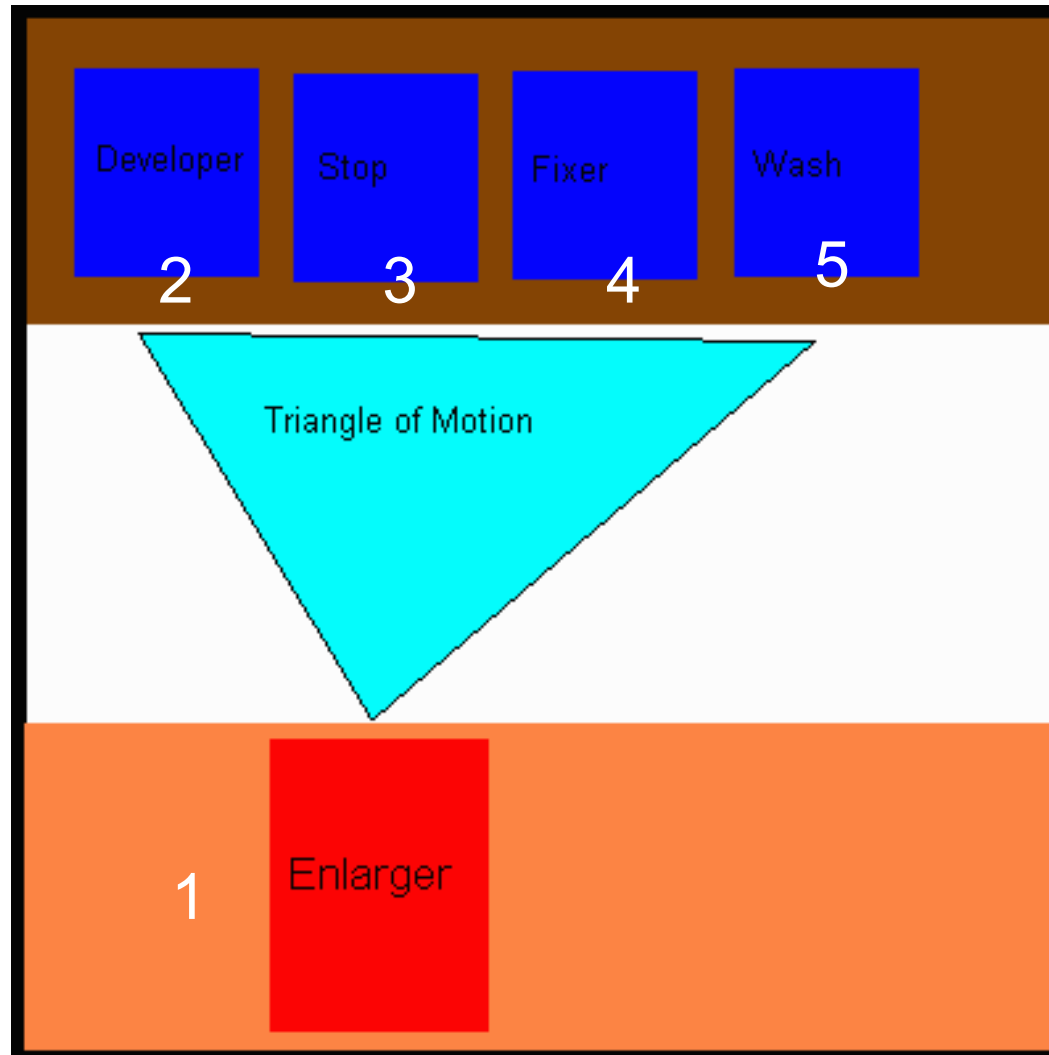


# **The Silver Gelatin Photographic Print**

How to create a properly exposed,  
in focus, properly developed and  
fixed photographic print from a  
black and white negative

By Marcine Linder

# Darkroom Triangle of Motion



Describe what happens in each of the five steps

# The Contact Sheet



Contact sheets allow the photographer to view all the images on a roll and compare them side by side to decide which ones to make enlargements of based on focus, exposure, and aesthetics.

Contact print images are exactly the same size as the negatives from the original film.

## Step 1 (for both contact prints and enlargements)

### 1 | set out trays and tongs



*Four trays are needed—one each for developer, stop bath, and fixer plus one filled with water to hold prints after fixing until they are ready for washing. If you use tongs, you will need two pairs:*

*one for the developer and one for stop bath and fixer. Do not interchange them. See page 171 for information about chemicals.*

## Steps 2 & 3 (for both contact prints and enlargements)

### 2 | prepare the solutions



*Solution temperatures are not as critical as in film development. Manufacturers often recommend about 68° F (20° C) for the developer, 65° to 75° F (18° to 24° C) for stop bath and fixer.*

### 3 | assemble the negatives



*Collect the negatives to be printed. If you have used care in handling and storing them, they will be free of fingerprints and mostly free of dust.*

## Steps 4, 5, 6

### 4 | dust the negatives



*Remove any dust from negatives with an antistatic brush or compressed air. There should be no fingerprints, but remove them if necessary with film cleaner.*

### 5 | identify the emulsion side



*Film curls toward the emulsion, which has a duller sheen than the film base. The emulsion side must face the paper during printing.*

### 6 | clean the contact frame



*Clean the printing-frame glass with water or cleaner sold for this purpose. A plain sheet of glass can be used if a printing frame is not available. Use the eraser for safety.*

Dust will leave ugly white specs on your photos

The emulsion side must always face the paper when printing - it's the convex side of the curved film

**7 | prepare to insert negatives**



*Open the cover of the contact frame all the way, taking care to keep your fingers from leaving marks on the glass; they may show on the print. Make sure no dampness remains from cleaning.*

