How to make good pictures with your

POLAROID PATHFINDER LAND CAMERA



PLEASE

Spend a few minutes reading this booklet before you take your first picture.

Because the Polaroid Land Camera is the only camera in the world that takes and develops its own pictures, it is unlike any other camera you have ever owned. We urge you to read these instructions carefully — not because the camera is difficult to use, but because it is different.

This brief instruction book (containing plenty of pictures) has been designed to acquaint you with the unique Polaroid Land Camera and to be kept as a handy guide.

A few minutes now with this booklet, practicing the operation of the camera, will help you take perfect pictures on your first roll.

Know the Camera	3
Opening and Closing	3
Setting for Exposure	4
Focusing and Aiming	5
The Shutter Release	5
Loading the Camera	6
Taking the Picture	9
Developing the Picture	9
Coating the Print	11
More About Exposure	12
Using the f/90 Aperture	14
Taking Indoor Pictures	15
Making Time Exposures	16
Using the Self-Timer	16
Selecting the Film	17
Correcting Pictures	18
Care of the Camera	20
Print Care	20
Copies and Enlargements	20

KNOW THE CAMERA

Get acquainted with the camera without any film in it. First, try opening and closing the camera a few times.

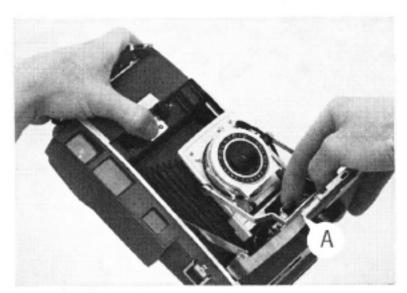
Opening the Camera

The knob on the front cover is the focusing knob. Do not try to turn it until the camera is fully open.

To open, just press the cover catch and the cover will pop up. Open the cover fully until the braces click and lock the cover rigidly.

Hook your fingertip over the metal bracket (A) directly beneath the shutter and pull the shutter slide all the way out until it locks firmly in place. Pictures will be blurred if the slide is not fully extended and locked.

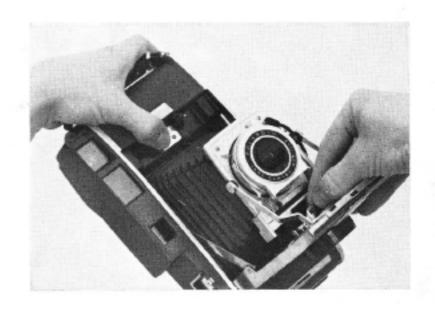




Closing the Camera

Always turn the focusing knob so that the scale in the bed of the cover is set to infinity before closing the cover.

Press the slide release (the black center piece on the metal bracket) and push the shutter slide all the way back.



To close the cover, hold as shown, press the side braces with both thumbs and squeeze the camera cover shut.



Setting for Exposure

Flip down the Lens Cap (Λ) by the half-moon cutout on the left side of the rim. If you're a camera neophyte and at first glance the controls appear complicated, remember that you need master only the three simple steps below to get good pictures. A more detailed discussion of exposure setting is given on pages 12 and 13.

For most pictures you can just concentrate on the EV pointer (B), which changes when the aperture control (C) and the shutter speed ring (D) are moved. EV, by the way, means Exposure Value, and is discussed more fully on page 12.

Three Basic Steps for Setting Exposure

In making your "dry run", let's assume you are outdoors and the camera is loaded with 3000 speed film. To set exposure, here is what you do:

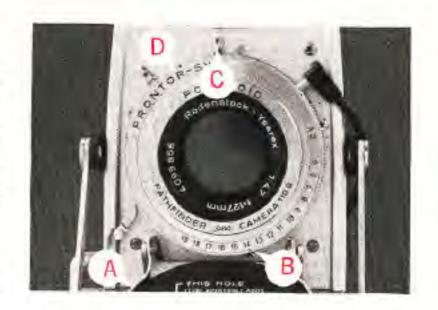
- Set the red notch on the shutter speed ring opposite the 1/125 setting. (In low light levels, or with low speed films, use lower shutter speeds.)
- 2. Point your Polaroid Model 625 Exposure Meter at your subject and read the EV number for the scene. If you do not have the meter, you will find the proper EV number in the Picture Tips packed with each roll of film.
- Move the aperture control (C) until the EV pointer (B) is opposite the number you read on the meter or Picture Tips.

Using the Full Range of EV Numbers

When your shutter speed is set at 1/125, the range of EV numbers is from 11½ to 18. In certain situations, higher or lower EV numbers will be called for.

