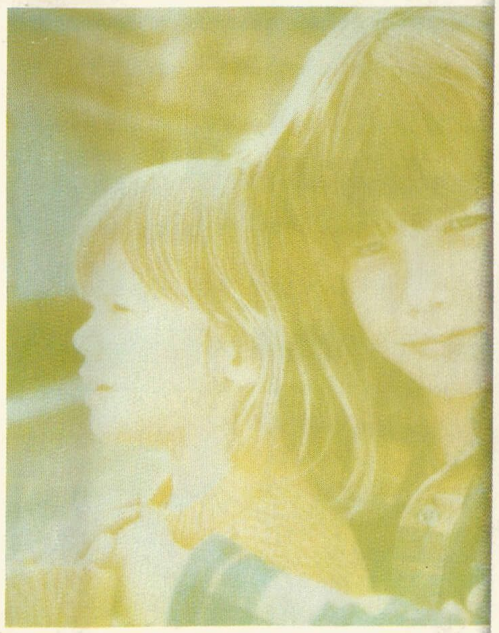
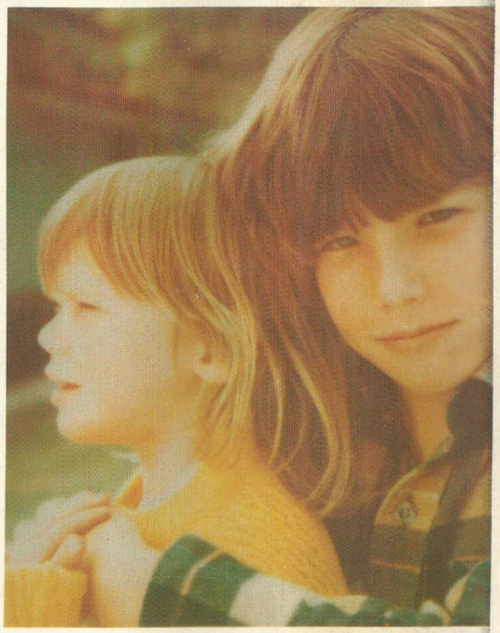








THE POLAROID SX-70 LAND CAMERA

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All the color pictures in this book (except the accessories photograph on page 52) were made with Polaroid SX-70 Land cameras and films. Every effort has been made to reproduce as faithfully as possible the colors and details appearing in the original SX-70 prints. The reproductions most closely resemble the originals when the book is viewed by daylight.



A mile away, or a foot away – just focus, shoot, and there's your picture

People, places, things – a flower as close as 10 inches or a distant horizon – snapshots on a bright beach or a time exposure at dusk – work, play, business, travel, or simple daily record. Whatever the scene or the subject, just turn the focus wheel to get the clearest, sharpest image in the viewfinder, then squeeze the red button – the camera does the rest. It sets the correct exposure automatically and delivers the developing picture 1.5 seconds later. These natural light pictures, and others in this book, suggest what you too can do with the SX-70 without flash.







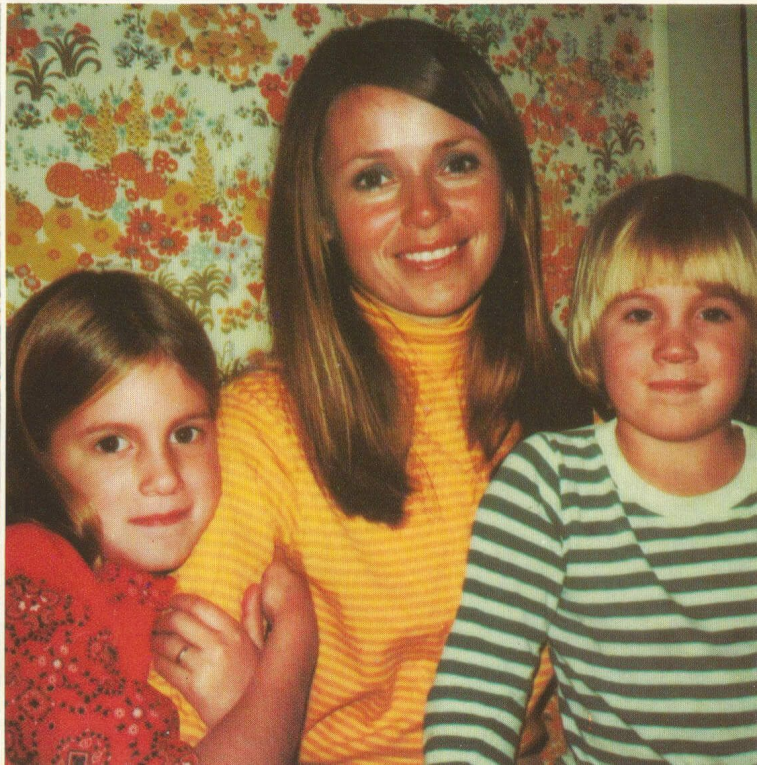


From 10 inches to 20 feet with flash – all you have to do is focus sharply

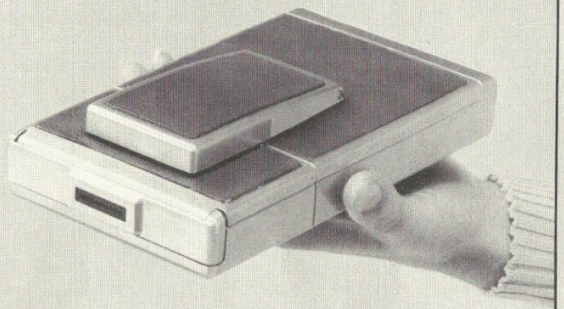
Many of your best picture opportunities will be indoors and at night. For these, the SX-70's follow focus flash system makes picture taking a simple matter. Whether it's a small object as close as 10 inches (even at 5 inches with a simple accessory) or a large group up to 20 feet away, you just focus to get the clearest, sharpest image of your subject in the viewfinder. The camera sets correct exposure for flash pictures automatically as you focus. Squeeze the red button, and the camera delivers the developing picture 1.5 seconds later. These pictures, and others in this book, give you an idea of what you too can do with the SX-70 and its unique flash system.



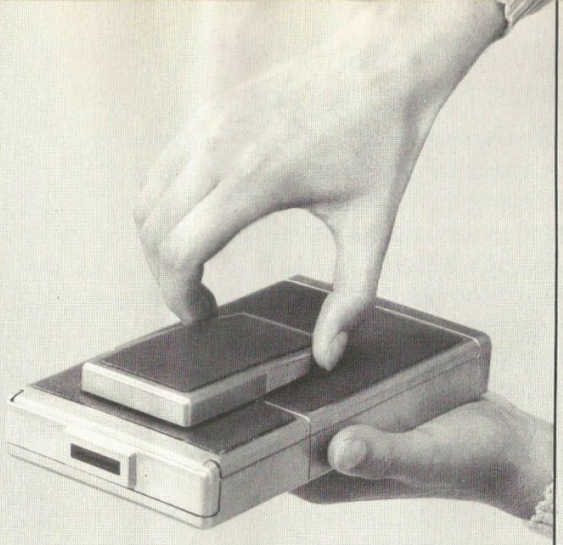




OPENING AND CLOSING



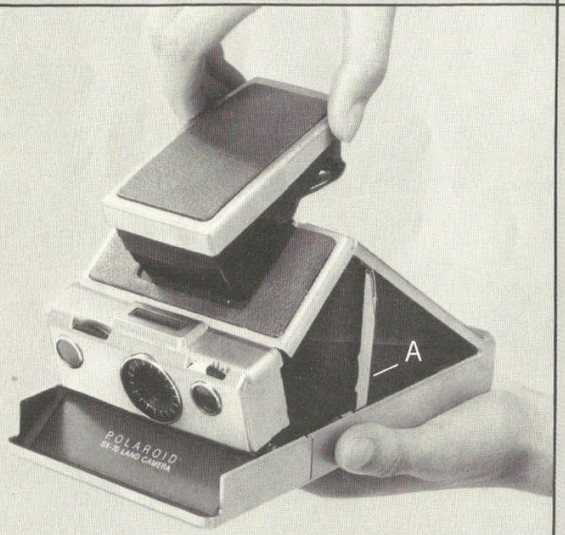
1 Hold it in the palm of your left hand.



2 Grasp the small end of the viewfinder cap.



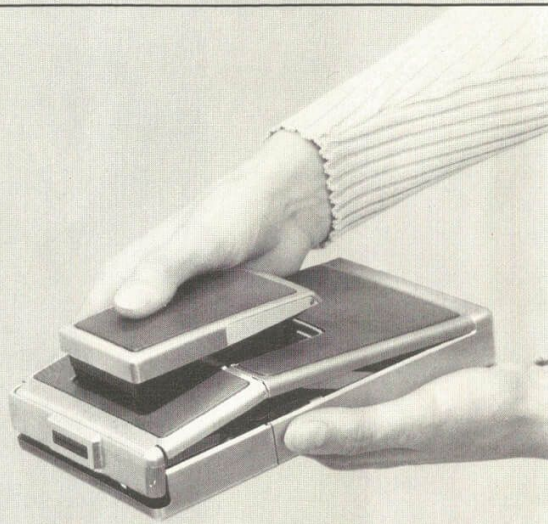
3 Pull it straight up . . .



4 . . . until the cover support bar (A) moves forward and locks in place. The camera can now be loaded and used.

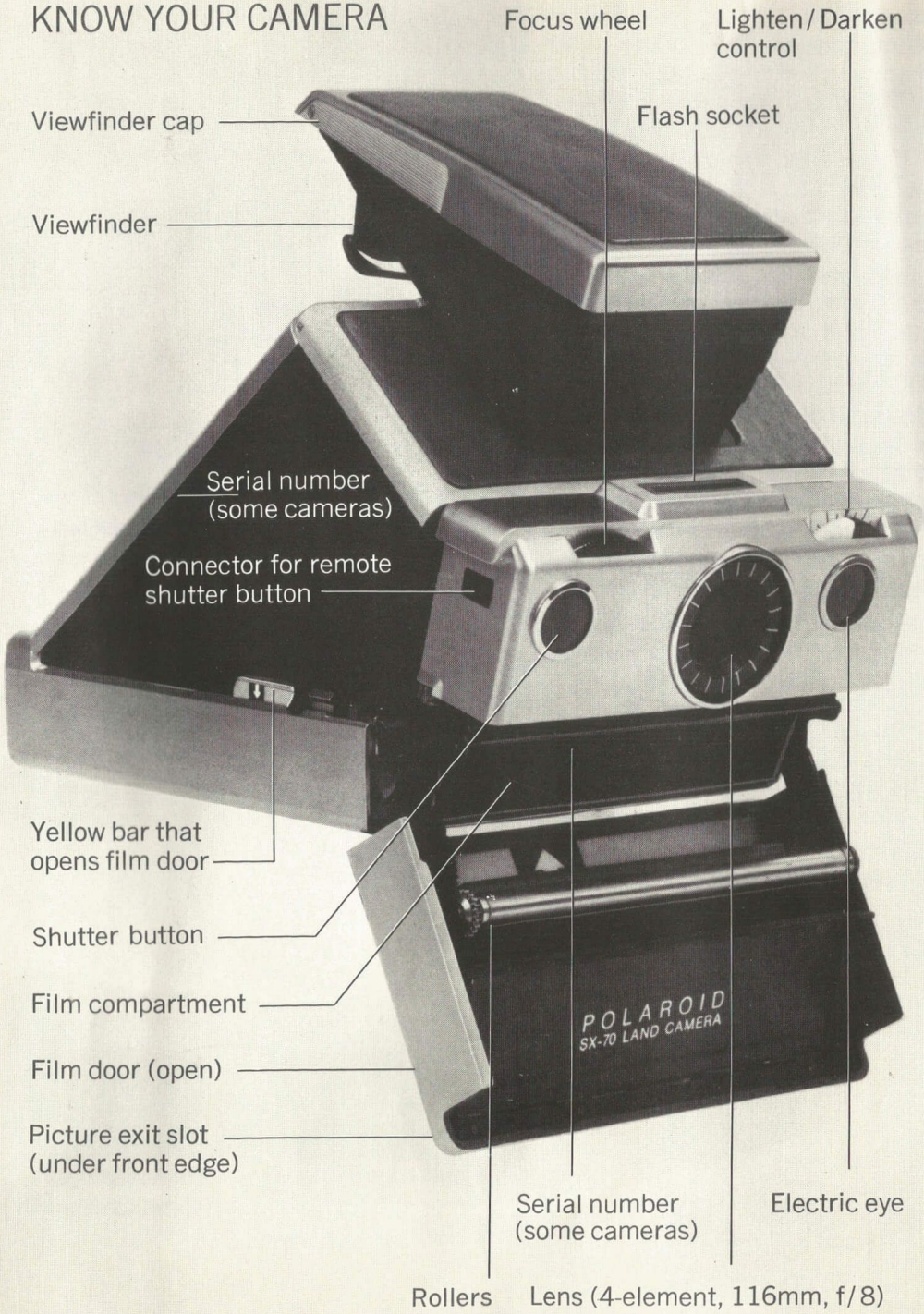


5 To close the camera, push the support bar toward the rear and . . .

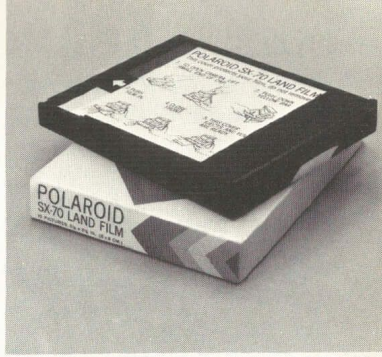


6 . . . press down on the viewfinder cap so that both sides of the camera close.

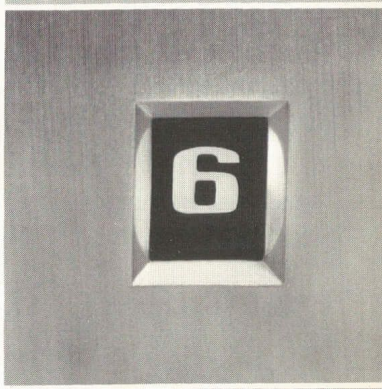
KNOW YOUR CAMERA



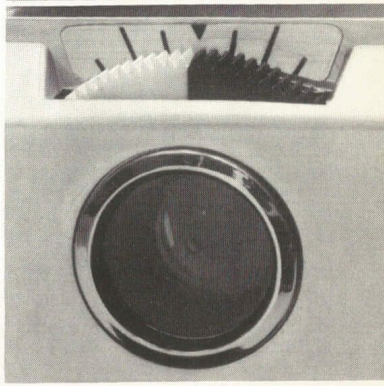
The unique film pack provides ten 3⅛ x 3⅛ in. pictures. In each pack is a flat battery to supply fresh power for pictures made with that pack. →



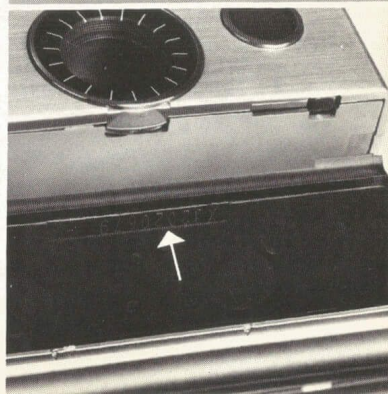
The picture counter, on the rear of the camera, is blank when the camera is empty, goes to 10 when a pack is inserted (even a partly used or empty pack) and the film door is closed. It counts down, tells you how many more pictures you can take. After 10 pictures it stops at 0, won't let you waste a flashbulb. →



To make pictures lighter, turn the Lighten / Darken control so more white is shown; to darken them, turn it so more black is visible. The control automatically returns to Normal position (shown) when the camera is closed. →



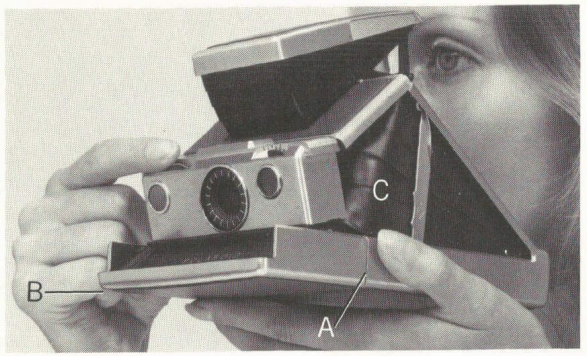
The serial number of your camera will be in one of the two locations indicated (left). If it is inside the camera, it will only be visible if the film door is open and there is no film pack in the camera (right). →



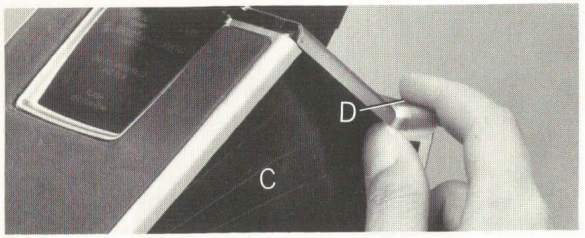
For more details about the camera see page 58.

