind-on for the third time. Now without pressing the release set the film counter to "0" against the mark on the top of the camera, by turning the counter disc clockwise using firm but gentle pressure of the thumb on the knurled surface)

Your Zorki-4 is now ready for use and can be replaced in its case, where it should be retained by screwing up the case screw **Note:** The case is a tight fit, never apply undue force when closing the case cover also ensure that the lens is set to " ∞ " before doing so)

For each picture you will need to press the shutter release and then wind on for the next picture by turning the wind-on knob clockwise as far as it will go.

Film Counter

Every time you wind on, the frame counter disc will come to rest with the next division opposite the index mark. The counter tells you how many frames you have taken and when it reaches 20 or 36 (depending on the film in use) you will need to rewind the film into its cassette and put in a new film. Colour film especially should not be left in the camera for long periods, and for the best results should be processed as soon as possible after exposure. Incidentally do carry a spare film – nothing is more annoying than to run out just before the best shot turns up!



Removing Exposed Film

After taking the last picture on the film (20 or 36) you will have to rewind the film into its cassette before removing the camera back.

To do this, turn the sleeve round the release button clockwise as far as it will go (it will move downwards as you turn)

Pull up the rewind knob and turn it clockwise until the end of the film releases from the take-up spool (you will know when this happens, as there is a slight click and a decrease in tension)

Remove the camera from its case, take off the back and take out the cassette of exposed film, which should be processed as soon as possible. Return the rewind sleeve to its normal position, wind on the shutter and release once. **Note** If the shutter does not reset after winding, check that the rewind sleeve has in fact been fully returned to its normal position. The camera may be now reloaded.

Taking the Picture

Once the camera is loaded you have to consider three aspects of taking the picture – focus, exposure and composition. The first two of these are purely technical, and the following sections, together with a little experience, will enable you to handle your Zorki-4 with sufficient enough ease that you can concentrate on the third aspect – composition, which is the artistic one. Composition is concerned with what you put in your picture and where, and is largely “up to you” The way you compose your pictures makes them your individual work and this booklet can only offer some helpful advice. The



most important thing is to get what you want onto the film, in the best possible form for producing a finished "work" For this you must get your focus and exposure correct.

Most Important Always remember to remove the

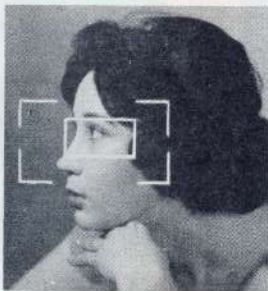
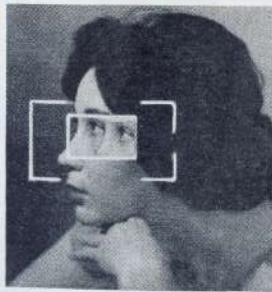
lens cap before undertaking any photography and also, when taking pictures with the camera in its ever ready case, to ensure that the top portion of the case does not obscure the lens.

Focus

In the centre of the viewfinder there is a small area used for focussing. When you look through the viewfinder you will see that in this area there are two images of the subject. These two images can be brought together by turning the focus ring of the lens, when the two images coincide the camera is

accurately focussed on the subject chosen.

To ensure maximum clarity the viewfinder of your Zorki-4 can be adjusted to suit your eyesight by moving the small lever under the rewind knob until you get the clearest image.



Depth of Field

Sharpness, in photography is a relative concept since the human eye will accept as sharp, objects which strictly speaking, are not quite sharp. This is very important since the only part of the picture that is really sharp is the part you focus on. Objects behind and in front of the main subject will be less sharp as the distance between them and the subject increases. It is often important to know how much of the picture is going to be acceptably sharp and your lens has a special scale called the "depth of field" scale, to give you a good idea of this.

The scale has been calculated on the basis of acceptable sharpness and shows, at any given focus distance the nearest and furthest sharp planes of your picture. The distance of these depends not only on the distance at which the lens is focussed but also on the aperture used. See section on 'Exposure' and the scale consists of the lens aperture numbers repeated each side of the main focus index. The distance to the nearest and farthest planes of sharp focus can thus be read directly on the main distance scale.