Lower EV numbers are required on dull days outdoors, on indoor pictures at night, made with the wink-light, and on pictures made indoors by light through windows. By using lower shutter speeds, you can set the camera to lower EV numbers. For example, at 1/30, the range of EV settings extends from EV 8½ to 16.

Numbers higher than 18 are required only in very bright scenes, when 3000 speed film is used. For these, use the Lens Cap aperture as described on page 14.





1. Set Shutter Speed



2. Read EV Number On Meter





Focusing and Aiming

Your Model 110B has a coupled rangefinder-viewfinder system. By looking through a single window, and turning the focusing knob, you center your subject and focus at the same time on any subject from 3 feet to infinity.

Hold the camera as shown and look through the window in the back of the camera. You will see a triangular yellow spot, and a rectangle of broken yellow lines. The triangular spot is your focusing guide, and the rectangular broken lines are the viewfinding guide.

Focusing: Try aiming the camera at a person, centering the yellow spot on the nose or eyes. You will see a double image within the yellow spot. Turn the focusing knob until the two images blend into one sharp image. When they coincide exactly, the camera will be in focus.

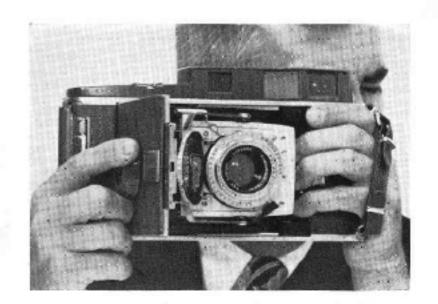
Aiming: When you turn the focusing knob, note that the viewfinder field defined by the yellow lines becomes larger or smaller, and shifts position slightly. The closer the subject, the less area there will be inside the lines.

The viewfinder optical system automatically corrects for parallax and field size when you focus the camera. This means the area within the yellow lines will always show exactly what will appear in the finished print. You should always frame your subject within these lines.

The Shutter Release

The Pathfinder shutter must be cocked before a picture can be taken. With the camera facing you, push the cocking lever (A) as far to your left as it will go. The shutter is now cocked.

Hold the camera firmly against your face (just as you did above when focusing), and press gently on the shutter release (B). A light pressure is all that is needed to release the shutter. Don't punch it — use a steady squeezing pressure to avoid camera motion. Practice cocking and releasing the shutter several times — it will pay dividends in sharp pictures.

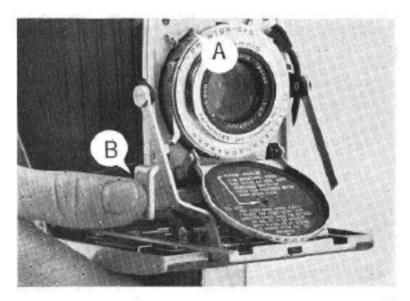




Not In Focus



In Focus And Centered



LOADING THE CAMERA

Avoid opening the film or loading the camera in direct sunlight, because you may fog the film. Find some shade, or if none is available, turn your back to the sun and shield the film with your body.

When you remove the film from the box, save the print coater and printed Picture Tips which come with it. (The Picture Tips contain up-to-date information about the film and an order blank for copies and enlargements.)



To prepare the camera for loading, hold it as shown and swing the latch lever down. The back will open slightly.



Set the camera down on a flat surface, then lift open the back cover and lay it flat.

Lift up the inner panel and lay it flat. This is the position in which the camera is loaded.



Before loading, examine the rollers (arrows). The two steel rollers are the heart of 60-second photography. The picture roll papers will pass between these rollers, which squeeze the developer reagent evenly between the positive and negative sheets.

It is important to keep these rollers clean. Use a damp cloth to remove any specks or deposits that may appear on the rollers as the camera is used.

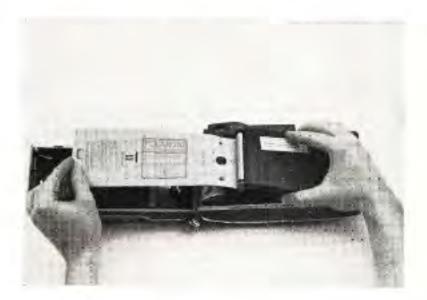


Remove the film carefully from its foil wrapper. The film actually contains two rolls: a large white (positive) roll and a spooled (negative) roll. When you unwrap the film, be careful not to break the Scotch Brand Tape seals on the top of the spooled roll and the underside of the large roll (arrows).