HOLDING THE CAMERA

Hold it as shown, with your left hand behind the film door hinge (A). Keep your fingers away from the picture exit slot (B) and the bellows (C).



Place your eye about an inch from the viewfinder and look through the center of the eyepiece.



Tuck your right thumb behind the shutter housing, but do not touch the bellows (C). Place your forefinger on the focus wheel (D) and curl the other fingers into the palm of your hand.

WHAT YOU SHOULD SEE IN THE VIEWFINDER

You should see a square black frame around the scene. If you do not see all four corners of the frame, your eye may not be centered behind the eyepiece. Move your eye or the camera until you can see all four corners.

You should also see a split circle in the lower center of the viewfinder. This is a focusing aid.

FOCUSING

When you look into the viewfinder of the SX-70 you are actually looking through the camera's lens. The large, bright image you see makes it easy to focus – that is, to adjust the lens to get the clearest image of your subject in the viewfinder and in the picture. Aside from pressing the red shutter button, focusing is the only thing you have to do to take a picture. The care with which you focus makes the difference between taking consistently beautiful pictures and disappointing ones.

How you focus

Just turn the focus wheel back and forth until the viewfinder shows you the clearest, sharpest image of the most important part of your subject. The camera's lens is then focused for that part. Disregard other parts of the scene which may look unsharp. Just concentrate on getting the clearest image of the most important part. For pictures of people it will usually be the face.

A focusing aid

The split circle in the lower center of the viewfinder is a focusing aid. It helps you to focus quickly in certain situations, as explained on page 12. This circle is not shown in the pictures at the right.



A face that is in focus in the viewfinder will be sharp in the picture. Sharp focus is particularly important for correct exposure with flash (see next page).



A face that is out of focus in the viewfinder will be unsharp in the picture and too light or too dark if you are using flash.

Sharp focus is most important for flash pictures

Focusing controls the exposure for flash pictures. As you turn the focus wheel, the camera automatically sets the right exposure for any distance at which the lens is focused – from 10 in. to 20 ft. However, if the subject is 5 ft. from the camera but the lens is focused for some other distance, your flash picture will be either too light or too dark. *Only if you focus carefully and accurately can the camera give you well exposed flash pictures.*

Practice focusing for a few minutes

Practice in a well lighted room. Pick a subject with clear, sharp outlines and plenty of contrast – a calendar with big numbers or a magazine cover will do nicely. Stand about 4 feet from it.

Look through the viewfinder, holding the camera so you see a square image in a black frame, as shown on the opposite page.

Look at your subject and turn the focus wheel as far as it will go in both directions. Watch your subject change from fuzzy to sharp and back to fuzzy again.

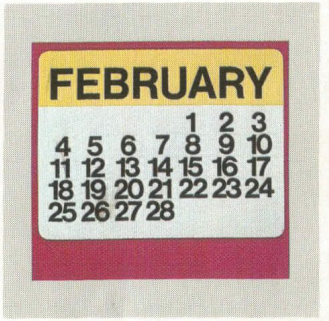
Once again, turn the focus wheel until the target looks sharp. Then, starting from that point, turn the wheel back and forth a small amount to find the point where you get the clearest, sharpest image. When you do, you have focused the lens.

Actually, focusing is much like tuning a radio or TV set to get the best reception. You turn slightly past the perfect setting once or twice to be sure you have found it.

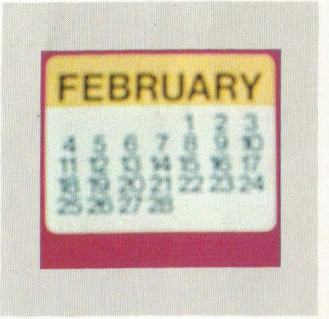
Practice focusing a few more times until you can easily find the sharpest image. Then try focusing on other objects and at different distances.



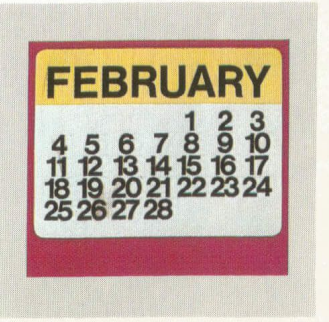
Unsharp. Turn the focus wheel . . .



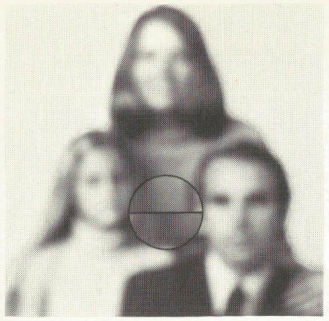
. . . until the target is sharp.



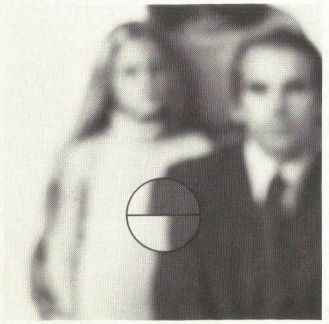
Turn farther to make it unsharp . . .



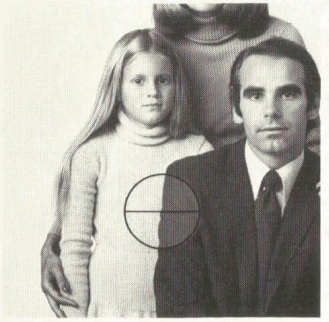
Finally, turn the focus wheel back and forth just a bit, to find the point where the details are clearest. That's the point of sharpest focus.



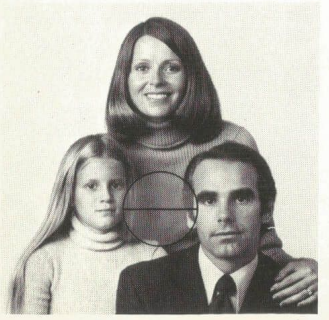
Aim at subject.



Place split circle over vertical line.



Roll focus wheel to make line continuous.



Reframe.

The split circle focusing aid

The split circle in the lower center of the viewfinder is a focusing aid. It helps you to focus quickly when the scene includes a vertical line at about the same distance from you as the most important part of your subject.

To use it, find a line like the contrast between the dark sleeve and the light dress in the pictures at the left. You could also use a necktie or scarf, or a piece of jewelry. For a closer portrait, try the line of the nose, the eye, or the frame of eyeglasses.

Place the split circle over the vertical line and roll the focus wheel. When the line is broken, the subject is out of focus. When it lines up, the subject is in focus.

After you focus, reframe your picture before pressing the shutter button, to be sure you see in the black frame of the viewfinder exactly what you want in your finished picture. Do not change your distance from the subject, or you may get a picture that is not sharp, or a flash picture that is too light or too dark.

The split circle can be very helpful when taking flash pictures in low light levels.

With some subjects, the split circle may not help

To use the split circle, you must have a distinct vertical line close to the most important part of your subject. The split circle does not help in focusing on subjects with no distinct vertical lines, like fuzzy animals, or on confusing patterns, like closely striped patterns. For subjects like these, focus in the usual manner described on pages 10 and 11.

Pointers to help you focus

Always focus on the most important part of the subject, such as your subject's face. Look for points of contrast – light against dark, one color next to another, etc.

RIGHT: For a close portrait, focus on a feature – the eyes, mouth, or nose, perhaps a man's moustache.

BELOW, RIGHT: When you are farther away, look for larger contrast points about as far away as your subject's face – dark eyeglass frames, a bright necktie or scarf, a striped shirt, etc. The zipper on the jacket would be ideal for use with the split-image focusing aid.

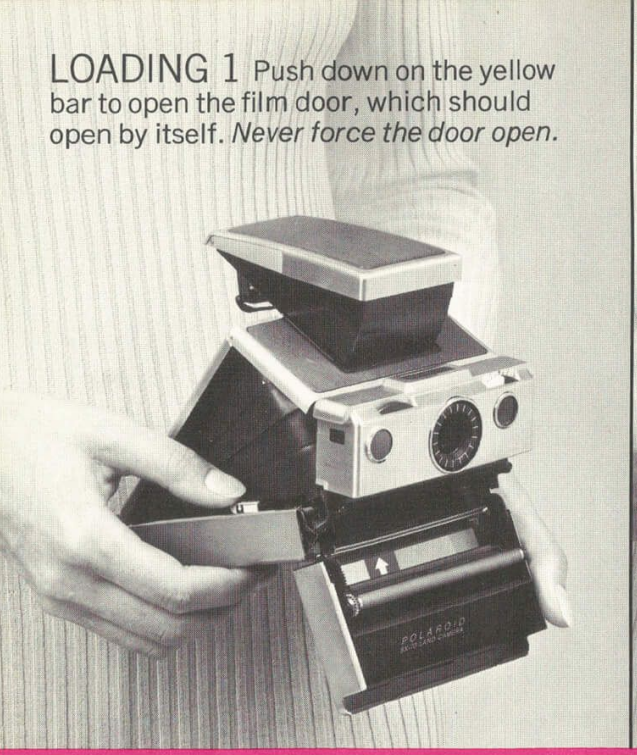
BELOW: For distant groups, focus for overall crispness of the image, look for contrast between members of the group or between the group and the background. Or, focus on some easily seen object the same distance from the camera. Or, ask someone to hold up a white or colored object to help you focus.



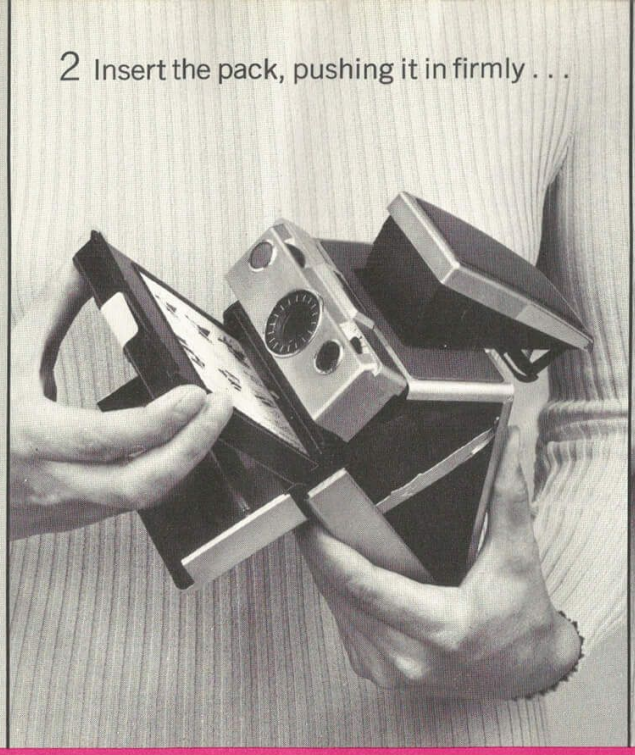




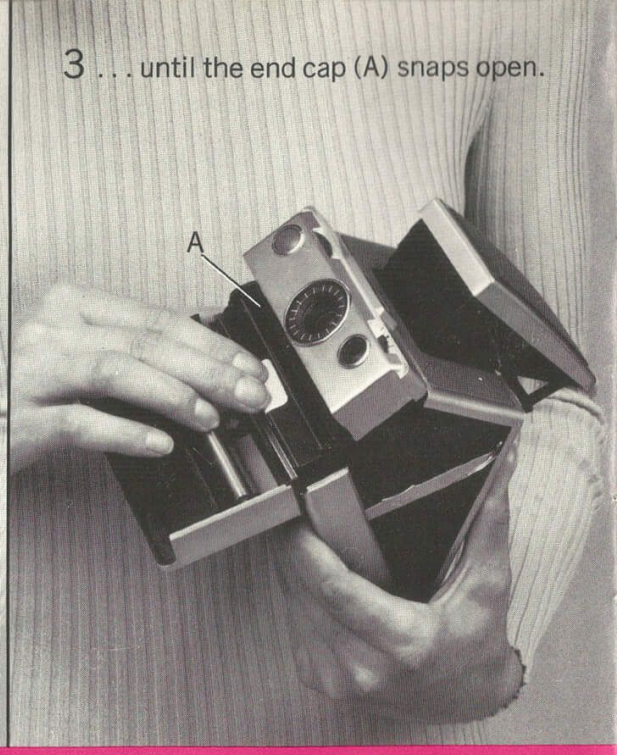
LOADING 1 Push down on the yellow bar to open the film door, which should open by itself. *Never force the door open.*



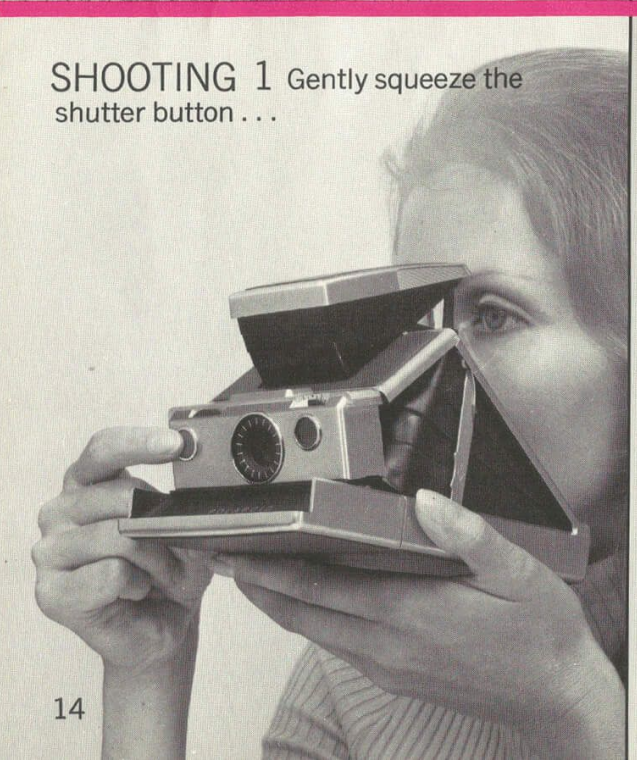
2 Insert the pack, pushing it in firmly . . .



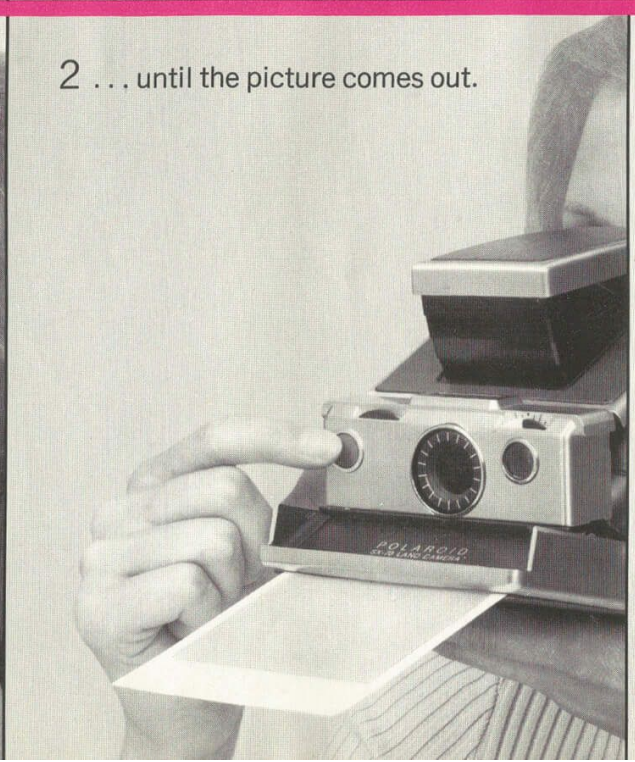
3 . . . until the end cap (A) snaps open.



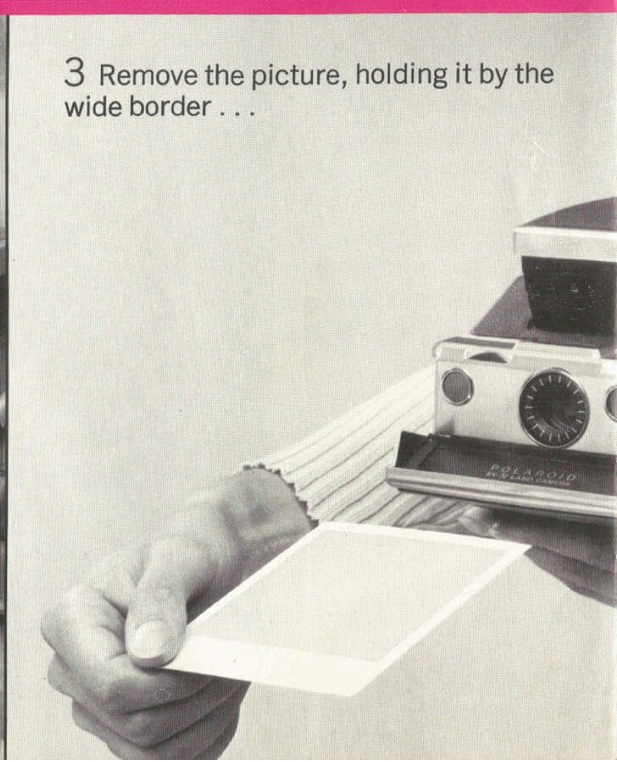
SHOOTING 1 Gently squeeze the shutter button . . .