You can, of course, use the distance scale on the lens to set the focus, but it is almost always easier and more accurate to use the viewfinder rangefinder system.

The illustration below shows a typical scale. The lens is focussed at 3 metres and for an aperture of $f/4$ the depth of field extends from approximately 2.5 to 3.8 metres while at $f/11$ objects from approximately 2 to 6 metres will be acceptably sharp in the final picture. All lenses for the Zorki 4 have similar scales.



Exposure

This is sometimes called the biggest problem in photography! But, it is not really so difficult. Roughly speaking, any subject can be thought of as a lot of areas of varying brightness, from very bright highlights) to quite dark shadows. The problem is to ensure that the film receives the right amount of light to reproduce each of these levels of brightness acceptably.

Although this can hardly ever be realised in normal conditions, it is possible in practice to make a reasonably close representation of the original. Film manufacturers have spent much time and trouble evolving films that can be used to cover the

various requirements of the photographer and each type of film is given a "speed number" depending on its sensitivity to light. If you know your film speed and how much light is available you would be able to calculate the correct settings of the exposure controls on the camera. Since this would be a long and tedious process no-one ever bothers to do it by calculation, because perfectly good results can be obtained with the help of exposure tables or better still, an exposure meter. The tables supplied by manufacturers with each film are usually a very good guide although for the best results, especially with colour film, a meter is essential.

Here are two typical exposure tables

Lighting conditions
Bright open sunshine
Hazy sun
Open shade
Cloudy
Overcast

Diaphragm setting (aperture) for shutter speed of 1/125	
25ASA/15DIN (e.g. Kodachrome II)	50ASA/18DIN (e.g. Agfacolour)
8	8-11
5,6	8
4	4-5.6
2.8	4
2	2.8

What are the controls that govern the exposure? They are called the **Shutter Speed** and the **Aperture** or **Diaphragm**

Shutter Speeds

The shutter speeds are controlled by the speed setting knob on the top of the camera and can be **set only after winding on**. Note that the 3 dots on the release unit should be in line before winding on. Each figure on the scale corresponds to a fraction of a second ($2 = 1/2$ sec, $30 = 1/30$ th, $250 = 1/250$ th, etc.) and tells you how long your film will be exposed to the light (the outermost scale marked from '0' to '25' or 'X' — M on later models, is used for setting the flash synchronisation and has nothing to do with the shutter speeds) Speeds are set by lifting the speed setting knob, and turning it until the index lines up with the required speed (from tables or meter)

If the knob is released it will drop into position and the speed will be set. Make sure that the index is lined up accurately and that the knob has dropped fully home. On speeds of $1/60$ th to 1 sec. the knob will sit rather higher than for the remaining speeds. When setting speeds of $1/60$ th to 1 sec. more resistance will be felt, and on changing to one of the remaining speeds a buzzing will be heard — this is

due to the engagement or disengagement of an additional mechanism and is perfectly normal. **Never turn the knob between "30" and "1" also never leave knob on speeds between "60" and "1" if shutter is wound on Either of these actions will result in damage to the mechanism.**

The "B" setting is for long exposures (greater than 1 sec.) For these the camera should be on a tripod. If the shutter is set at "B" it will stay open as long as the release button is held down. The release button can be retained in the "down" position by turning it anti-clockwise and subsequently released by turning it clockwise. To minimise vibration it is a good idea to hold a piece of black card in front of the lens as the release is pressed and turned — the card is then taken away for the length of the exposure (use a stop-watch or count) then replace in front of the lens to end the exposure, and the release allowed to return to its normal position. Obviously this only applies to long exposures of several seconds.

Apertures

These are controlled by moving the lens' aperture ring in either direction and aligning the appropriate figure against the index. This ring is engraved with a series of figures, called *f/nos.*, which are relative expressions of the size of the aperture (or hole) within the lens. The sequence is so designed so that altering from one figure to another either doubles or halves the amount of light reaching the film (this sequence also applies to the shutter speed scale). This feature is very useful since it is often necessary to use either a higher shutter speed (in order to freeze action) or a lower shutter speed (in poor light conditions). Likewise the aperture often needs to be made smaller or larger to either increase or restrict the depth of field, e.g. if "30" (1/30th sec. on speed dial and "11" *f/11* on aperture scale is the correct exposure (as determined by meter or tables) then altering speed to "60" (1/60th) necessitates altering the aperture scale to "8" (*f/8*) resulting in the same effective exposure whilst utilising a higher shutter speed as may be demanded by circumstances.