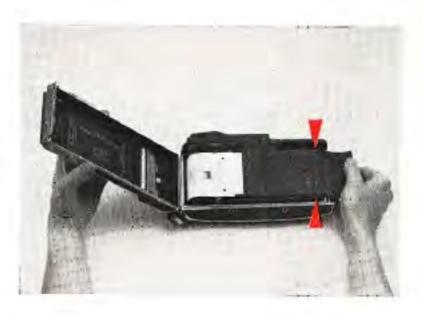
Drop the rolls into the wells on either side of the bellows, as shown.



Now close the inner panel, folding the film leader over the steel roller on the edge of the inner panel.



Lay the leader flat between the guides (arrows) at the outer edge of the panel. Be sure the white paper lies smooth and flat, not tucked into the well.

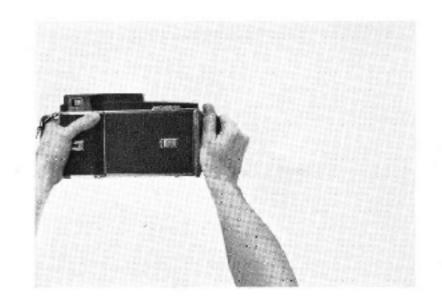


Then close the back cover, squeeze it tightly shut, and swing the latch all the way to the left to engage the prongs, then all the way to the right to lock. There will be a short tab of black paper extending beyond the cutter bar.

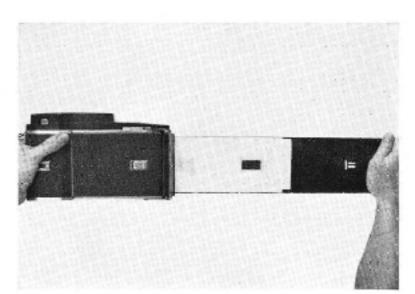


Important: Hold the camera as shown, the left hand under the strap, gripping the top of the camera securely. If you hold the camera in any other way, you are apt to pull the tab out at an angle, which can cause it to mistrack and tear.

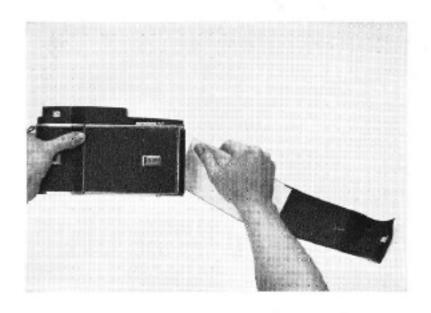
With your right hand, lift the cutter bar by its plastic edge and grip the tab firmly.



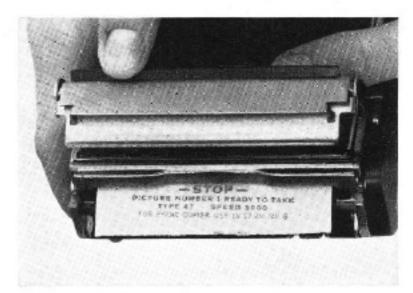
Pull the tab straight out until it comes to a firm stop. Don't be surprised if you seem to be pulling out a lot of paper on this first pull. You must pull out the entire leader (about 15 inches) before the film stops, but it will stop automatically.



Close the cutter bar by pressing it all the way down. It will latch closed, and you can now tear off and discard the excess paper. (Naturally, you will discard it carefully — don't be a litterbug!)



The camera is now ready for the first picture. You can always tell what picture is ready to be taken by lifting the cutter bar and looking at the tab beneath it.



TAKING THE PICTURE

Now that the camera is loaded you are ready to take your first picture. Note that the following simple steps are also summarized on the back door card of your camera:

Set Exposure: As described on page 4, set the shutter speed you want. Find the correct EV number on your meter or in the Picture Tips. Set this same EV number on the camera. Then cock the shutter as shown at right.

Focus the Camera: Center the triangular yellow spot on the most important part of the picture and turn the knob until the two images blend into one sharp image (see page 5).

Take the Picture: Hold the camera firmly against your cheek as shown for vertical or horizontal pictures. Center your subject within the broken yellow lines and squeeze the shutter release slowly. (Remember, don't punch it—you will jar the camera and get a blurred picture.)

You have now taken the picture. It will not start developing until you pull the tab. (Some people have been known to snap the picture, wait a minute, then pull the tab and immediately remove the print — a very faint underdeveloped one.)





Hold This Way For Vertical Pictures



Horizontal Pictures

DEVELOPING THE PICTURE

Hold the camera with the left hand under the strap. It is important to hold it this way to assure correct advance of the film.