2 . . . until the picture comes out.



3 Remove the picture, holding it by the wide border . . .



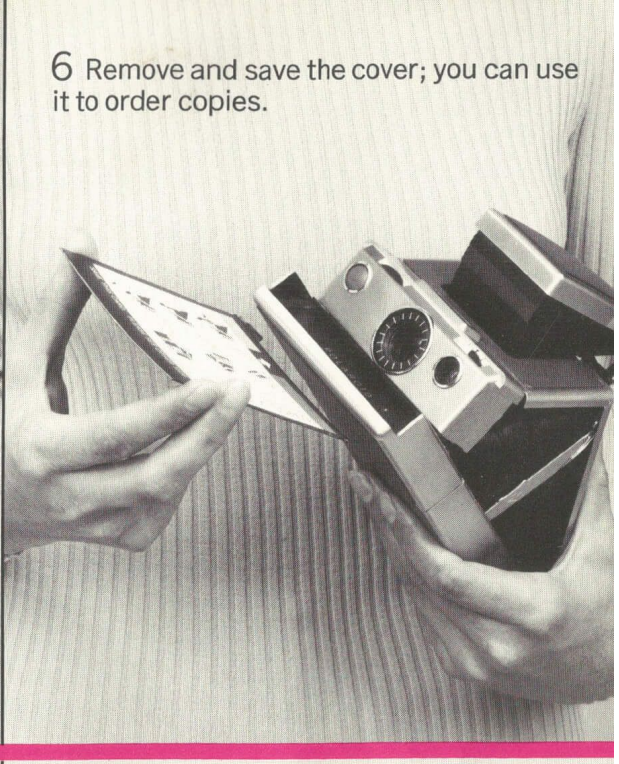
4 Close the film door.



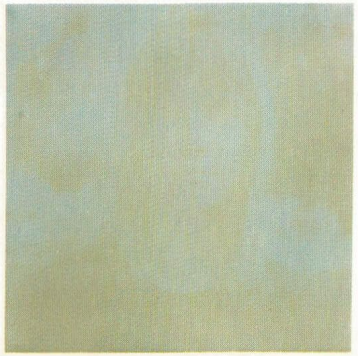
5 The film cover comes out.



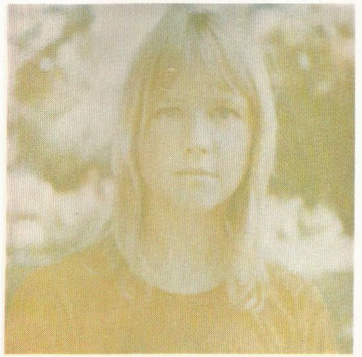
6 Remove and save the cover; you can use it to order copies.



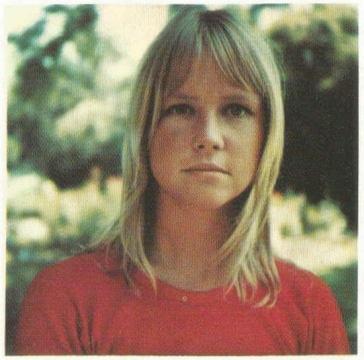
4 . . . and watch it develop . . .



5 . . . by itself. Don't squeeze or bend the picture while it is developing.



6 At first the picture will be blank, but soon details will appear and colors will continue to get richer until development stops after several minutes. The finished picture is flexible and highly resistant to damage.







SUCCESS WITH DAYLIGHT PICTURES

Exposure for daylight pictures is controlled by an electric eye which "reads" the brightness of the light on the subject and automatically sets the shutter speed and lens opening for correct exposure.

The electric eye can accurately handle a fast snapshot in bright sun or a long time exposure in dim light, but it needs assistance from you. These simple rules will help you to get excellent daylight pictures every time.

1. Stand so the light on the subject comes from behind you or from the side. If you're looking into the light, you're facing the wrong way.
2. Be sure that the light on the background is about as bright as the light on the subject.
3. Hold the camera steady until the picture comes out of the exit slot.

Your first daylight pictures

To be sure they're successful, we urge you to start out by trying the picture ideas on these pages. Look at these pictures. What makes them good?

First, they were made according to the basic lighting rules above, so they are well exposed. The subjects have large, colorful details, they fill most of the picture area, and the important parts are in sharp focus.

We suggest that you start by imitating these pictures. If you do as well, go on and try the other daylight picture ideas in this book. But if you run into picture taking problems please call our Customer Service, toll free, and tell us about them (see page 62).

Something about daylight

Bright sun is fine, but not if it's shining right into your subject's eyes. The best light for people pictures is on a

TOP: In bright sun a profile is good. Your subject avoids looking at the sun and the lighting is even. Compare this with the picture of the girl on page 18.

BOTTOM: In the even light of a hazy day or bright open shade, shadows are soft, subjects don't squint. Include color in the subject or the background. You can "manufacture" bright open shade. See page 30.

bright, hazy day, or when a cloud passes in front of the sun. Another good light is bright open shade, which you can find next to a building on a sunny day, for example. But be sure that nothing blocks the light from the sky.

When to use the Lighten/Darken control

If you follow the basic lighting rules for daylight pictures, the electric eye will provide a well exposed picture every time with the black and white L/D control at its Normal position. However, you may wish to take another lighter or darker picture of the same subject in the same spot. Without changing location or lighting, turn the L/D control one mark toward Lighten (more white showing) or Darken (more black).

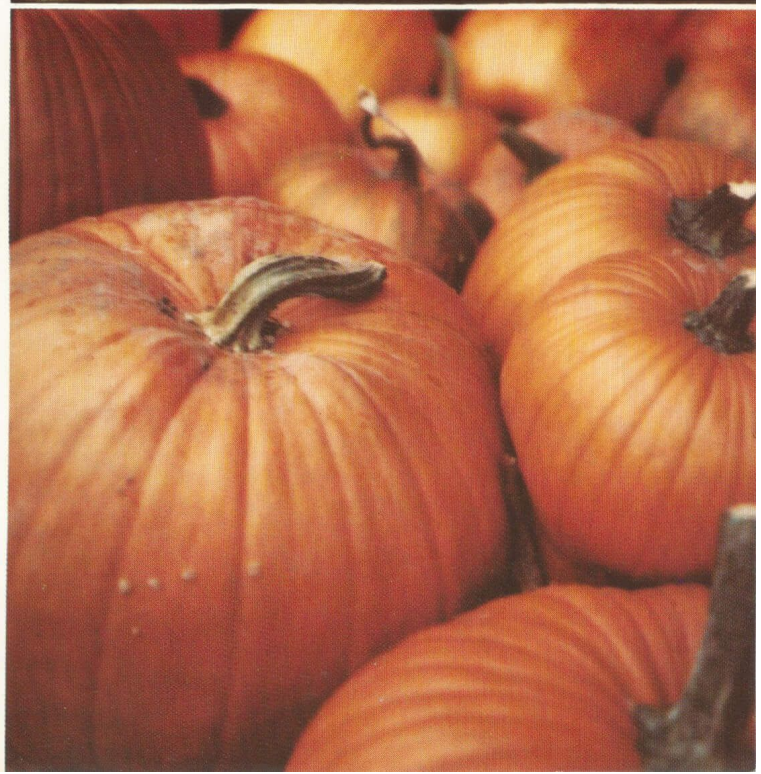
On a bright, overcast day the electric eye will "see" the light from the sky as being much brighter than the light on your subject. If your picture includes much bright sky the electric eye may be "fooled" and your subject may be too dark in the picture. Turning the L/D control one mark, or more, toward Lighten will help. Or, frame the scene in the viewfinder to reduce the amount of sky in the picture.

Taking pictures in hot and cold weather

Pictures develop best when the temperature is between 60°F and 85°F (15°-30°C). In hotter weather, shield the developing picture from the heat and light of the direct sun. *In colder weather, keep the camera warm until ready to use it and put the picture into a warm inside pocket as soon as it comes out,* being careful not to crush or bend it while it is developing.

If the camera and film have been allowed to get cold, development will be affected and your picture may be too dark. To avoid this, set the Lighten/Darken control one mark toward Lighten (or two marks if the camera is very cold) and keep the developing picture warm. For more important information about how cold and heat affect picture taking, please read page 51.





TOP: A colorful house is a good first subject.

BOTTOM: Try a simple close-up in bright sunlight. Focus very carefully and hold steady. Avoid shaky subjects, such as flowers in a breeze.





Daylight problems to avoid

FAR LEFT: If the sun is behind your subject, shining into the lens and the electric eye, you're likely to get this result. Remember – have the light on the subject coming from behind you or from the side.

LEFT: The subject is in the shade but the brightly lit background "fooled" the electric eye, so the subject is too dark. Remember – the light on the background should be about as bright as the light on the subject.





FAR LEFT: The subject is too far away and the background is a poor choice. No reason for this with the SX-70. The great viewfinder makes it easy to get near for a big image, lets you see the background and plan the picture to your taste before you shoot.

LEFT: Bright sun is uncomfortable for the subject's eyes and can cause harsh shadows like these. Compare this with the lighting for the profile on page 16. More about people and bright sun on page 30.

OPPOSITE PAGE: Good light + color + a big image + careful focusing, all add up to a pleasing, easy-to-take picture.







SUCCESS WITH FLASH PICTURES

As a general rule, you need to use flash everywhere except where there is plenty of bright daylight. For flash pictures of subjects as close as 10 in. or as far away as 20 ft., all you have to do is plug in a FlashBar array, focus carefully so the camera can automatically set the correct exposure, and press the red button. In less than 2 seconds you have the developing picture.

However, you must do two things to help the camera perform properly.

1. *You must focus accurately* to get the clearest, sharpest viewfinder image of the most important part of your subject, because focusing controls exposure for flash pictures.

2. If your picture includes more than one subject, they must all be about the same distance from the camera so they will be lit evenly.

Using the 10-bulb FlashBar

Press the connector firmly into the flash socket above the lens. *After firing the five bulbs on one side of the FlashBar, you remove and reverse it and fire the second row of bulbs.*



The camera automatically finds and fires the next good bulb facing the subject (it will skip a dud, should one turn up) so you can remove a partly fired array and use the rest of it later.

When you have taken the last picture in a film pack and the picture counter is at 0, the camera will not fire any more

TOP: An excellent setting for a first flash picture.

BOTTOM: For a close flash portrait, have the subject look to one side. This spares the eyes from discomfort and usually makes a more pleasing picture.

flashbulbs, even if there are good ones in the FlashBar. When all the bulbs facing the subject have been fired, the FlashBar should be reversed or removed. With a dead FlashBar array in place, pictures made without flash will not be correctly exposed.

Your first flash pictures

To assure their success, we urge you to take them as suggested below, using the pictures on these pages as models.

Start by picking a well lit area so you can focus easily. Light from ordinary room lamps will not affect the exposure of your flash pictures. Place a cooperative subject near a background – colorful if possible – but avoid shiny surfaces which will reflect "hot spots". Stand about 4 ft. away and focus carefully to get the clearest, sharpest viewfinder image of the most important part of your subject. Then, gently squeeze the shutter button until your picture comes out. Watch it develop. If it's good, change distance and angle a bit, refocus carefully, and try another.

If your picture is too light or too dark, the camera probably was not focused accurately. We urge you to practice focusing some more before trying to take another flash picture. If your pictures continue to be too light or too dark, please call our Customer Service, toll free (see page 62) and tell us about your problem.

When to use the Lighten/Darken control

In ordinary situations don't try to correct for too light or too dark flash pictures with the L/D control. Inaccurate focusing is usually the cause of the exposure error.

However, in a small, white room light bouncing off the walls and ceiling may cause overexposed flash pictures, even if you focus carefully. Try setting the L/D control one mark toward Darken (more black showing).

In a very large, high ceilinged, dark area, no light is bounced onto the subject and flash pictures may be too dark. Try





TOP: Look for a colorful background. Or, add color with clothing, flowers, toys, or other "props".

BOTTOM: Try a simple close-up with bright, non-reflective household items. Focus carefully.





setting the L/D control one mark toward Lighten (more white showing). This may also be necessary with very dark subjects, even in average sized rooms.

Know what you cannot do with flash

A flashbulb cannot provide enough light for an entire auditorium, or to photograph football, hockey, or other sports from up in the stands. Remember – the maximum distance for flash pictures is about 20 ft.

The SX-70 is not designed to take flash pictures in bright daylight and such pictures will not be correctly exposed. For the same reason, exposure for indoor flash pictures may be affected if the subject is near a bright, sunlit window.

Coping with "red-eye"

In some flash pictures the pupils of your subject's eyes may look red. This is a reflection from blood vessels behind the retina and it can occur with any type of camera if the flashbulb is close to the lens. It happens most often with young, blue-eyed people in dim light. The possibility of "red-eye" can be lessened by making the room as bright as possible, to contract the pupils of the subject's eyes, and by having the subject look elsewhere than at the flash.

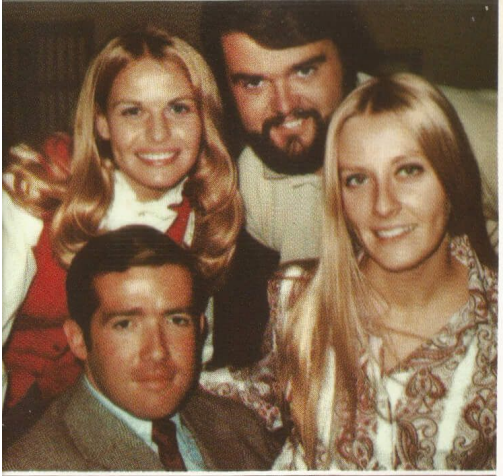
A word of caution about flash

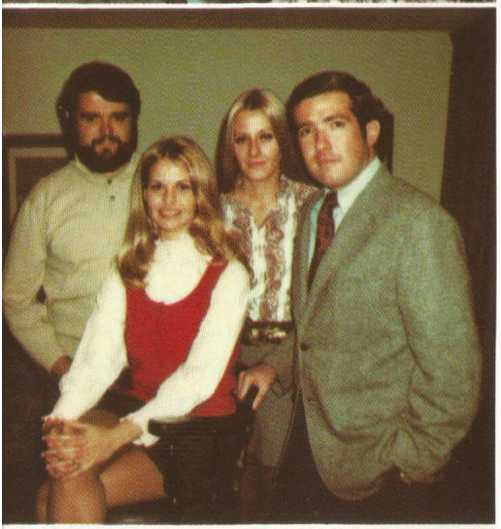
Some people find that the bright light from a flashbulb makes their eyes uncomfortable. To avoid causing possible eye discomfort for subjects near to the camera (3 ft. or less), ask them to look elsewhere than at the flash. Since close, full face portraits are not particularly flattering, having your subject turn away somewhat usually will improve the picture. Flash should not be used for ultra-close-up pictures of faces.

Flash pictures should not be taken where the atmosphere contains gases or dust that may be ignited by a spark.

TOP: For small people or pets the floor is a convenient background. You can make it more colorful by including a bright blanket or pillow. Shoot from a fairly high angle.

BOTTOM: Group pictures are easy – if everyone is the same distance from the camera. Please read the opposite page before trying a group flash shot.







Why everyone in a flash picture should be the same distance from the camera

As light travels from the flashbulb, its brightness drops rapidly. So if several people are at different distances from the camera they will not be lit evenly (pictures at right). However, if everyone is the same distance from the camera they can be lit evenly (pictures at left) whether the group is near the camera or far away.

RIGHT: The lens was focused on the nearest person, so the camera automatically set a small lens opening, as shown here, to provide correct exposure for that person. However, the more distant people are underexposed – too dark.

LEFT: Everyone was about the same distance from the camera, so when the lens was focused on one person, all the subjects were well exposed.



LENS OPENING

RIGHT: The lens was focused on the person midway between the near and far subjects, so the camera set a somewhat larger lens opening. The middle subject is sharp and well exposed, but the nearest one is overexposed (too light) and those in the background are underexposed (too dark).

LEFT: Everyone is farther from the camera, but since they are all at the same distance they are all sharp and well exposed.



LENS OPENING

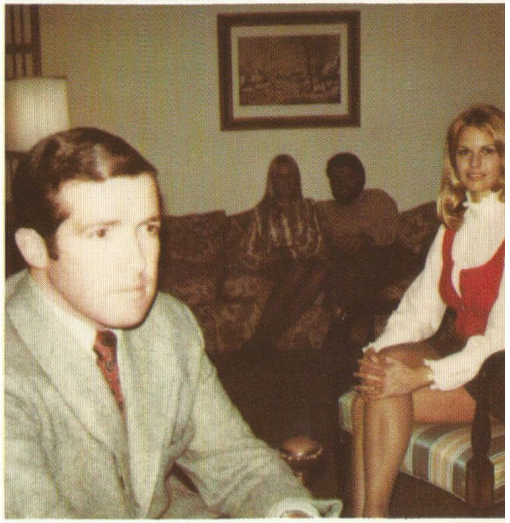
RIGHT: The lens was focused on the people farthest from the camera, so the camera set a wide lens opening for correct exposure. The nearer subjects are overexposed – much too light – and out of focus.