Composition

Although the final control of composition lies in the hands of the photographer, here are a few ideas which may be helpful.

Try to avoid putting the main subject in the centre of

the frame, it is usually more interesting to place the most important parts of the picture near imaginary lines dividing the picture vertically and horizontally into thirds. With the standard lens on the camera you can use the viewfinder to compose directly and for other lenses you use individual matching viewfinders which slide into the accessory shoe on top of the camera.



Try to include something in the foreground of landscapes. A picture of distant scenery will often be improved just by a bush or flower in the foreground.

Try to avoid tilting the camera to include the top of a

high building, because in the final picture it will look as if the building is falling over backwards. The best results will only be obtained by using a wide angle lens (Jupiter-12 or Orion-15) which should also be used for interiors and groups in restricted spaces.



Jupiter-12
wide angle lens



A = taken with standard lens
camera tilting upwards

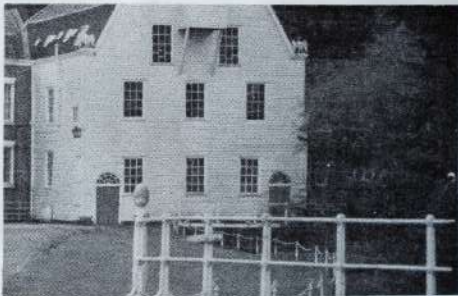
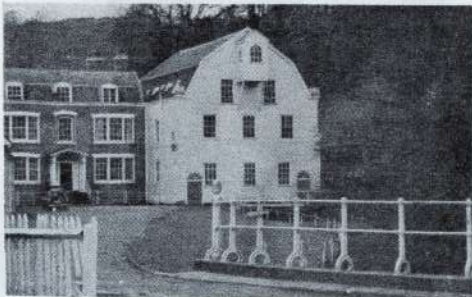


B = taken with wide angle lens

Try not to take pictures of objects that are too far away to appear a reasonable size in your picture. People should be about half the height of the picture. The only sure way to get a good picture of something you cannot get close enough to is to use a telephoto lens or long focus lens (Jupiter-9, Jupiter-11) which are also almost essential for portrait work.

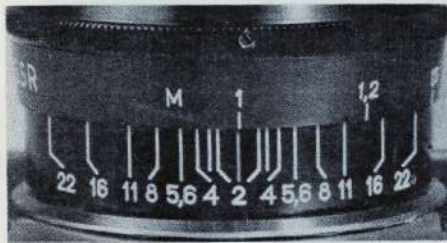


Jupiter-9 and Jupiter-11 lenses



All of the lenses mentioned will "couple" to the Zorki-4 rangefinder (that is, you can focus just as if you were using the standard lens) but require individual matching viewfinders for composition – when it is required to change the lens, set the shortest distance obtainable and remove the lens from the camera by turning it in an anti-clockwise direction. When screwing the new lens into the camera the distance scale should again be set to the shortest distance obtainable.

When taking close-up pictures remember that the viewfinder and lens do not quite coincide, since the viewfinder is above and to the left of the lens. To correct for this compose close-up pictures so that the centre of the picture lies below and to the right of the centre of the viewfinder. A little experience will enable you to judge the correction quite accurately. Correction is not usually necessary for distances greater than 1 metre with the standard lens. If you watch a professional at work you will see the use he makes of lenses of different focal lengths – and you will soon start to find situations where you would like a lens that "has a little more reach" or "gets a bit more in"



Do-It-Yourself (Special Cassette)

Your Zorki-4 is supplied with a special cassette. This is for people who want to "load their own" with film bought in bulk or as "darkroom refills". The cassette must be loaded in total darkness, so some practice with a length of old film is probably advisable before using fresh stock. The cassette holds up to 1·65 metres of film.

To open the cassette press the locking button and turn the inner sleeve until the film aperture is fully open.