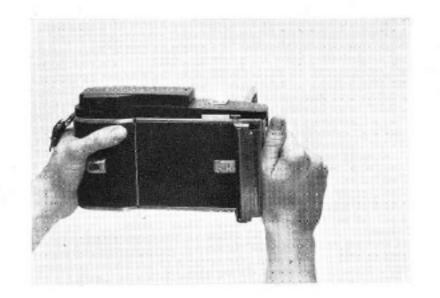
Throw the red switch (arrow) in either direction to release the film. (If you should throw the switch accidentally at any time, don't worry — no harm is done.)



Pulling the Tab

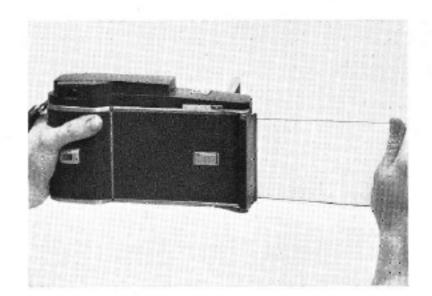
Shield the camera from direct sunlight when you pull the tab.

Open the cutter bar by lifting the plastic edge and take a firm grip on the paper tab. You'll find the best grip to use is along the length of the forefinger and thumb, as shown.

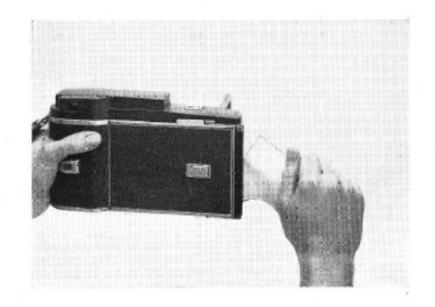


Pull the tab straight out with a single motion. Pull it about as hard and rapidly as you might pull down a window shade; not hard enough to pull the shade off the roll (or the film off the spool), but not slowly and hesitantly either. Remember, the film will stop automatically.

Note: If the tab will not pull easily, throw the red switch again.

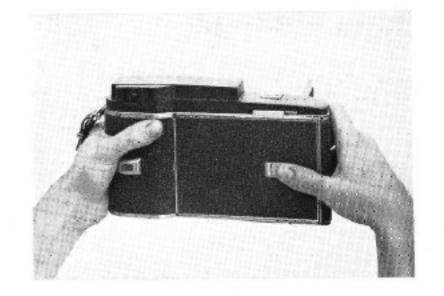


After you pull the tab, press down to latch the cutter bar, and tear off and discard the excess paper.

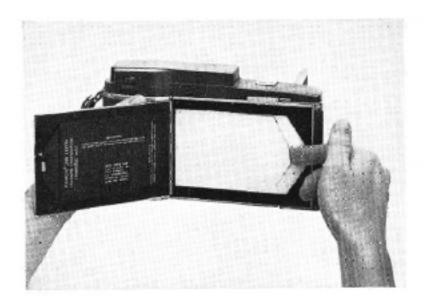


WAIT RECOMMENDED DEVELOPMENT TIME

Pulling the tab has started the developing process — and advanced the film into position for the next picture. Follow the instructions in the Picture Tips for development times under various conditions. When the development time is up, slide back the latch on the print door and open the door.



Lift the print out carefully, starting with the cutout. Don't let the print fall back on the damp negative. Then close and **relatch** the print door.



COATING THE PRINT

Coat each print as soon after removal from the camera as possible. If you coat your print properly, it will last as long as any fine print. First remove the curl by drawing the print face up over a straight edge, such as the camera edge, as shown.



Apply the print coater along the entire length of the print, including edges, borders and corners, with 6 or 8 firm overlapping strokes. For the last two or three pictures in each roll, press the coater hard against the tab end of the print (not the image) for a moment to release extra liquid, then spread the liquid smoothly across the print.

Note: If a clean, flat coating surface is not available, flatten the film box and store the prints within it until you get home. If you have the Model 310 Polaroid Deluxe Fitted Case, use the built-in coating platform to coat prints on the spot.



MORE ABOUT EXPOSURE

Simplified instructions for setting shutter and lens are given on page 4. Here are further suggestions which will help you explore the full range of the camera.

Start with the EV (Exposure Value) Number: No matter what shutter-lens combination you finally select for a given picture, there is **one** EV number which is best for that scene.

This EV number represents the exact amount of light which must pass through the camera lens to produce a picture that is neither too light nor too dark.

This amount of light is governed by the size of the lens opening (aperture) and the length of time the shutter remains open (shutter speed).

A short exposure through a large lens opening will pass as much light as a long exposure through a small lens opening. For example, if the meter reads EV 12, you can set the shutter at any setting from 1/2 second to 1/125 and still have the EV pointer point to "12".