LEFT: They are far away, but since everyone is about the same distance from the camera they are all well exposed and in focus.



LENS OPENING







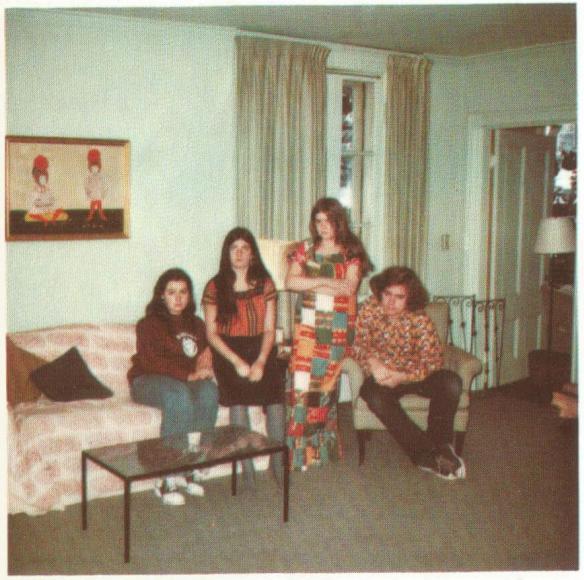




Flash errors to avoid

FAR LEFT: If you aim the flash directly at a window, mirror, painting, or any reflective surface, a "hot spot" will be bounced into the lens and the picture. To prevent this, move to the side and shoot at an angle so the light is reflected away from the lens.

LEFT: If part of your subject is closer to the camera than the rest, that part will be distorted and lighted unevenly.





FAR LEFT: If you stand too far away, you won't get clear details and good color. There's no need for this with the SX-70 viewfinder. Move in close for a large image and frame the scene as you want it to be in the picture.

LEFT: If the background is dark or distant the subject's head may fade into it. Exception: a dark background might be good with a white haired subject. Usually, however, you will get a better picture if the background is near and colorful.

OPPOSITE PAGE: A colorful subject, an attractive nearby background, and careful focusing are all you need to produce flash pictures like this with the SX-70.



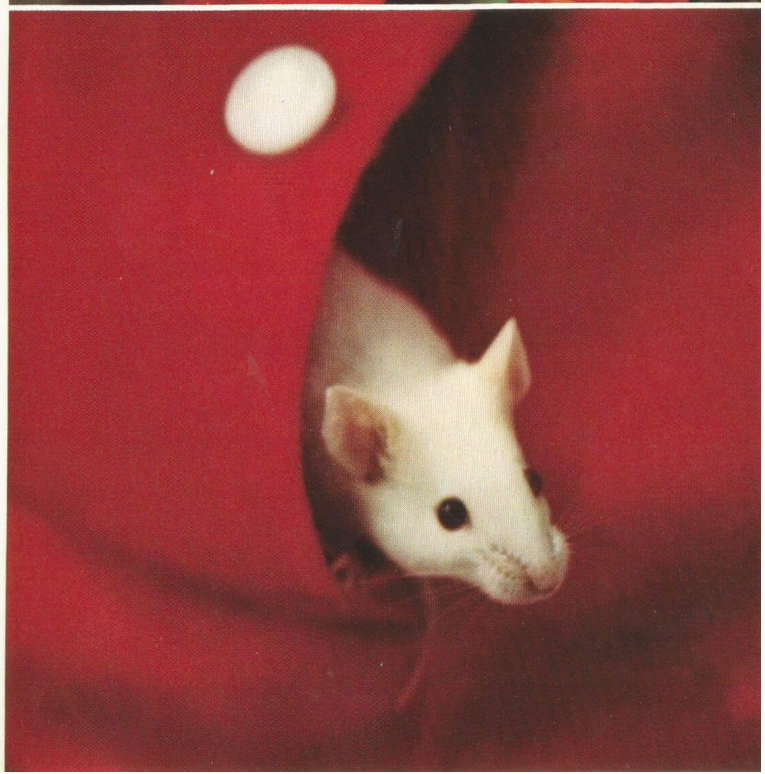


TAKE A CLOSE, CLOSE LOOK

With the SX-70 you have the key to a whole new world of exciting, beautiful pictures – the world of ultra close. With no accessories, no special techniques or skills, you can come as close as 10 in. for pictures that show your subject half life-size. You need only two things – plenty of light and a steady camera. Use bright sun, bright open shade, or flash, for best results. In dim light, without flash, you'll need a tripod (see page 52).

For maximum sharpness overall, try to have all the important parts of your subject about the same distance from the camera. Then frame your subject as you want it to be in the picture, focus carefully to get a clear image, and shoot.





TOP: When you can photograph tiny things, you are more likely to look for them. Ingredients for this picture were a sharp eye, bright sun, patience, and care not to annoy the central subject.

BOTTOM: The mouse could have been made bigger by coming even closer, but its smallness was emphasized by including more of the pocket. This was taken with bright, diffused daylight.

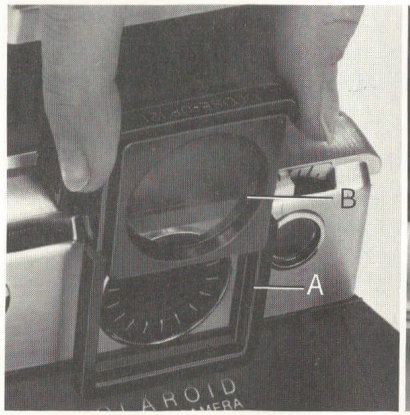
OPPOSITE PAGE: The soft textures of a peacock's feather were beautifully lit by flash, with just enough reflection to highlight the colors.



OPPOSITE PAGE: To duplicate this you need bright daylight (but not direct sun) and white paper or cloth behind the fish tank. You can restrict the movements of the fish with three sheets of glass placed at left, at right, and about halfway to the far side of the tank. A tripod will help and the tank glass must be absolutely clean.

SIMPLE ACCESSORIES GIVE YOU LIFE-SIZE PICTURES

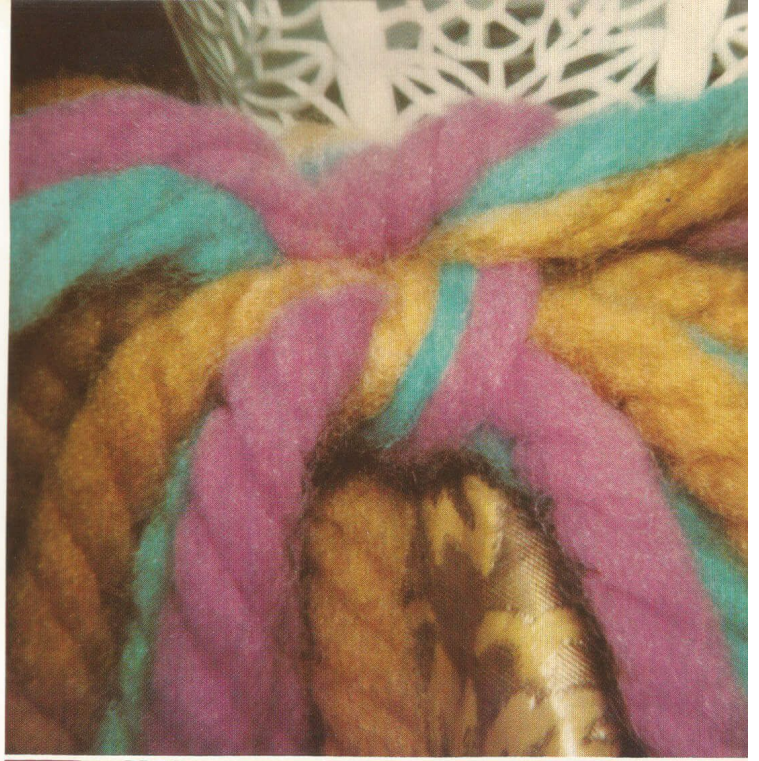
Attach the Accessory Holder #113 (A), slip into it the Close-up Lens #121 (B), and you're all set to take life-size pictures of objects as close as 5 in. from the camera. For flash pictures, snap on the Flash Diffuser included with the Close-up Lens.





TOP: The simplest items can take on a new significance, reveal unexpected beauty when you take a close, close look. Because the yarn has bulk and depth, some parts of the picture are slightly out of focus, which is good for this subject – you can almost feel its softness. The non-reflective surfaces are ideal for ultra-close flash – no "hot spot" reflections.

BOTTOM: To get the look of overall sharpness suitable for the subjects, the stamps had to be flat and all at the same distance from the camera. But to avoid a "hot spot" reflection of the flash from their smooth surfaces, the camera was aimed at a slight angle to the stamps. The red background added color and outlined the stamps clearly.







PEOPLE AND BRIGHT SUNLIGHT

Here are several ways to avoid the main problems of bright sun portraits – squinting and harsh shadows.

TOP: The young lady was turned away from the sun enough to avoid eye discomfort, but not so much as to put the far side of her face completely into shadow.

BOTTOM, LEFT: Look for natural reflectors to soften harsh shadows. Here, the wooden surface reflected light into the face shadows, softening them. Would the top picture have been improved by such a reflector?

BOTTOM, RIGHT: You can manufacture bright, open shade, with its even light and soft shadows, by turning your subject's face out of the direct sunlight. This works best when the sun is high overhead. If you do this, be sure that the light does not shine into the lens or the electric eye; also, you must turn the Lighten/Darken control two marks toward Lighten. See page 16 for more daylight picture hints.





PEOPLE AND WINDOW LIGHT

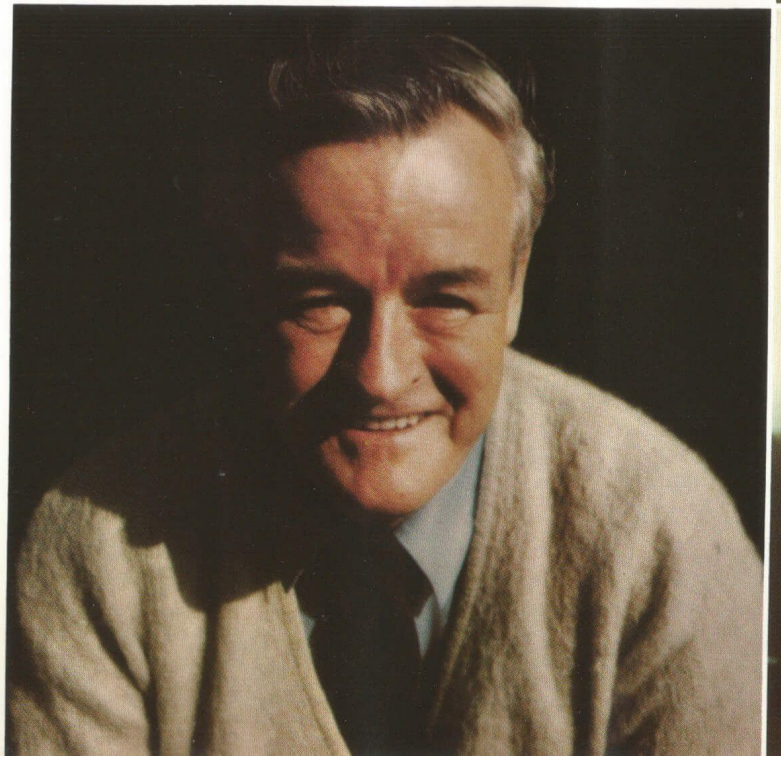
A big window is a fine light source for portraits. You can get varied lighting effects by changing the position of the camera and subject in relation to the window. To soften and diffuse sunlight, a thin, white gauze curtain is effective. On overcast days, window light may be bluish and your pictures may have a blue tint overall.

TOP: With the window behind the camera the subject is lit evenly. The well lit background outlines the subject.

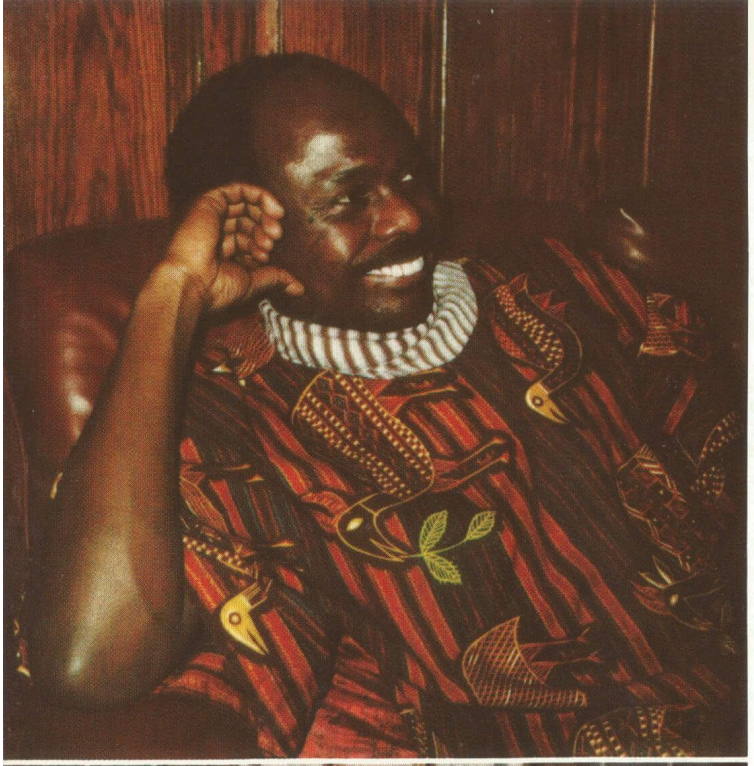
BOTTOM, RIGHT: The camera is at about a 45 degree angle to the window; the light is soft, suitable for the scene. The book reflects light onto the faces and the background is near and light colored.

BOTTOM, LEFT: For a dramatic portrait, place the camera and subject at right angles to the light. Or, with the camera in that position, let the subject face the window for a profile or three-quarter view.











PEOPLE AND FLASH

A large percentage of your people pictures will be taken with flash, and most of them will be shot in the home. Basic information about flash pictures starts on page 20. These pages illustrate how a little planning and attention to a few details can make your pictures more satisfying.

All these pictures have certain things in common that make them of high quality. They are lit evenly and are well exposed. This means that for group pictures the photographer made sure that all subjects were about the same distance from the camera and for every picture focused carefully to get the sharpest image in the viewfinder. The subjects pretty well fill the picture area – little space is wasted. The backgrounds are nearby, they are well lit, and the people are clearly outlined.

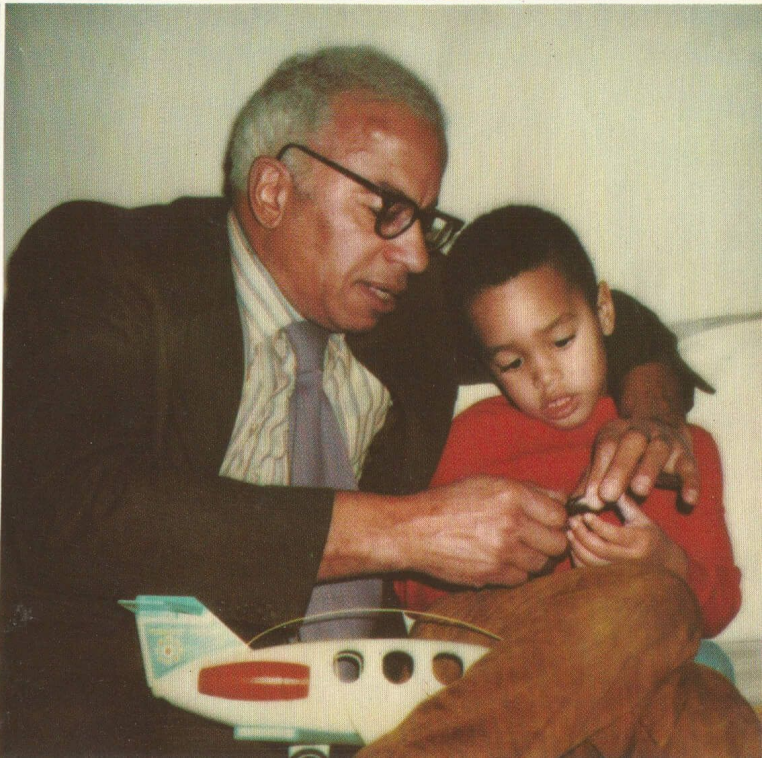
Pictures are more interesting when the people in them are doing things. Such simple actions as lighting a pipe, reading a book, looking into a mirror, stirring a cup of tea, or talking on the telephone, can add interest. Show people busy at their daily activities – in the kitchen, at the office or the workshop, or at their hobbies. People playing musical instruments, absorbed in a game, working on a jigsaw puzzle, a painting, or a piece of sculpture, soldering a hi-fi component, doing embroidery or knitting – all these are good subjects for flash pictures. Try some, and add your own ideas.