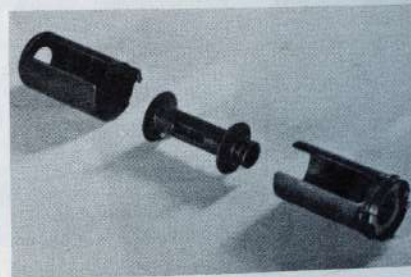
Draw the outer sleeve away from the inner. Remove the spool.

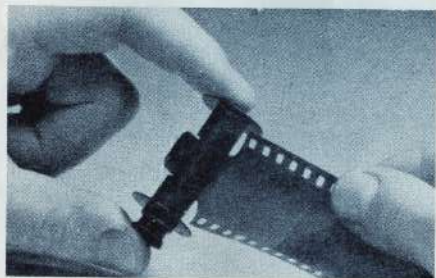
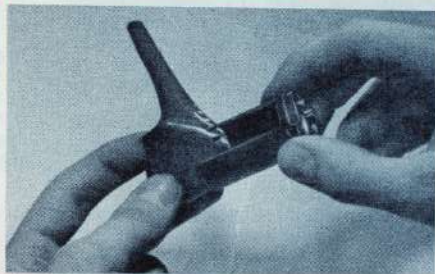
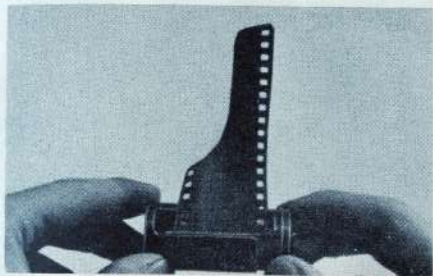
Cut the end of the film to shape and fasten it to the spool as shown (emulsion facing towards you with head of spool down)

The end of the film must be firmly wedged in the slot — turn the tip over a couple of times and push it home. Wind the film tightly but do not tighten it by pulling the free end, since that will cause scratching, which the cassette is intended to eliminate.

When the required length of film has been wound on put the spool into the inner sleeve "head milled end) first" and then slide on the outer sleeve. Turn the outer sleeve until it clicks into the locked position.

About 3" of film should be left protruding, the end should be cut to shape to facilitate loading.





Flash and your Zorki-4

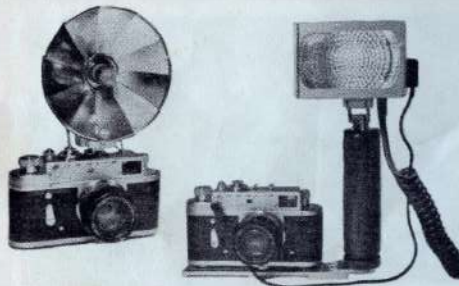
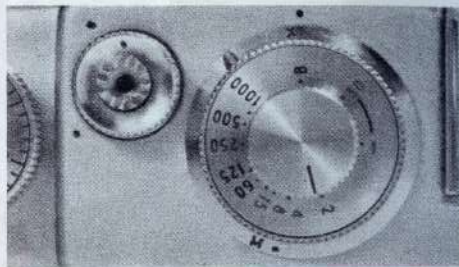
Under certain conditions some form of auxiliary lighting will be required. For this purpose your Zorki-4 has a built in synchroniser which enables you to use electronic or bulb flash guns. Electronic flash guns are usually more expensive to buy and less powerful than bulbs, but they are self-contained and have an almost unlimited life. Battery operated guns are very compact and cheaper to purchase but the cost per picture is higher as a new bulb is required for each shot.

Flash pictures can only be taken at shutter speeds of 1/30th or slower. For bulbs the synchroniser should be set at "15" or "M •" and for electronic flash at "0" or "X"

Small flashguns can be clipped into the accessory shoe on the top of the camera but heavier guns will need a special "flash bar" which screws into the tripod bush of the camera.

In both cases the firing lead from the gun must be plugged into the socket on the front of the camera body

The exposure for flash is set by adjusting the aperture and depends on the power of the gun, the sensitivity of the film in use and the distance of the flashgun from the subject and most guns have calculators showing the correct aperture for each film speed and distance.