Before discussing how to choose the best shutter-lens combination, let's look at the shutter and lens settings available.

Aperture: You have a choice of 8 apertures. F/4.7 is the largest opening and f/45 is the smallest. (The lens cap provides a ninth, and even smaller aperture, f/90, as described on page 14.)

In general, you will want to use as small an aperture as possible in any given situation, providing the shutter speed is fast enough to eliminate camera motion. The smaller the aperture, the greater is your depth-of-field (sharpness of focus from foreground to background).

Shutter Speed: You have a choice of 9 shutter speeds. You will prefer to use shutter speeds of 1/60 second or faster whenever possible to reduce the chance of subject motion or camera movement blurring the picture.

The 1 second, 1/2, 1/4, and 1/8 settings are used primarily for very low light levels calling for EV 5 to 8 (and may also be used in conjunction with the f/90 aperture). The camera should not be handheld at these speeds.



Setting Aperture

Setting Shutter Speed



Choosing Between Fast Shutter Speed and Maximum Depth-of-Field: For a given EV setting, the faster the shutter speed you use, the smaller will be the depth-of-field, and hence the more critical the focusing requirements (see table below). This is because the faster shutter speeds must be offset by larger lens openings. The larger the lens opening, the less the depth-of-field.

The nature of the picture you wish to take will govern whether to set for fast shutter speed or maximum depth-of-field. This is demonstrated by the two pictures at right. In the water-skiing picture, stopping action is the main concern; in the other, you wish to get everything in focus.

EV Interlock: The shutter provides a convenient locking lever that ties shutter and lens controls together for any particular EV number. Here's how to use it: set the EV pointer to the number indicated by the meter. Then push in on the locking lever (A) and move it upward to the solid black circle. Aperture and shutter are now locked together.

You can now turn the shutter speed control ring as far as it will go in either direction and still preserve the same EV setting. This will help you choose between faster shutter speeds and smaller apertures for any given EV number. Release the lock to reset to another EV number.

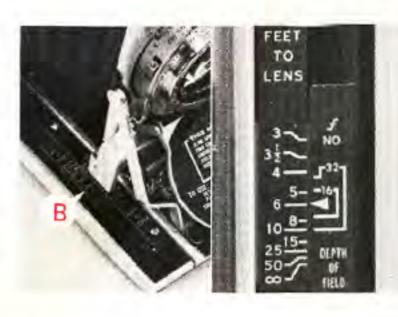
Gauging Depth-of-Field: When you have focused your camera, the arrow on the focusing scale in the camera bed (B) will point to the distance from lens to subject. The guides on either side of the arrow indicate depth-of-field at apertures of f/16 and f/32. For example, with the camera focused at 6 feet with an aperture of f/32, the depth-of-field is from 4½ to 10 feet from the lens.



Use Fast Shutter Speed

Use Small Aperture





Distance Focused on	f.	174.7		f/5.6 f/8		1	1/90*				
3 ft 3½ ft 4 ft 5 ft 6 ft	2'11¼" 3'5" 3'11" 4'10" 5'10"	to 3 to 3 to 4 to 5 to 6	'2" '2"	2/11" 3/4" 3/10" 4/9" 5/6"	to 3 to 3 to 4 to 5 to 6	3'7" V2" 5'4"	2'10'4" 3'3\2" 3'10" 4'8" 5'6"	to 4/4	3'136" 3'842" 5'6" 6'8"	18" 19" 20" 22" 24"	to 30' to 50' to inf. to inf. to inf.
8 ft 10 ft 15 ft 25 ft 50 ft INF.	7'6" 9'1" 13'2" 20' 33' 93'	to 8	77" 1' 7'10" 34'	2'4" 9' 12'7" 19' 30' 74'	to 8	3/11" 11'7" 18'6" 37' 160'	7'1" 8'7" 12' 17' 26' 52'	to to to	9'4" 12'4" 21' 47'	26" 27" 29" 31" 33" 35"	to inf.

USING THE f/90 APERTURE

The lens cap on your camera has a tiny hole which serves as a very small (f/90) aperture for use with 3000 speed film in bright sunshine. This small aperture does two things:

- (1) It allows you to take outdoor pictures with 3000 speed film without using a filter. It also adds two more EV numbers (20 and 21) to the normal range of the camera.
- (2) It provides a tremendous range of sharpness from foreground to background in your pictures (as shown at right). Focusing is unnecessary, although you'll be doing it automatically anyway in order to frame your picture exactly.