Notice that in three of the pictures at right parts of the subjects' heads have been cut off. This is no accident. Those pictures are included to show how the SX-70 viewfinder lets you "crop" pictures very closely and accurately to concentrate attention – a technique used by highly skilled professional photographers. You may not want to be so selective in your pictures, but the examples show what can be done when you use the viewfinder carefully for planning and composing the picture.













"AVAILABLE LIGHT" INDOORS

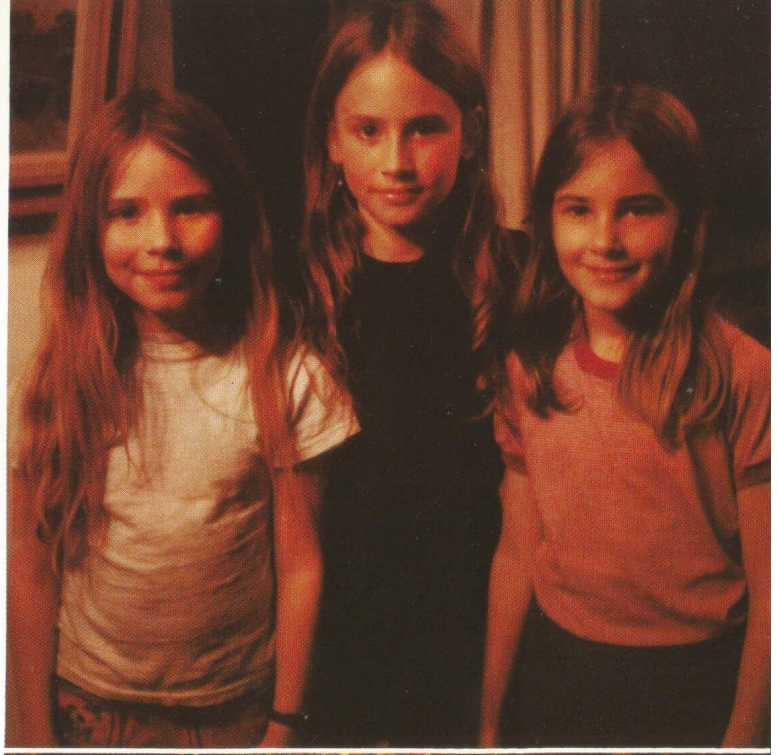
SX-70 film gives the most natural and pleasing colors when it is exposed in sunny daylight or with the light from a FlashBar array that closely matches sunlight. You can also get beautiful pictures indoors with other kinds of lighting, but they will look quite different from pictures taken with flash. As these "available light" sources are not as bright as daylight or flash, the camera usually will set a slow shutter speed or make a time exposure in order to give good results. A tripod or other firm support may be necessary.

Although pictures taken indoors without flash may not reproduce faithfully the colors of the subject, they often have charm and beauty that make them more attractive and interesting than flash pictures of the same subject would be.

TOP, LEFT: Fluorescent lighting tends to give a greenish tint to color pictures made with any camera and film, the amount of green depending on the type of tube. However, some tubes give reasonably pleasant skin tones with SX-70 film. If you want more information about using fluorescent lighting with SX-70 film, write to Customer Service (page 62).

BOTTOM, LEFT: Sunny daylight is made up of all the colors in the spectrum, from violet to red. Block direct sunlight with a cloud or a building and the remaining daylight will be bluish. Here, parts of the subject are in sunlight and have natural colors; areas that are not in sunlight are in bluish light, so the film records them that way. For more about using window light for indoor pictures, see page 31.

RIGHT: The light from ordinary tungsten lamps used in most homes lacks much of the blue that is an important part of daylight. So, when used with SX-70 film, which is designed for daylight and flash, tungsten lighting produces pictures with orange and reddish tones.



Avoid this problem

A bright lamp or window in an otherwise dimly lit scene will "fool" the electric eye and your subject will be too dark in the picture, as shown here. You'll get best results when the scene is lit fairly evenly; then, the electric eye will be able to produce well exposed pictures, even in quite dim light where a time exposure is needed.













LITTLE PEOPLE AND PETS

Pets and kids present similar picture problems. Usually, they're small, active, and near the ground. For single subjects or small groups, come close and try these two main approaches: aim down at them from your own height, or shoot at their eye level by kneeling, sitting on the floor, lifting the subject to a tabletop, etc.

TOP ROW: If you take the subject's-eye-level approach, keep your own eye on the background. In the daylight shots of the parrot and the boy, distant backgrounds have dropped out of sharp focus, but notice how well they are separated from the subjects by color contrast. If the camera had been held higher, the subjects would have been lower in relation to the background. Would the color contrasts have been as pleasing?

In the flash shot of the piglet, the girl's dark clothes outline the animal and the nearby wall provides color contrast for them both. How would the picture look if the girl was in white or pale pink and if the wall was white? What would a very dark background do? Is the picture better or worse because the photographer "cropped" off the top of her hat?

The SX-70 viewfinder lets you answer questions like these *before* you take the picture.

BOTTOM ROW: When you aim down at a small subject, the background usually is quite near and simple – the floor, a beach, a bed or chair, etc. For daylight pictures the angle at which you aim down isn't too important, as long as the background looks good in the viewfinder. In the picture of the young sailor the farthest point is perhaps 20 ft. from the camera. However, for flash pictures it's important to aim down at a rather sharp angle so that the background will be lit fairly evenly, as in the picture of the little girl and Raggedy Ann. For another good example of this see the dog on page 22.

The infant-on-the-bed shot is an old standby and it's often dull. In this one, the patchwork quilt was spread to provide a colorful background, the baby was placed diagonally across the picture to get the largest possible image, and the camera was aimed down sharply.



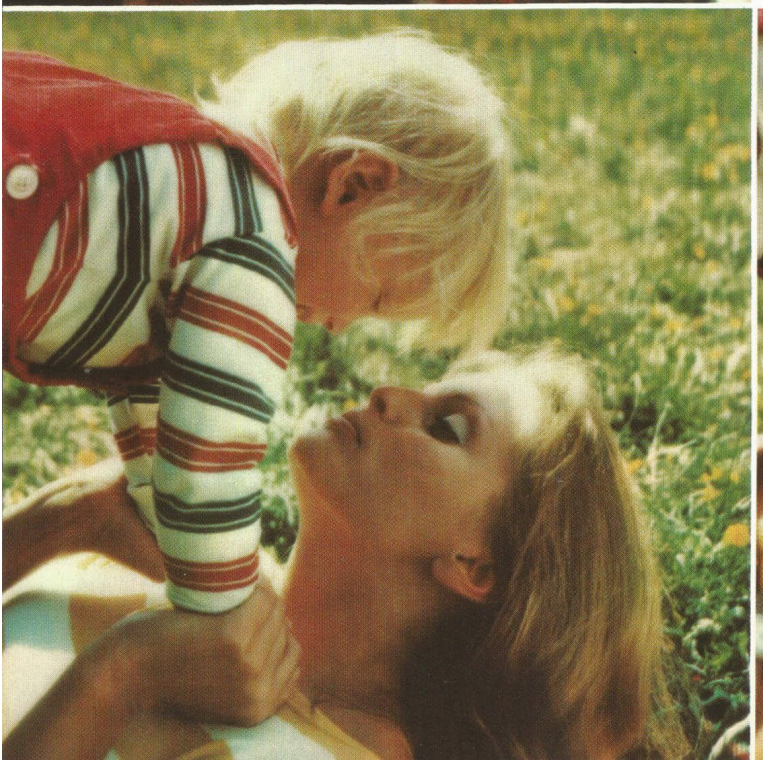


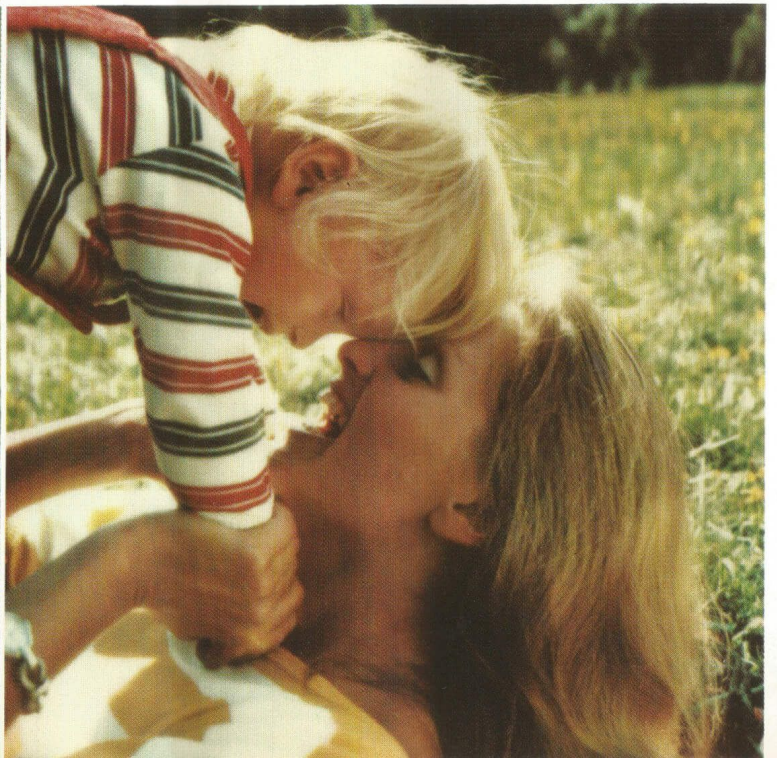


SHOOT A SERIES WITH DAYLIGHT OR FLASH

Shooting a series is more than just pressing the shutter button every two seconds, although that may be necessary to record some fast action. The best series pictures tell a story and they can be spaced seconds apart, or minutes, or even hours or days. Because you're going to use up a considerable amount of film, and maybe some flashbulbs, it's a good idea to take a test picture first, if possible, to be sure that you'll like the lighting, background, color, etc.

These two were in direct sunlight, but the photographer wanted soft, even illumination on both faces. So, the little boy was placed to look away from the sun and also to shade his mother's face. To get correct exposure for the shaded faces the Lighten/Darken control was set two marks toward Lighten. By coming closer for each picture, the photographer emphasized that this is a series. Because the SX-70 viewfinder shows the scene so clearly, it is easy to compose a picture carefully and closely, yet quickly.







This flash series is good because everyone is about the same distance from the camera, so they all are lighted evenly. The near side of the table is overexposed, but that's to be expected and it's not important. This is a real story series. First, anticipation. Then the cake arrives amid excitement. Finally, the candles are out and the young man at right is bored as he waits for the cake to be cut. To assure correct exposure, be sure to refocus carefully before each flash picture.







SCENIC PICTURES: Keep them simple and don't try to include everything

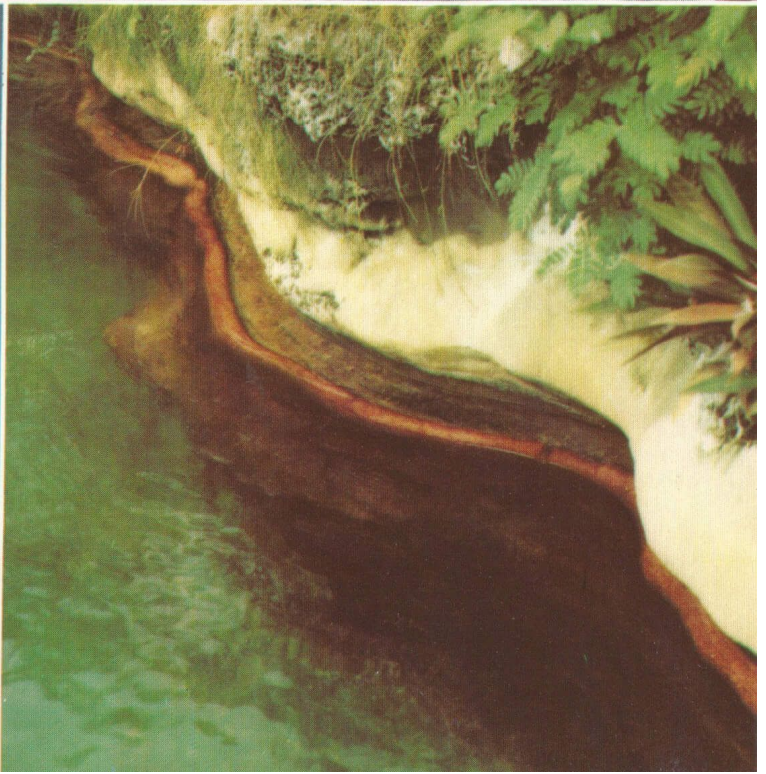
When scenic pictures are disappointing it's usually for two reasons – trying to include too much from too far away and lack of something interesting in the foreground.

These pictures concentrate attention on one part of a scene, yet each tells much about the entire setting. The piece of barn implies a whole farm; the brilliant autumn leaves tell you that the countryside must be ablaze with color; the sunlit tower is reflected in the shaded glass of a modern skyscraper; the sand, coral, and plants will remind the photographer of a warm climate.

These pictures are made interesting by diagonal lines that lead the eye from the foreground to more distant points; by simple outlines; by contrasting colors that clearly separate the foreground from the background; and, in the reflection shot, by a piece of the structure that forms a frame around the areas of interest. The SX-70 viewfinder is ideal for finding these elements in a scene and arranging them for maximum interest.








EVA GRACE

SCENIC PICTURES: Lighting sets the mood and can be as varied as the scene

As these pictures show, almost any kind of lighting can be right for a scenic picture. An exception might be bright sun high overhead, which tends to flatten out details in the landscape; a lower sun casts longer shadows.

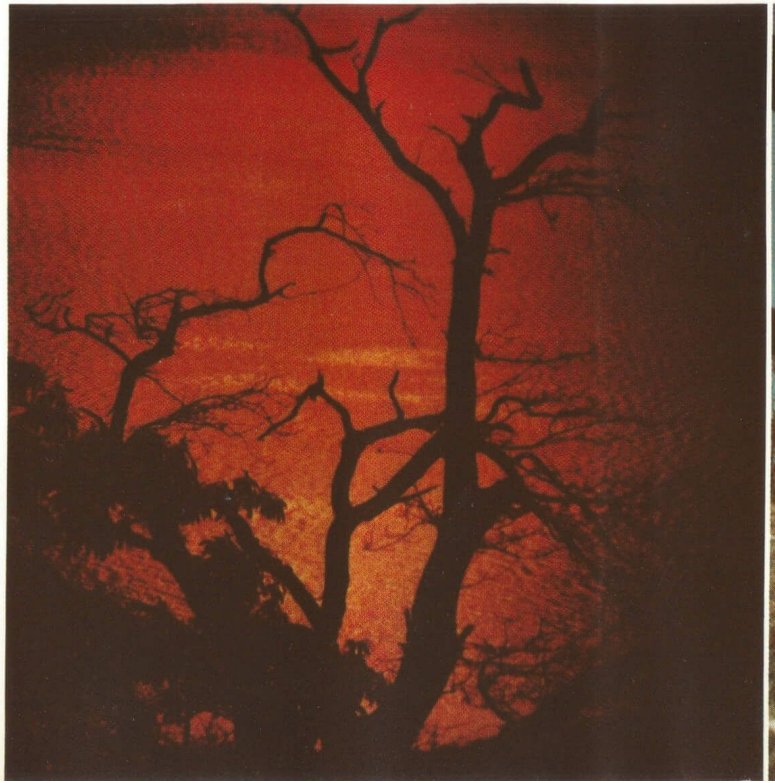
For the pale sunset and the foggy day picture the light was weak – the camera had to make a relatively long exposure. A tripod would help in such situations.

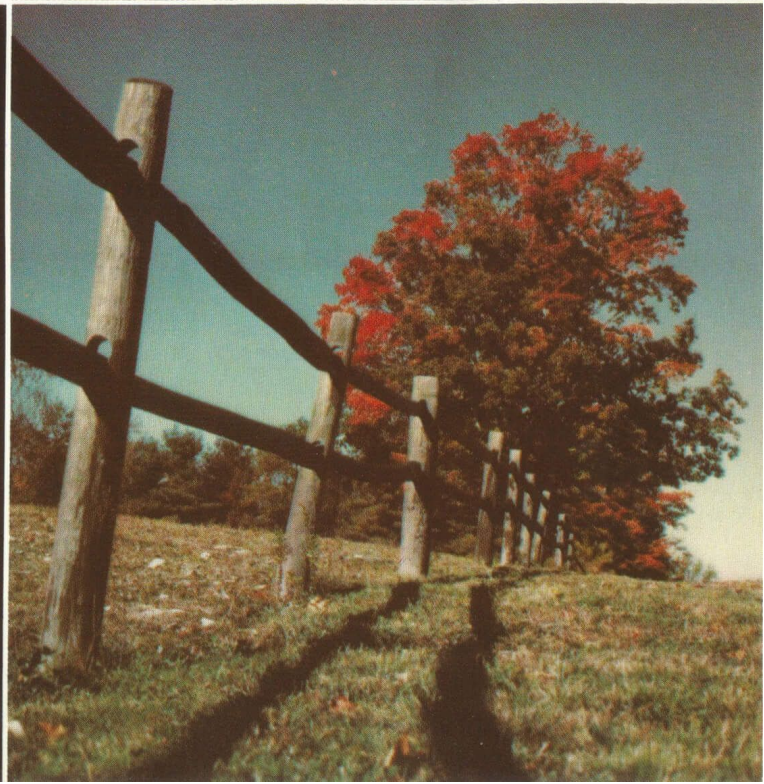
The diagonal fence leads the eye to the tree; without the fence the tree would be insignificant. Without the tree the fence would not be enough. Together, these two simple elements make a striking picture.