Illustrations show two typical modern flashguns which are available from most photographic dealers.

Picture Yourself

To use the self-timer first set all controls as for a normal picture then turn the delay lever until it points downwards. Instead of pressing the shutter release press the delayed action release and move into the picture area as quickly as possible. The lever will slowly return to its normal position, releasing the shutter during its travel.

You will naturally need to support the camera on something firm, a tripod is best, but any stable surface will do.

The self-timer can also be used in conjunction with a flashgun (observing, of course, the previous notes on flash photography)

Look after your Camera!

Never touch the surface of the lens since the natural acidity of the skin will attack the delicate coating. Dirt, traces of condensation, etc. on the lens can be removed by lightly wiping over the surface with a clean, well washed flannel or soft cloth, or cotton wool dampened with absolute alcohol, ether or ether spirit mixture. Any smears can be removed with a dry soft cloth.

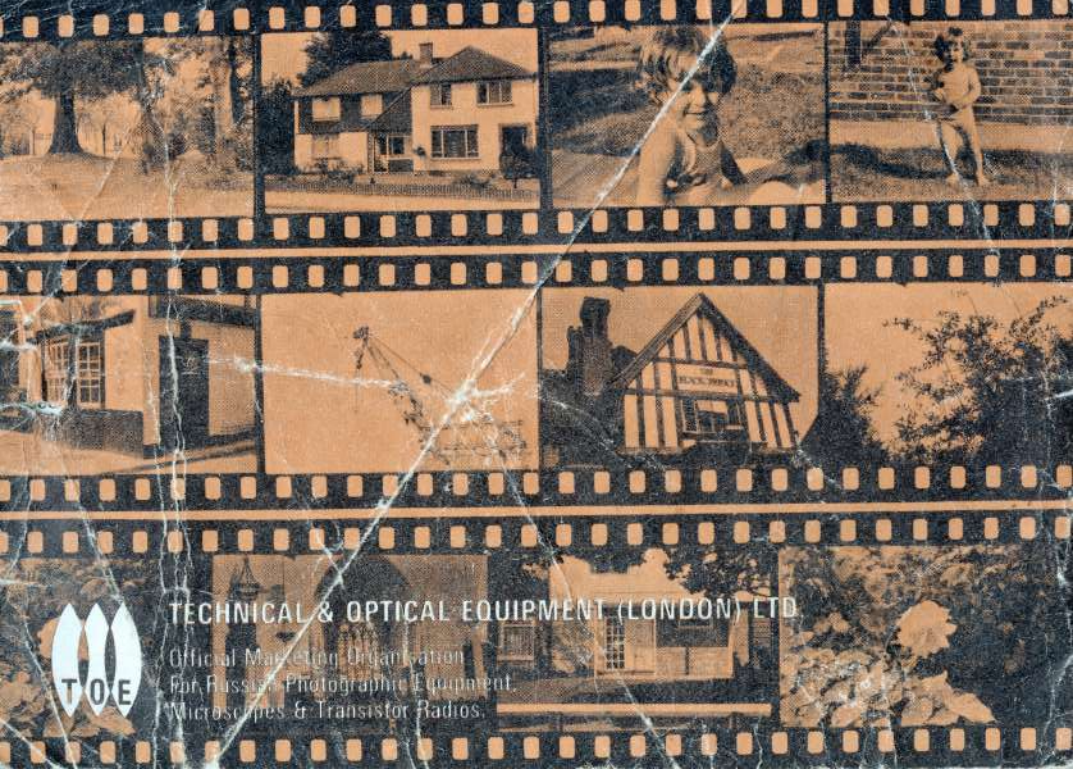
Keep your camera in its case when you are not using it. Remember that a camera is not waterproof and that on the beach sand somehow seems to get

everywhere! A polythene bag is an excellent extra protection.

Before going away on holiday especially if you do not use your camera regularly run off a test film – making sure that all variable settings are used including the delayed action device.

Finally, don't leave your camera out in the open sun – heat is bad for the film and camera lubricants, and the lens can act as a burning glass and cause damage to the interior of the camera.

Anyhow – good shooting and have fun!



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