You can take extreme close-ups with the lens cap without auxiliary lenses. Set the focus scale to 3 feet, and make portraits as close as 18" away in bright light. Do note, however, that the viewfinder frame does not correct its aiming angle closer than 3 feet, which means that you'll have to have your subject center himself in the lens.

The f/90 aperture can be used when exposures of EV 17 or higher are required, with 3000 speed film. Simply set the camera lens aperture control wide open (f/4.7) and close the lens cap over the lens.

Exposure is set by turning the shutter speed control ring to line up the red indicator mark on the ring with the EV number (17 through 21) engraved on the edge of the lens cap. At EV 21, the shutter speed will be 1/300; at EV 17, speed is 1/15—the slowest speed you should use for hand-held pictures.

However, if you use a tripod or rest the camera on some support (see page 16), you can use even lower shutter speeds with the lens cap (to achieve maximum depth-of-field).

Note: Be sure the EV Interlock is disengaged when using the lens cap. You do not use the numbers on the camera lens EV ring when using the lens cap.





		The second second	O Speed Polaroid Land Pi	THE REST CALCULA	
		Bright	Hazy Soft Shadows	Cloudy No Shadows	Dull
AVERAGE:	People, pets	20 or 19	18	17	16
BRIGHT:	Beach, snow	21	20 or 19	18	17
DARK:	Shady-spots	18	17	16	15

TAKING INDOOR PICTURES

At least half the fun of owning a Polaroid Land Camera is in taking indoor pictures of family and friends. The Model 110B, when used with 3000 speed film, makes possible a wide variety of indoor pictures. They are as easy to take as snapping pictures in sunshine. You can take fine day-time pictures by just the light from a window (like the picture of the boy blowing bubbles). Use the Model 625 Meter or the Picture Tips for exposure settings.

Wink-light Pictures: The repeating wink-light is the key to taking consistently good indoor pictures without flashbulbs. Its gentle wink of light erases shadows left by ordinary room lighting, as shown by the two pictures of the girl. You may have obtained the Model 250 wink-light with your Pathfinder Camera. Spend a few minutes reading the excellent instruction booklet included with it. Set the synchronization lever (A) at "M" when using the wink-light. The "X" setting is for electronic flash and the "V" setting is for the 10-second self-timer (page 16).

If you do not have the wink-light, you may wish to experiment in taking 3000 speed film pictures with available light. You are apt to get strong shadows in your picture from the uneven room lighting, as in the picture of the little girl taken without the wink-light. Use the film as a sort of exposure meter, by taking test pictures and then correcting errors in exposure on succeeding pictures. Or use the special 3000 speed tungsten guide mark on the Model 625 Meter. The Pathfinder's big lens and slow shutter speeds allow you to take unusual pictures in extremely dim light.

Auxiliary Flasher: The auxiliary flasher, which comes with the wink-light, lets you use tiny AG-1 flashbulbs in situations where room lighting is so dim, or distance to the subject so great, that the wink-light can't fill the lighting needs itself. Also, this flasher will let you take flash pictures indoors with Type 42 (200 speed) film.

Electronic Flash: Set the flash synchronization lever to "X". Then detach the synchronization cord (B) and attach the cord from your electronic flash unit.







Without The Wink-light

With The Wink-light



MAKING TIME EXPOSURES

For any time exposure (or at shutter speeds of 1/8 or slower), the camera must be held rigidly. If you do not have a tripod, pull out the folding support on the front cover and stand the camera on a flat surface.

When the shutter speed ring is set at "B" (for "Bulb," a holdover from the days when photographers squeezed a rubber bulb to open and close the shutter), the shutter will stay open as long as the shutter release is held down.

Exposures must be arrived at by trial and error. If the picture is too dark, increase exposure time; if too light, decrease exposure time.

Whether you use a tripod or a table for firm support, a cable release should also be used to eliminate any camera motion. Attach the cable release at (A) in the picture at bottom. For vertical mounting of the camera on a tripod, the Model 261 tripod adaptor is available.

Time exposures should be used for pictures where light is too dim for snapshots, and where the wink-light or flasher is impractical or not available (long-distance outdoor scenes at night, as in the skyline scene, for instance).

Use the f/90 aperture with time exposure or shutter speeds of 1/8 or less when maximum depth-of-field is required at low light levels. The picture at right was taken with the f/90 aperture and a shutter speed of 1 second (EV 13). When settings of EV 12 or less are called for, use time exposures as directed above.