Would the fishing boats be as interesting if you could see the far shore? Or the brilliant orange reflection as memorable without the silhouetted trees? Or the pale sunset complete without the dark objects on the water?

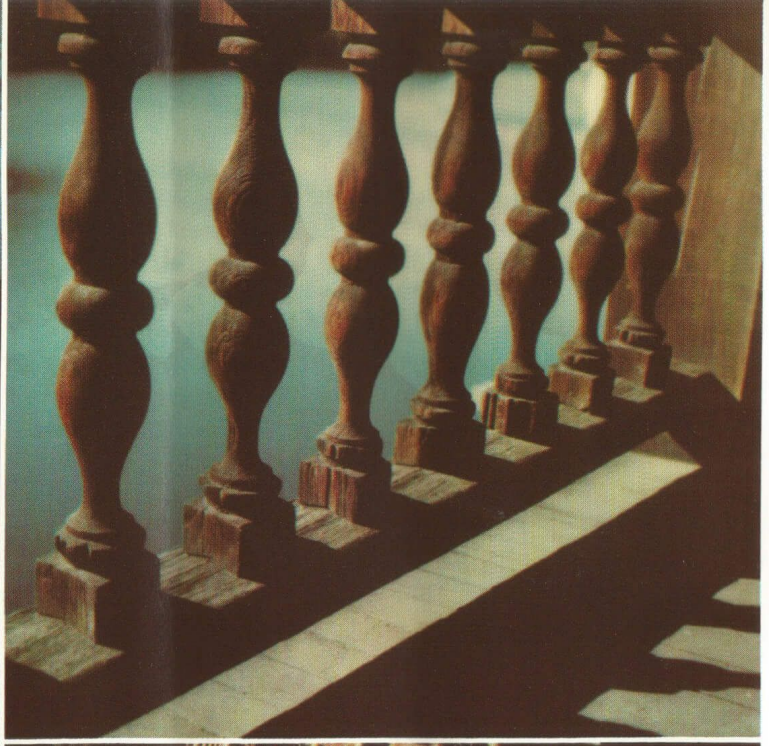
All of these scenes were clearly visible in the SX-70 viewfinder before the pictures were taken. You too can and should use the viewfinder just as successfully.















WAYS TO SEE A SUBJECT

Why stop after taking one picture of a subject? By changing angle, lighting, distance, etc. you can make a more interesting record than any single picture could provide. Here are a few examples.

FAR LEFT: The portrait of the potter at work, taken from several feet away, communicates more when paired with the close-up study of her hands shaping clay.

LEFT: Bright sunlight shining through a porch railing created many combinations of patterns and shadows. First, the pattern of the rails themselves, with just a hint of the shadows cast by them. Then, the shadow of the rails lining up with the rockers. The shadow of the rockers would make a third interesting picture.

THIS PAGE: Here an ordinary view of a Greek temple is enriched by two more personal studies, taken from different distances and perspectives, and with different lighting effects. For the picture below right, the light on the subject came from behind and slightly from one side. For the picture directly below, the photographer faced the sun to produce a striking silhouette.















MAKE A RECORD: ART OBJECTS

Because it allows you to focus as close as 10 inches from an object and to make time exposures as well as flash and daylight pictures, the SX-70 is ideal for photographing art objects, small and large, outdoors, in museums, or in home collections.

Both photographs at the top left were taken with window light, making use of the SX-70's capability for automatically timing long exposures. For an available light picture, the lens will usually be open to its maximum size; the zone of sharp focus will be shallow and you will not be able to get everything in sharp focus. Focus carefully on the part of the object that you want to have sharp in your picture and hold the camera steady. A tripod is useful for time exposures (see page 52). If you don't have one, steady the camera by bracing it against a wall or table, always making sure that the picture exit slot is not blocked.

Two important considerations when photographing small objects with flash are background and camera angle. A non-reflective material such as fabric or dull paper of a plain, bright color displays the objects best. Drape the material smoothly over two surfaces that form a right angle to each other – a table against a wall, a box or book on a table, the seat of a chair. Place the object to be photographed on the horizontal surface, close to the background. As it gets farther away from the background the shadows cast by the flash will be more pronounced, and the lighting on the background will be uneven.

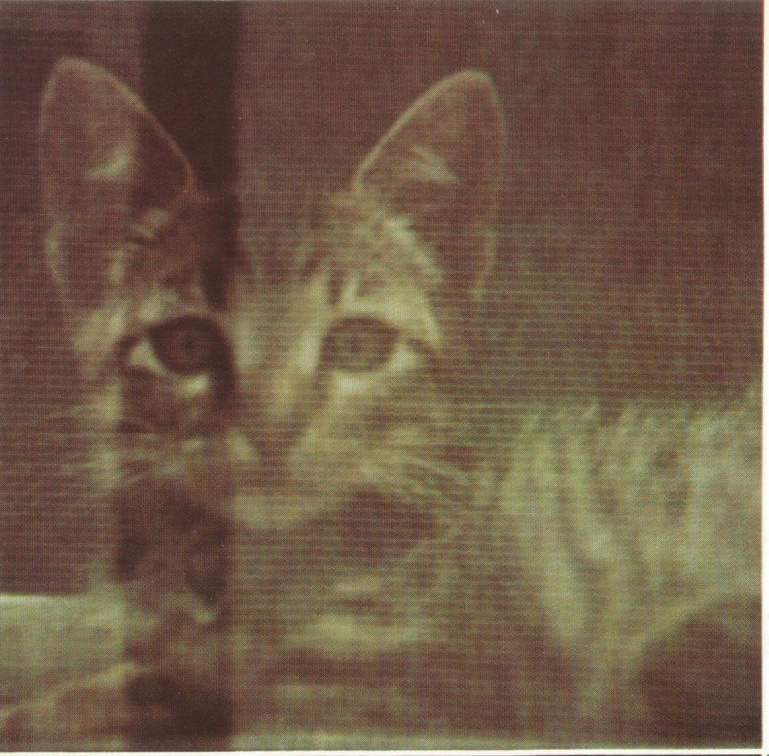
The second important consideration is camera angle. Many small objects – both the horse and the plate at the bottom left are examples – have highly reflective surfaces and light bouncing off these surfaces can cause "hot spots" in your pictures. Avoid this problem by holding the camera at an angle to the object while photographing it.

To avoid "hot spot" reflections when taking flash pictures of paintings, posters, maps, and other large smooth surfaces, stand opposite one end of the painting (or whatever it is) and shoot the picture at an angle. The picture at right is a good example of how to do it.

Non-reflective surfaces, like the needlepoint at the top of this page, can be photographed head-on.

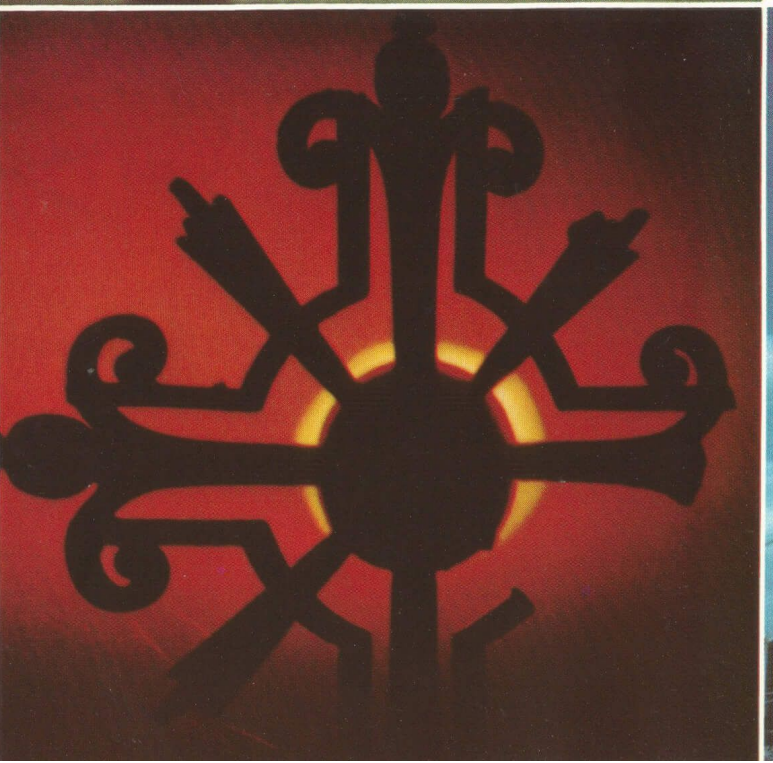






MAKE A RECORD: THE UNEXPECTED

Carry your camera wherever you go, and you may have the luck to catch an eye-stopper like the ones on these pages. They were all made by someone with an eye for the unusual who happened to be at the right place at the right time – with a camera. Whether the circumstances of each picture occurred through careful planning, patient waiting, or sheer luck, the result in each case is a stunning one. Why leave such a portable camera at home?






BOSTON



TIME EXPOSURES

In dim light your camera can make automatic time exposures as long as 14 seconds, depending on lighting conditions. For best results, the light on the scene should be fairly even. Indoors, a bright lamp or window in the scene may "fool" the electric eye and cause the rest of your picture to be too dark.

The camera should be on a firm support – a tripod is best, and you'll need a tripod adapter (page 52). The remote shutter button (also page 52) is helpful in preventing camera shake.

Squeeze the red shutter button gently for at least a full second – you will hear the mirror fly up. Then you can let go of the button and the camera will do the rest by itself. When the electric eye has completed timing the exposure, the shutter will close and the picture will come out and start to develop.





COLD AND HOT WEATHER PICTURES

Taking pictures in the cold

SX-70 pictures will develop best when the temperature is between 60°F and 85°F (15°-30°C). In colder weather, keep the camera and film warm inside your coat until ready to take the picture and put the developing picture into a warm inside pocket as soon as it comes out of the camera, being careful to avoid bending it or putting pressure on it.

If the camera and film have been allowed to get cold, development will be affected. Your picture may be too dark and the colors may be too blue, as in the bottom picture. Some of this effect may be avoided by taking the picture with the Lighten/Darken control set one or two marks toward Lighten and by keeping the developing picture warm.

Taking pictures in extreme heat

When the temperature gets over 85°F (30°C) development processes may be affected, causing your picture to be somewhat overexposed – too light. You can adjust for this by turning the Lighten/Darken control toward Darken one mark, if a small amount of adjustment is needed, or two marks, if more adjustment is required. While the picture is developing, protect it from the heat of direct sunlight.





TOP: The camera was kept warm before taking the picture and as soon as the exposed film came out it was put into a warm pocket. These simple precautions made it possible to get excellent results, despite the cold.

BOTTOM: The camera was not protected from the cold beforehand and the picture was allowed to develop in the open air. The cold affected the development process, causing the picture to be too blue.



ACCESSORIES ADD TO THE PICTURE FUN

These accessories can be attached to the versatile SX-70, making it even more fun to use.

Carry your camera wherever you go in its beautiful top grain cowhide Carrying Case #114 (A); it matches the leather that covers the camera.

The Accessory Holder #113 (B) plugs into the flash socket and allows you to slide a Close-up Lens #121 (C) and a Lens Shade #120 (D) over the camera lens. With the Close-up Lens you can move in to 5 inches to reproduce objects actual size in your pictures. FlashBar arrays plug into the top of the Accessory Holder for ultra-close flash shots.

The Tripod Mount #111 (E) holds the SX-70 on any standard tripod. The 18-inch Remote Shutter Button #112 (F) plugs into the SX-70 shutter housing, lets you take a picture without touching the camera.

Additional accessories will be available in the future. Write to Polaroid Customer Service for more information (page 62).



IT'S EASY TO GET EXTRA PRINTS AND ENLARGEMENTS

Share your favorite SX-70 pictures with family and friends. The virtually grainless prints make beautiful copies and enlargements as shown here. And Polaroid Copy Service is equipped to give prompt, high-quality results. Order from your dealer, or directly from Polaroid Copy Service, using the convenient order form printed on the back of the film cover.

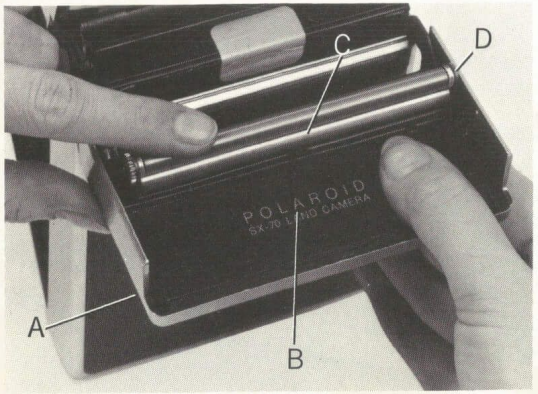
CARE OF YOUR SX-70 SYSTEM

The camera

A camera is a precisely made optical instrument that should always be handled with care. Keep it closed when you are not using it, to prevent dirt and dust from getting inside. Remember that rough handling or dropping may damage delicate components.

The lens and viewfinder eyepiece will seldom need cleaning. If they do, blow off any dust, then wipe them gently with a clean, lint-free handkerchief or cloth.

Before loading each new film pack, examine the rollers inside the film door as described below. To prevent dust from entering the film compartment, it's best to do this while an empty film pack is still in the camera. Rest the back end of the camera on a table, or support it in some other way to prevent it from dropping. Open the film door (A) and depress the light shield (B) to expose the rollers (C). Use a finger to rotate the rollers, which should move freely. Remove any specks of dirt from them with a clean, lint-free cloth, moistened with water if necessary. Pay special attention to the raised ends (D) on the top roller, where dirt may collect.



The rollers must be kept clean; inspect them frequently.

The film

Polaroid SX-70 Land film, like all film, should be kept cool. Avoid storing or leaving it in a hot place, or subjecting it to high temperatures or direct rays of the sun for long periods. The glove and luggage compartments of a car, for example, are not good places to carry your film.

If possible, store the film in an area with a temperature below 75°F (24°C); for long-term storage, keep it in a temperature below 65°F (18°C).

In unusually hot weather, you may refrigerate the film, but be sure to remove it from the refrigerator at least one hour before using it, to allow it to warm up to room temperature.

Until you actually place the film into the camera, leave it unopened in its protective carton, which is especially designed to preserve the freshness of the film.

Take the same care of a loaded camera as you do with film, to keep it cool during storage and transportation.

The pictures

When your SX-70 picture is automatically ejected from the front of the camera, remove it by its wide white border. Hold it by the border while you watch the image emerge. Be careful not to bend or crush the print as it develops.

Although SX-70 pictures are extraordinarily durable, it is advisable not to handle them excessively during development. After they are fully developed, treat them as you would any normal photographic print, observing the usual precautions not to fold or crease them.

The finished SX-70 picture is sealed within its frame against a reflective white pigment that imparts a remarkable luminous quality to the image. There are no waste materials to discard, no need to cut or trim away any part of the picture. Cutting the borders of a picture destroys its structure and makes it vulnerable to damage from the environment.

For long-term preservation of your SX-70 pictures, store them in the Polaroid Album #117 which provides a convenient storage and attractive display system. Although SX-70 pictures are extremely resistant to fading, like any color images they should not be exposed for long periods to bright sunlight.

If you ever have a problem with your camera or film

Before you try anything else, call us. Our Customer Service department is as close as your telephone. One of our representatives will be glad to talk to you about your camera. We can be reached on weekdays from 8:00 AM to 5:00 PM (Eastern time). From anywhere in the U.S.A. except Massachusetts call 800-225-1384 toll-free; from Massachusetts and anywhere in Canada, call collect 617-864-4568.

If the camera does not eject the film cover or film

When you insert a new film pack or press the shutter button, the camera should do two things: make its usual motor noise and eject the film cover or a piece of film. If it does not do either, the battery in the film pack may not be working. Try another pack. If the film cover comes out this time, the battery in the first pack was probably dead. We will replace it if you return it to your dealer or to Polaroid Customer Service (page 62).