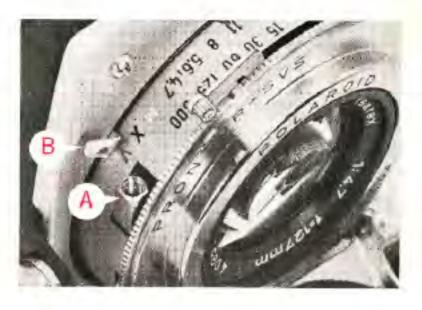


USING THE SELF-TIMER

Your shutter has a built-in 10-second delay timer which lets you get into the picture yourself after you have tripped the shutter release.

To use it, cock the shutter, move the flash synchronization lever (B) to "V", then press the shutter release. The shutter will buzz for about 10 seconds, then trip.

Note: If you use the wink-light or auxiliary flasher with the self-timer, set the shutter speed to 1/15 rather than 1/30.



SELECTING THE FILM

At present, you will probably use two types of film in your Pathfinder Land Camera; the Type 47 Polaroid 3000 Speed Land Picture Roll, or the Type 42 Polaroid PolaPan 200 Land Picture Roll.

The Pathfinder, with its versatile lens, is the perfect camera for Type 47, the high speed film. When you use 3000 speed film in bright sunshine you will be able to use a fast shutter speed (to stop fast action such as a baseball game) in combination with a small lens opening (for extreme depth-of-field).

The Pathfinder not only gives greater range in bright sunlight; it can also be used at much lower light levels than any other Polaroid Land Camera model.

The lowest EV number you can use with other Land Camera models is EV 10. You can use the Pathfinder to take "hand-held" pictures at settings as low as EV 8. That means you can take pictures with one-fourth as much light as you need for the other camera models. When working with a tripod, you can take pictures at light levels as low as EV 6.

Thus, with the Pathfinder, you will be taking many unusual and dramatic pictures by firelight or candlelight, such as the picture of the little boy at right.

When used with the Model 250 winklight (see page 15) 3000 speed film gives the Pathfinder almost unlimited range indoors. With this combination you will be able to take perfect night-time pictures virtually anywhere in your home without flashbulbs.

Type 42 is an all-purpose film with an ASA equivalent daylight speed of 200. It is somewhat lower in price than 3000 speed film, and produces pictures just as sharp and clear, outdoors and indoors. When used indoors at night, it requires the use of flashbulbs.

In every Polaroid Land Picture Roll box, you will also find the Print Coater and the Picture Tips, Save them both. The Print Coater is essential for preserving your pictures (see page 11). The Picture Tips, to which we have referred throughout this book, always has the latest information about the film, both as to exposure and development. It also contains a handy form for ordering copies and enlargements (see page 20).









CORRECTING PICTURES

Here is how to spot some common errors and how to correct them:

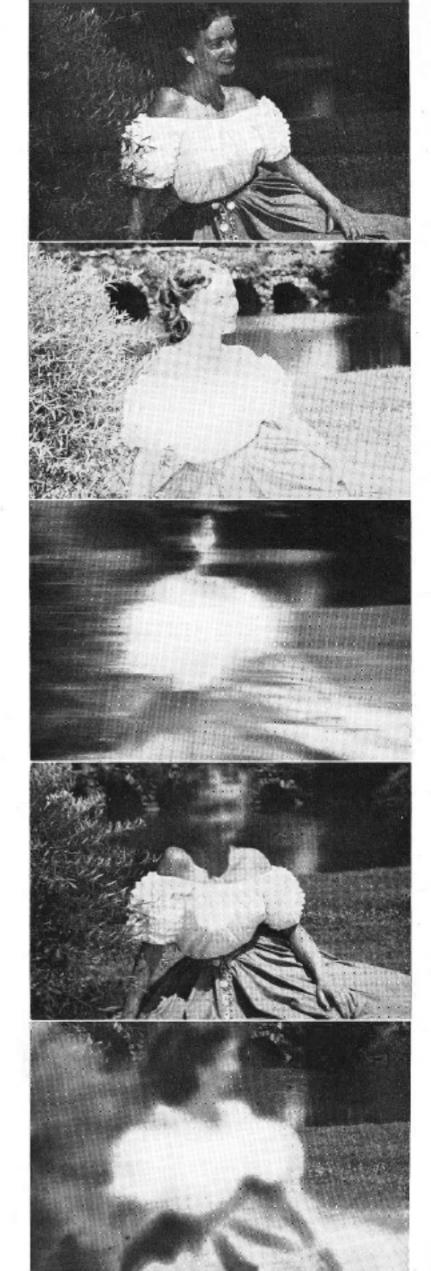
Too Dark: The picture is underexposed. Set the camera to a lower EV number or a slower shutter speed.