If the camera makes its usual noise, but does not eject the film cover or film, the cause may be with the film pack, although not related to the battery in it, or it may be with the camera. Check by inserting another pack. If the film cover comes out of this pack, it indicates that the first pack was not working properly. To replace it, return it to your dealer or to Polaroid Customer Service (page 62).

If the film cover does not come out of the second pack, the camera may not be working properly. Call Customer Service at the number given above, or return your camera as described on page 63.

If the camera stops during a cycle

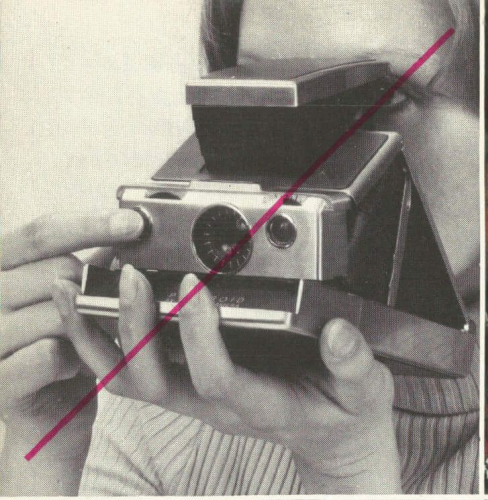
In rare cases, the camera may stop in the middle of an operating cycle, because the motor is not getting enough power to continue. There are two possible reasons for this.

One is jabbing at the shutter button instead of holding it until the picture comes out. The remedy is simple – press the shutter button again and hold it. The camera should complete its cycle. If it does not, open the film door in dim light and pull the pack out about an inch, just until the camera counter resets. Push the pack back in again and close the film door. The camera should complete its cycle, ejecting the top piece of film which will have been exposed to light and should be discarded.

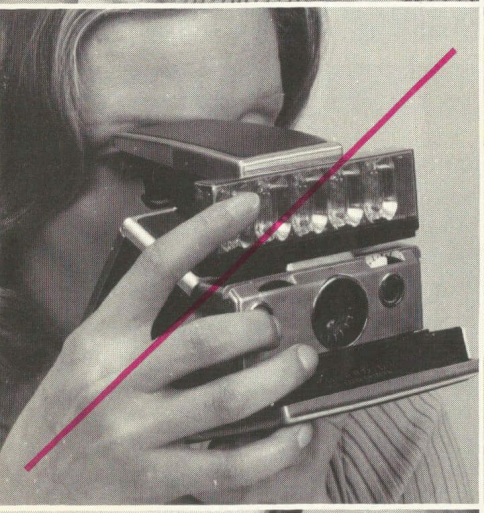
If it does not, the problem is probably caused by the battery in the film pack which, like all batteries, can weaken as it ages. It may only have sufficient power to start the operating cycle, not to finish it. To solve this problem, remove the pack and insert an empty one* – most empty packs still have some power in reserve. If the camera completes its cycle, indicating that the battery in the first pack is dead, return the pack to your dealer or to Polaroid Customer Service (page 62) for replacement.

If none of the suggested remedies makes your camera complete its cycle, call Customer Service at the number given in column one of this page, or return your camera for repair (page 62). Do not try to close it completely as this may damage the picture-taking mirror, which is in the mid-cycle position. For temporary storage or shipping, you can collapse the camera to the point where you feel a little resistance, but do not force it shut.

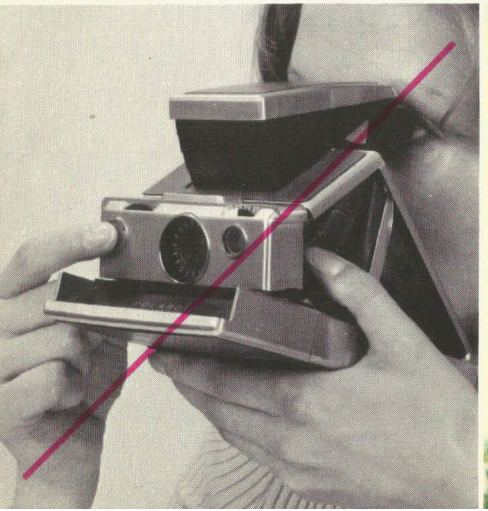
* If you do not have an empty pack on hand, you can use a fresh one, but you do risk losing one or more pieces of film. If the pack will not go in easily, do not force it but call Customer Service. If the film cover sticks out of the pack and the door will not close, remove the film cover and then close the door. Or, if the film cover is ejected only partway, open the film door and remove it from the rollers by turning the rollers forward. Never try to force it through the rollers without first opening the film door.













If the camera is not held correctly

Always hold the camera as shown on page 10, with your left hand toward the back of the camera body, and your thumbs and fingers away from the picture exit slot and the bellows. Holding the camera in any other way can cause a number of picture problems.

FINGERS BLOCKING THE PICTURE EXIT SLOT will cause pictures with horizontal creases, yellow-colored areas, feather-like white areas, or a combination of these. Keep your fingers away from the picture exit slot. If a piece of film becomes jammed there, open the film door in subdued light and gently rotate the rollers to move the film backward or forward through the rollers. Never try to remove film without first opening the film door.

FINGERS IN FRONT OF THE CAMERA can cause a variety of picture problems. In flash pictures, a finger in front of the FlashBar may cause light to be reflected directly back through the lens, fogging the picture. In natural light pictures, a finger in front of the electric eye may cause the camera to set a wrong exposure. Always use the right index finger to focus and to press the red shutter button; keep the right thumb behind the shutter housing and the other three fingers curled back into the palm of the hand, as shown on page 10.

FINGERS ON THE CAMERA BELLOWS will cause pictures with the top part fogged, or pictures with foggy or streaky light patterns, or outdoor pictures that are completely white. This happens because anything touching the camera bellows may block movement of the mirror inside the camera. If the mirror gets blocked, the shutter blades may open before it has moved down to cover the film, and the top piece of film will become fogged.

If part of the picture is missing

The pod of chemicals probably broke or was damaged before the film unit went through the rollers. This may cause developer chemicals to leak onto the rollers, the picture exit slot, and the back of the picture. If you ever get a picture like the one at the right, check the back of it. If there are developer chemicals on it:

1. Clean the rollers (page 54). If developer chemicals have dried on them, use a moistened cloth.

2. Clean the picture exit slot, as shown at the far right. Insert the film cover, or a clean piece of paper of the same size, in front of the rollers (A) and under the light shield (B). Push until it comes out through the picture exit slot (C). Move it in the slot until it absorbs all the developer chemicals. Be careful not to force the slot open, as it can be permanently bent and therefore will no longer perform its function.

If chemicals are smeared on the back or front of a picture, wash them off after the picture has developed fully.

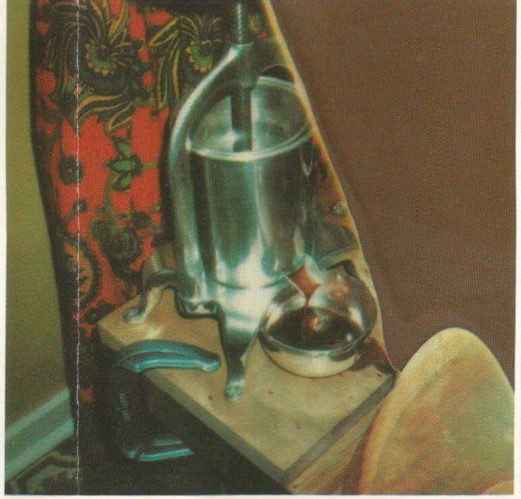
If there is dirt on the rollers

The bar pattern at the right may be caused by dirt on the raised ends of the top rollers. The repeated spot pattern at the far right may be caused by specks of dirt on the rollers themselves. Clean the rollers as described on page 54. The location of spots on the picture will help you to locate the dirt on the rollers.

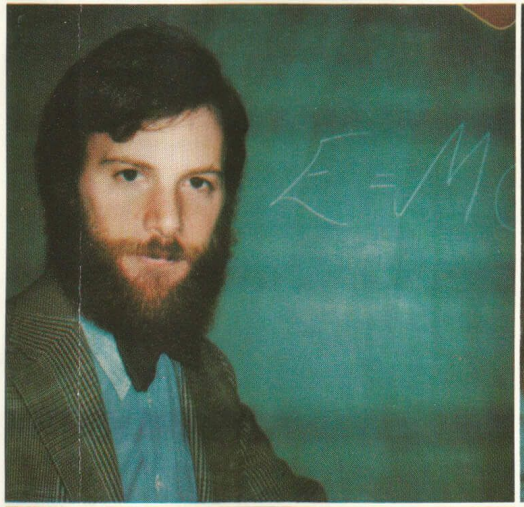
Other problems

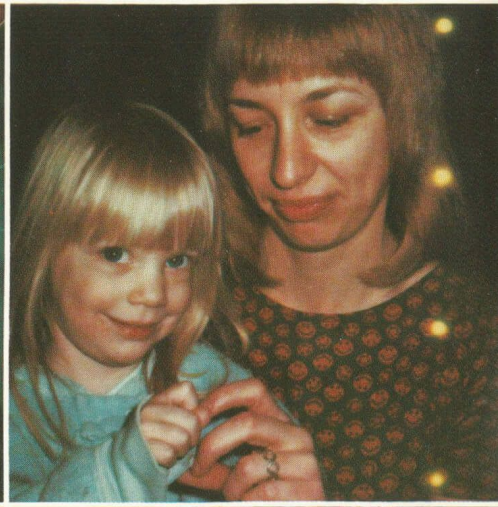
CAMERA SHAKE, RIGHT: If everything in a picture looks fuzzy and unsharp, the camera may have moved as the picture was being taken. Always hold the camera steady until the picture comes out of the slot.

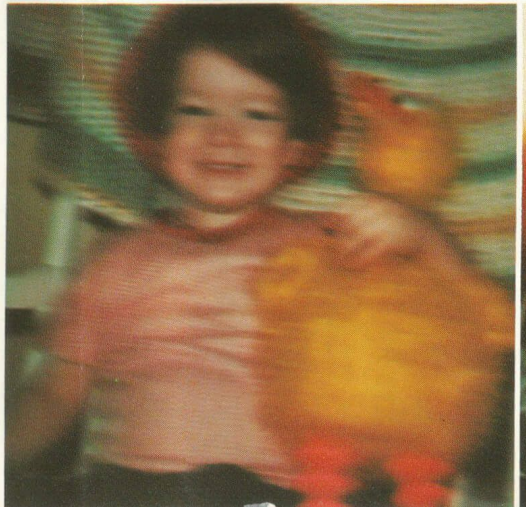
FOGGED FILM, FAR RIGHT: White areas in a picture indicate that the film was fogged before it was exposed. This can be caused by removing and reinserting the film pack in the light. The fogged area will then appear in the upper left corner of the picture and it may have a red or orange tint. If it is ever necessary to remove and reinsert a film pack, do so in subdued light.













HOW THE SYSTEM WORKS

SX-70 is the most highly automated and self-sufficient photographic system ever devised. To take the picture, all you need do is to open the folded camera to the "taking" position, focus on the subject and press the shutter button. The camera does everything else for you. The film, after being ejected from the camera, develops itself, in full daylight, and stops developing at the proper time without any intervention from you. The electronic circuits, which constitute the nerve center of the camera system, would, only a few years ago, have taken up considerably more space than the entire camera does today. The negative and positive of the film are, together, far thinner than the corresponding sheets of the Polacolor film that has been used for billions of color pictures since 1963.

The camera

In the SX-70 camera, the light from the scene being photographed travels to the viewer, and to the film, through a complex, partially movable mirror system. For viewing purposes, the light is reflected four times within the camera, before it reaches the eye. When the photographer is ready to take his picture, and presses the shutter button, this elaborately folded light path is redirected, this time through just one mirror, to the film.

The picture-taking mirror distinguishes the SX-70 camera from most conventional cameras, in which the light travels from the lens straight to the film to make the exposure. The "taking" mirror serves two purposes. Without it, the picture on the SX-70 film would be a left-to-right reversal of the original scene. The mirror reflection of the image corrects this. The mirror also effectively increases the lens-to-film distance within the camera body, enabling a relatively large picture to be produced within a relatively compact camera body.

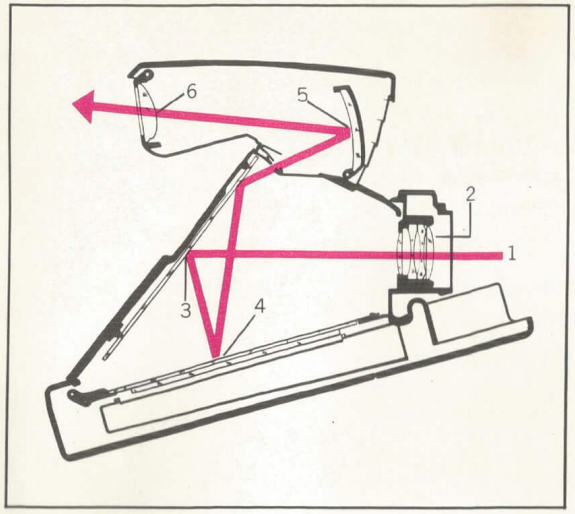
The SX-70 shutter consists of two simple aperture blades, which slide by each other. The blades contain two sets of holes: a large set, which forms the aperture for the taking lens, and a smaller set, for the lens of the electric eye, which provides automatic exposure control. The amount by which the blades are permitted to move past each other determines both the amount of light entering the lens, and the duration of time it can enter. Thus, the blades perform the job of both the shutter and the lens diaphragm of a conventional camera.

When you press the red shutter button, you close an electrical switch that sets in motion a complex and completely automated sequence of events. First, the shutter blades close and the hinged "taking" mirror moves into the correct position. The shutter blades begin to open again, to expose the film. The tiny photocell of the electric eye measures the amount of light coming in through the small set of holes in the shutter blades. When half the total amount of light needed for correct exposure has passed through, the electronics automatically reverse the movement of the blades, closing them again at a carefully controlled speed.

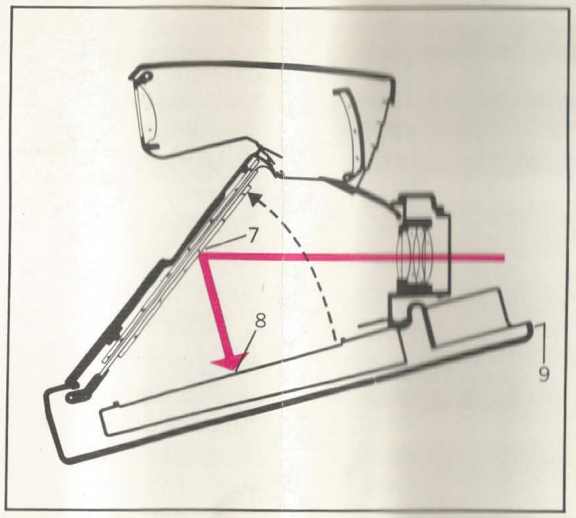
For flash pictures, the shutter works a little differently. When you plug in a FlashBar, you automatically disconnect the electric eye and bring into action other circuits that direct the shutter to remain open for 1/40 sec. for all flash pictures. The size to which the shutter aperture is permitted to open is controlled directly through the focus wheel of the lens. Thus, focusing the camera on any specific distance automatically sets the correct flash exposure for that distance. The farther the subject is from the camera, the wider will the shutter blades open for the flash exposure, thus assuring correct exposure at all distances within the flash range of the camera. Apertures for flash pictures vary from a tiny f/90 for a subject at 10 in. to a maximum of f/8 for subjects at 15-20 ft.

Once the shutter has closed after an exposure, a motor whirs and the film is squeegeed between the processing rollers in the lower front of the camera. Chemicals from the pod on the film are spread thinly through the emulsion layers of the film. The film is automatically ejected from the camera, and develops before your eyes.

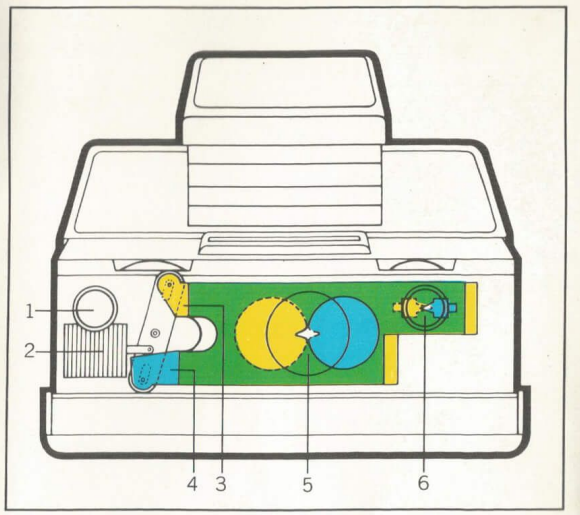
The "taking" mirror is automatically lowered once more, to uncover the viewing system, making the camera ready to take the next picture.