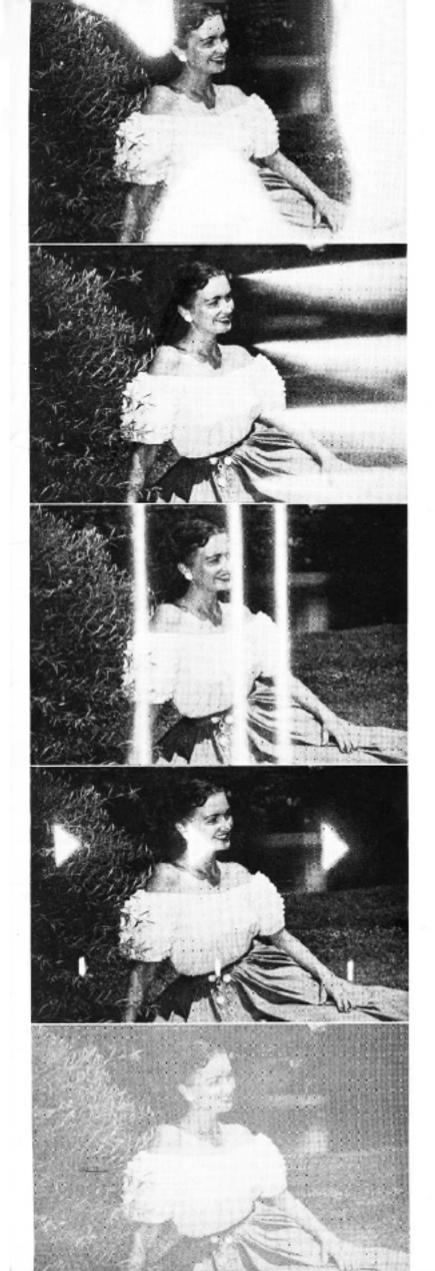
Too Light: The picture is overexposed. Set the camera to a higher EV number or a faster shutter speed.

Everything Blurred: The camera moved. Be sure to hold the camera securely, and do not punch the shutter release — squeeze it slowly. Try holding your breath when you press the shutter release.

Subject Blurred: The subject moved as the picture was taken.

Subject Fuzzy: When another part of the picture is sharp while the subject is fuzzy, the camera is out of focus. Be sure the two images in the rangefinder guide (yellow spot) coincide exactly. Be sure bellows are pulled all the way out and locked.





White Areas: Light struck the negative roll during loading. Do not load in direct sunlight. Do not break the seals on the positive and negative rolls when loading.

Streaks at Print Edge: The tab slot was not shielded from the sun while the tab was being pulled. When taking pictures outdoors, turn your back to the sun when you pull the tab, so that your shadow covers the camera.

Streaks Across Print: The tab was pulled unevenly. Do not stop or hesitate while pulling the tab. Pull the tab fairly rapidly until the film stops automatically.

Spots on Print: Evenly-spaced spots on the picture are caused by foreign matter adhering to the steel rollers. Keep the rollers clean (see page 20).

Dull or Faint Picture: The picture is underdeveloped. Check the Picture Tips for developing times under various conditions.

CARE OF THE CAMERA

Rollers: The two steel rollers must be kept clean and free of foreign matter which can cause evenly spaced spots along the length of the picture. Before loading each roll, turn the rollers slowly and remove foreign deposits with your fingernail or a moistened cloth.

Plates: Foreign matter may also collect on the black interior plates. Clean them carefully with a damp cloth.

Shutter: Do not leave the shutter cocked when camera is not in use. Do not leave the shutter set at 1/300 even when not cocked. The shutter is lifetime lubricated; do not oil or attempt to adjust the shutter.

Keep the lens clean: First blow off loose lint or dust particles, then polish gently with lens tissue or a soft, lint-free cloth. Always leave the lens cap closed over the lens when not taking pictures.

PRINT CARE

The Print Conter waves a kard plastic coating on your paint. If you and or crease your pictures, it write on the back of the print, you can crack this coating, which can lead to discoloration along the cracks. Use the tab or back edges for notes.

As with any photograph, it is wise not to use paste or rabber cement to mount your pictures. Impurities in many adhesives may cause the letters to diccolor. Polaroid Land prints may be safely stored in a Polaroid Picture of burn, or in albums which have separate an parent acetate pages.

COPIES AND ENLARGEMENTS

You can make excellent on-the-spot copies of your Land prints (and often improve on them) with the Model 2401 Polaroid Print Copier. Or you can get quick, inexpensive copies and enlargements from Polaroid Corporation. See the Picture Tips for copy order blanks and further details.