The SX-70 is a folding single-lens reflex camera. Its multiple mirrors bounce light rays back and forth to achieve, firstly, the required viewing and focusing conditions and, secondly, the proper light path for taking the picture. For viewing and focusing, light (1) enters the camera through the taking lens (2) and is reflected downward by the viewing mirror (3). Light rays then strike a patterned Fresnel mirror (4), which is designed to reflect them upward in a smaller focused beam. This beam is reflected off the viewing mirror once again and then passes on to the viewfinder mirror (5). From there it passes through the viewfinder lens (6) to the eye.



When the electric shutter button is pressed, the shutter, which was open for viewing, closes immediately and the motor turns to unlatch the patterned mirror. This mirror, which is used only for viewing, then springs upwards out of the way (vertical arrow), against the back of the camera. At this point the "taking" mirror (7), which is on the reverse side of the patterned mirror, is in place for use. The shutter then opens to take the picture (see diagram at right). Light rays pass through the lens and are reflected from the taking mirror down to the film sheet (8). The electric eye measures the light for correct exposure and the shutter closes at the proper moment. The exposed film is now ready to be transported by the gear mechanism through the film-development rollers and delivered to the photographer through the exit slot at (9).



When the shutter button (1) is pressed, power is supplied to a solenoid (2), an electromagnet with a moving plunger. The plunger moves, actuating a pivoted lever that slides the two shutter blades (3 and 4) past each other, closing the shutter completely. The patterned mirror flips up bringing the taking mirror into position (see left) and turning off the solenoid. The shutter blades then begin opening to make the exposure through the taking lens aperture (5). The electric eye aperture (6) opens at the same time and the photocell begins to measure incoming light. When the computer determines that half the necessary light has entered, the blades begin to close, to end the exposure.

The film

Everything needed for the processing of the SX-70 picture is contained within the film unit. At the end of processing there are no tabs, negatives or other waste materials to discard. Each film pack has its own built-in battery, to power the camera's mechanism.

The film unit has two main components – a negative and a positive. The negative contains the dyes which, during processing, will physically migrate to the positive to form the color picture. Along one edge of the film runs a developing pod, containing all the processing chemicals.

An extraordinary aspect of the film is that the positive sheet lies permanently on top of, and in contact with, the negative. How, then, can the negative be exposed? By having a positive sheet that is transparent.
The negative is exposed through the positive sheet.

As soon as processing begins, and the film unit is ejected from the camera, the contents of the pod are released. The pod contains three main constituents. One of these is an alkali, which penetrates all the layers of the negative and sets the processing in motion. Secondly, there is an opaque material, which is spread between negative and positive, to shield the negative from all light during processing, while permitting the free flow of vital image-forming components from negative to positive. The positive picture builds up gradually in the transparent image receiving layer. The opaque material makes it possible to view the emergence of the image, even in the brightest daylight. On the completion of processing, the opaque material becomes clear. A third component is a small quantity of titanium dioxide, which provides an unusually brilliant white reflective backing for the color image after processing is complete.
The negative has three layers of light-sensitive silver halide grains. These layers are selectively sensitive, the top one being primarily sensitive to blue light, the center one to green and the lower one to red. Below each silver halide layer there is a layer of dye (in the form of a dye developer). The dye in each case has a color that is complementary to the color to which that specific layer is sensitive.

A "complementary" color is one which, when added to a "primary" (blue, green or red), makes up white light. Thus, the complementary of blue is red-green (which is yellow); that of green is blue-red (magenta); that of red is blue-green (cyan). The dyes in the negative, from top to bottom, are thus yellow, magenta and cyan.

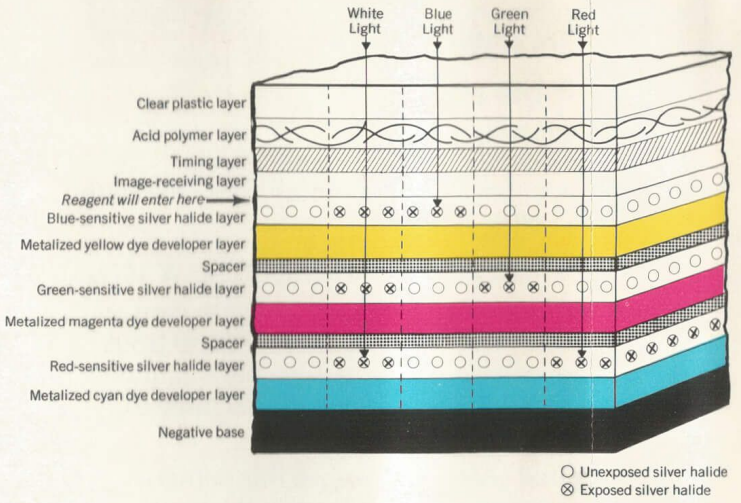
The silver halide does not become part of the positive picture image as it does in black and white diffusion transfer photography. Instead, it selectively controls the migration of dyes through development.

Those dye developers involved in development are trapped, and prevented from migrating to the positive sheet. The other dye developers, which have no developing job to do because their adjacent silver halides were not exposed, may migrate. The diagrams opposite show the process, and how the appropriate dyes combine in the positive receiving layer to re-create the colors of the original scene.

Both chemical and physical means are used to assure that the migrating dye developer components are able to act only on the exposed silver halide grains located in the layer directly above them, and not on those in any of the other light-sensitive layers. For example, the magenta dye developer must only be permitted to act upon the exposed silver halide grains within the green-sensitive layer, and nowhere else.

When development is complete the alkali will automatically be neutralized, and the dye developer migration will thus be halted. The positive picture will have been fully built up in the image receiving layer. The opaque layer, having served its purpose, will now have become transparent.

Deposited just below the picture image there will now be a layer of titanium dioxide pigment. It is white, highly reflective and opaque. It serves two purposes. First, it forms the reflective backing for the color image, contributing greatly to the unusual brilliance of the color pictures produced with this film. Secondly, it serves as a permanent curtain over the remains of the negative, which has completed its function and should not be seen any more.

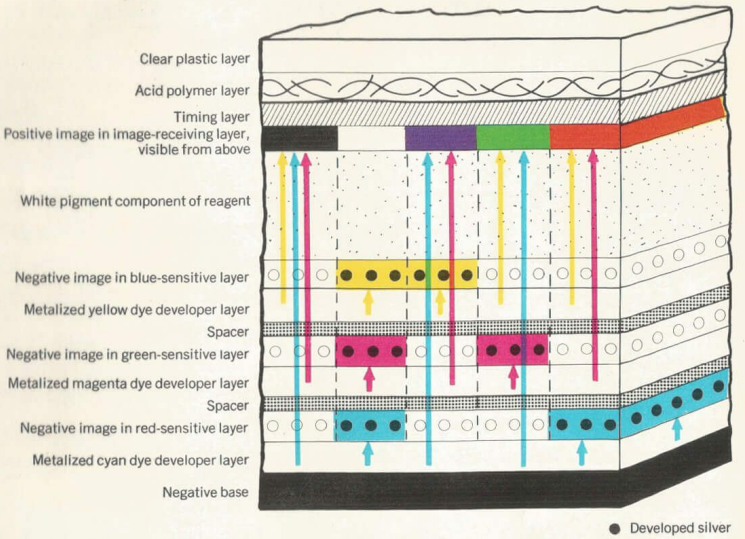


Exposing the SX-70 Negative

The color negative in the SX-70 film unit has three layers of light-sensitive silver halide grains. The top layer is sensitive primarily to blue light, the center layer to green and the lower layer to red. Below each silver halide layer there is a dye developer layer. The dye developer adjacent to the blue-sensitive silver halide layer is yellow, that next to the green-sensitive layer is magenta, and that next to the red-sensitive layer is cyan.

White light exposes all three of the silver halide layers. Blue light exposes only the blue-sensitive layer. At this stage, the yellow dye serves as a filter, preventing the blue light from continuing to the other layers. Green light exposes only the green-sensitive layer; the magenta dye prevents the green light from continuing to the red-sensitive layer. Red light exposes only the red-sensitive layer. Black, being an absence of light, exposes none of the layers.

Immediately after exposure, the film unit is driven through the rollers and emerges from the camera, the processing chemicals having been spread between the positive and negative.



Developing the SX-70 Print

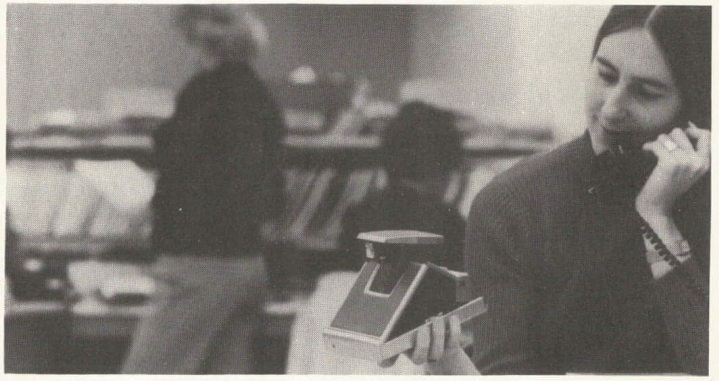
As soon as the alkaline reagent from the pod spreads between the negative and positive, it seeps through all layers, activating the dye developers. The developer molecules spread upward and, whenever they encounter the nearest exposed silver halide grain, they go to work on it, reducing it to metallic silver. In this process the dye developer becomes trapped. On the other hand, the dye developers that encounter only unexposed halides, which are not developable, continue their journey toward the positive sheet unhindered. Thus, blue light causes the yellow dye to be trapped in the blue-sensitive layer, while the magenta and cyan dyes are free to move on to the positive image-receiving layer. Their mixture re-creates the blue of the subject photographed. In the same manner, all over the picture area the three layers trap and release dyes selectively to re-create the colors of the original subject. When the alkaline reagent has penetrated the timing layer, it reaches the acid polymer layer, which causes the alkalinity to be neutralized. Development is thus halted. The white pigment component (titanium dioxide) remains just below the finished image, forming a highly reflective base for the color image and at the same time shielding the negative, which has completed its function and should not be seen any more.

YOU BOUGHT A POLAROID CAMERA

Our warranty and service policies stand behind it

The range and quality of the consumer services offered to its customers by Polaroid Corporation are unique in the photographic industry and, to the best of our knowledge, are unmatched in any other field.

The policies that have shaped our warranty, our Customer Service and our repair practices, have evolved during more than 20 years experience with many millions of Polaroid camera owners. Those policies are based on a simple principle: customers should be treated fairly – as fairly as we want to be treated when we are customers, ourselves.



Customer Service: as close as your phone

Our staff of skilled Customer Service representatives is ready to give you any information or assistance necessary to help you get good pictures. If you ever have a problem with your camera or film, we urge you to get in touch with Customer Service promptly. There are three ways to do this.

Call us, at no cost to you

You can reach us weekdays from 8:00 AM to 5:00 PM. From anywhere in the U.S.A. except Massachusetts, dial 800-225-1384, toll free; from Massachusetts and Canada, call collect, 617-864-4568.

Or, write a letter

The address is Customer Service, Polaroid Corporation, Cambridge, Mass. 02139. If you write about a picture taking problem, please enclose sample pictures and explain as clearly as possible the conditions in which the problem occurred. Be sure to include a clearly printed return address.

Or visit a Service Center

Bring your pictures with you. The Customer Service representatives there will be glad to discuss your pictures with you, provide information, and offer help with any picture taking problem.

This is Polaroid's no-nonsense warranty

Your camera was designed and built with care and skill. We expect that it will give you pleasure and trouble-free service for a long time. Because we have confidence in our products we offer the following warranty to you, as the original owner.

During the first year that you own this camera, if it proves to be defective we will repair it free of charge or, if we so choose, we will replace it, also without charge. Labor, service, and parts are all covered – no charges for any of them.

If your camera comes to us from within the U.S.A. we will, when we return the camera, refund an amount approximately equal to what it cost you to mail it to us by insured parcel post. It's an average amount – not figured to the exact penny. At the same time we will give you a pack of film to replace pictures spoiled before the defect was identified.

To take advantage of this warranty, the camera must be sent to and repaired by one of the Polaroid Service Centers listed on the opposite page.

If the camera suffered damage through an accident or misuse, or because someone tampered with it, the warranty does not cover such damage and the repair will be made at a reasonable charge.

Before you return a camera for repair, please telephone Customer Service and describe the problem.

Our after-warranty service is good, too

What happens after the warranty period? You will still get the same excellent Customer Service that we offer during the warranty period, and that includes the toll-free telephone calls, too. If your camera should be dam-

aged, or develop a malfunction, any of our eight Service Centers in the U.S.A. will provide expert repairs at reasonable prices and in a remarkably short time (see below). And there is a warranty on those repairs, too.

If you have to return a camera for repair

Every Polaroid Service Center offers walk-in service and many repairs can be made while you wait. If it is convenient for you to bring your camera to the Service Center, that is the fastest and best way to get it repaired. And while you are there you can also talk to our Customer Service representatives about any picture problems you may have. If it is inconvenient for you to visit our Service Center, you may either ask your Polaroid Land camera dealer to return the camera or you may mail it yourself.

Pack the camera carefully to assure that it will travel safely. If you're unsure about the container we will, at your request, send a pre-addressed approved shipping carton to any point in the U.S.A. Address your package to the nearest Polaroid Service Center and send it by *insured* parcel post.

Whichever method you select, be sure to include a note describing the problem as clearly as possible and, if you can, include sample pictures which illustrate it.

Polaroid Service Centers strive to provide the fastest possible service consistent with high quality workmanship. The goal is to repair and ship all cameras within three to five working days and only rarely is a camera in a Service Center longer than that. Depending on the distance and the mail service, customers can expect to have their cameras back in 10-14 days from the time they originally mailed them to Polaroid.

If you are taking your camera outside the U.S.A.

Try to anticipate your needs and take an adequate supply of SX-70 film and FlashBars with you. Or check before leaving with the nearest Polaroid Customer Service office (list at right) for places of supply in other countries.

Polaroid Service Centers and Offices

CALIFORNIA
Polaroid Corp.
875 Stanton Road
Burlingame 94010

Polaroid Corp.
2040 E. Maple Avenue
El Segundo 90245

GEORGIA
Polaroid Corp.
3720 Browns Mill Road, S.E.
Atlanta 30315

ILLINOIS
Polaroid Corp.
2020 Swift Drive
Oak Brook 60521

MASSACHUSETTS
Polaroid Corp.
89 Second Avenue
Waltham 02154

NEW JERSEY
Polaroid Corp.
P.O. Box 607
W-95 Century Road
Paramus 07652

OHIO
Polaroid Corp.
4640 Manufacturing Road
Cleveland 44135

TEXAS
Polaroid Corp.
9029 Governors Row
Dallas 75247

PUERTO RICO
Polaroid of Puerto Rico, Inc.
Charlyn Industrial Park
Road 190, Km 1.7
Carolina 00630

Mailing address:
P.O. Box 2032,
Ceramica Annex
Carolina 00630

AUSTRALIA
Polaroid Australia Pty. Ltd.
2 Smail Street
Ultimo, N.S.W. 2007

Mailing address:
P.O. Box 335
Broadway, N.S.W. 2007

AUSTRIA
Polaroid Ges.m.b.H.
Kegelgasse 27
A-1035 Wien 3

BELGIUM
Polaroid (Belgium) S.A.
12-16 rue de la Victoire
1060 Bruxelles

CANADA
Polaroid Corp. of
Canada, Ltd.
350 Carlingview Drive
Rexdale, Ontario M9W 5G6

DENMARK
Polaroid A/S
Blokken 38
DK-3460 Birkerød

FRANCE
Polaroid (France) S.A.

Office:
57, rue de Villiers
92202 Neuilly

Service Center:
1, rue Ambroise Croizat
Zone Industrielle
95100 Argenteuil

GERMANY
Polaroid GmbH
Konigslacher Strasse 15-21
6 Frankfurt am Main 73

GREAT BRITAIN
Polaroid (U.K.) Ltd.
Ashley Road
St. Albans
Hertfordshire

ITALY
Polaroid (Italia) S.p.A.
Viale Certosa 222
20156 Milano

JAPAN
Nippon Polaroid
Kabushiki Kaisha
Mori Bldg. No. 6
32, Nishikubo Tomoe-cho
Shiba, Minato-ku
Tokyo

MEXICO
Michelmex S.A.*
Apartado Postal #6-952
Mexico 6 D.F.

THE NETHERLANDS
Polaroid (Europa) B.V.
Verkoopkantoor Nederland

Office, Maassluisstraat 258
P.O. Box 9167
Amsterdam-W. 111

Service Center:
Markt 24
Enschede

NORWAY
Polaroid (Norge) A/S
Hvamkrysset
Boks 35
2007 Kjeller

SOUTH AFRICA
Frank & Hirsch (Pty.) Ltd.*
P.O. Box 1803
Bree and Nugget Streets
Johannesburg

SWEDEN
Polaroid AB
Bredholmsgatan 10
Box 20
S-127 21 Skarholmen

SWITZERLAND
Polaroid A.G.
Hardturmstrasse 175
Zurich 8037

*Authorized Independent Repair Station

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