**8 | place the negatives in the frame**



*In this printing frame, strips of negatives snap under clips on the glass cover. Face the emulsion side away from the glass, toward the paper.*

**9 | position the enlarger head**



*Switch on the enlarger lamp and raise the enlarger head until the light that is projected covers the entire contact frame. Switch the lamp off.*

Steps 7, 8, 9,

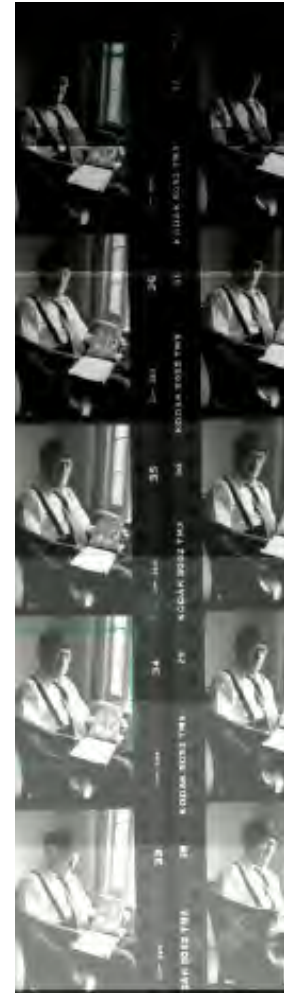
## The Test Print



full sized contact print  
test print

There is no such thing as a light meter for determining exposure in the darkroom. Test strips are made instead

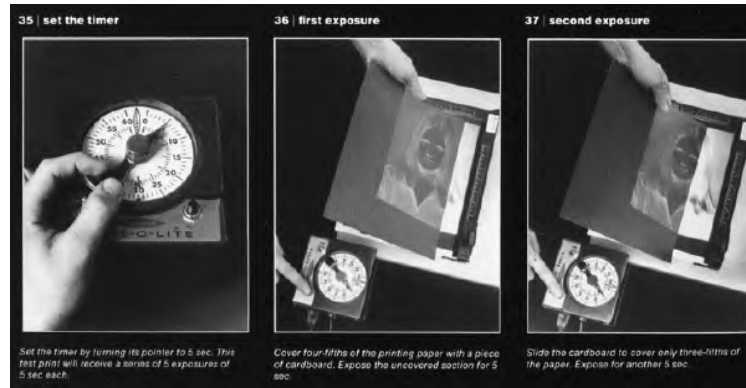
Use an opaque card or paper to block the light for all but a strip of the paper for five seconds. (see pic on next slide) Move the card over to expose another strip of the paper (in addition to the original strip) for five seconds. Repeat until the entire paper has been exposed this way (the last strip will only get five seconds' exposure)



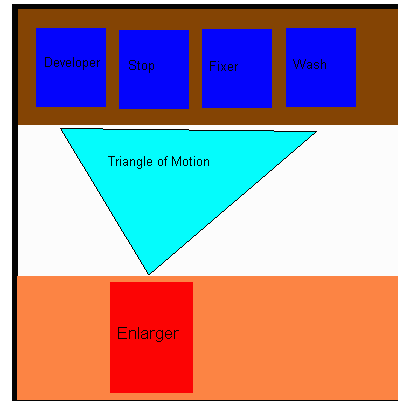
test strip  
saves paper!!!



1) do a test strip exposure to figure out what exposure time and aperture you need



2) process the strip in the developer, stop, and fixer



3) examine your test strip in the light and choose the best exposure

4) expose the entire paper using the best exposure to create a contact print, process in dev., stop, fix



# **Creating a Black and White “silver gelatin print”**

Learning Goals:


What are the steps I need to take to create a silver gelatin black and white print using tray processing?

## Steps 1 and 2

**22 | select a negative for printing**


*Personal judgments count* the most when selecting negatives for enlargement when you have many shots of the same scene. Which had the most pleasing light? Which captured the action most dramatically? Which expressions were the most natural or most revealing? Which is the best picture overall?

**Technical points** should be considered as well. For example, is the negative sharp? With a magnifying glass examine all parts of the contact prints of similar negatives to check for blurring caused by poor focusing or by movement of the camera or subject. If the negative is small—particularly if it is 35mm—even seemingly slight blurring in the contact print will be quite noticeable in an 8 × 10-inch enlargement because the defects will be enlarged as well. Extreme underexposure (shown on the contact as pictures that are very dark) or extreme overexposure (pictures that are very light) will make the negative difficult or even impossible to print successfully. Minor exposure faults, however, can be remedied during enlargement. Use a light-colored grease pencil to mark the contact sheet as a rough guide for cropping.



*Under bright light, examine the processed contact sheet with a magnifying glass to determine which negative you want to enlarge.*

**23 | extract the negative carrier**



*Lift up the lamp housing of the enlarger and remove the negative carrier—usually two sheets of metal that hold the negative between them.*

Choose the negative that has the best  
a) exposure b) composition c) focus

Extract the negative carrier  
From the enlarger (we will do a  
demo in class)

## Steps 3 to 5

**24 | Insert the negative**



*Place the negative over the window in the carrier and center it. The emulsion side must face down when the carrier is put in the enlarger.*

**25 | clean the negative**



*Before printing, hold the negative at an angle under the enlarger lens with the lamp on so that the bright light reveals any dust; brush it off. Dust*

**26 | replace the negative carrier**



*Tilt the lamp housing and place the negative carrier in position. Switch off room lights so that you can see the image clearly for focusing.*

Insert the negative into the negative carrier

Clean the negative (remove dust, hair etc.) using a static free brush or compressed air

Insert the negative carrier in the enlarger. After this step, the darkroom must be dark except for safelights

## Steps 6 to 8

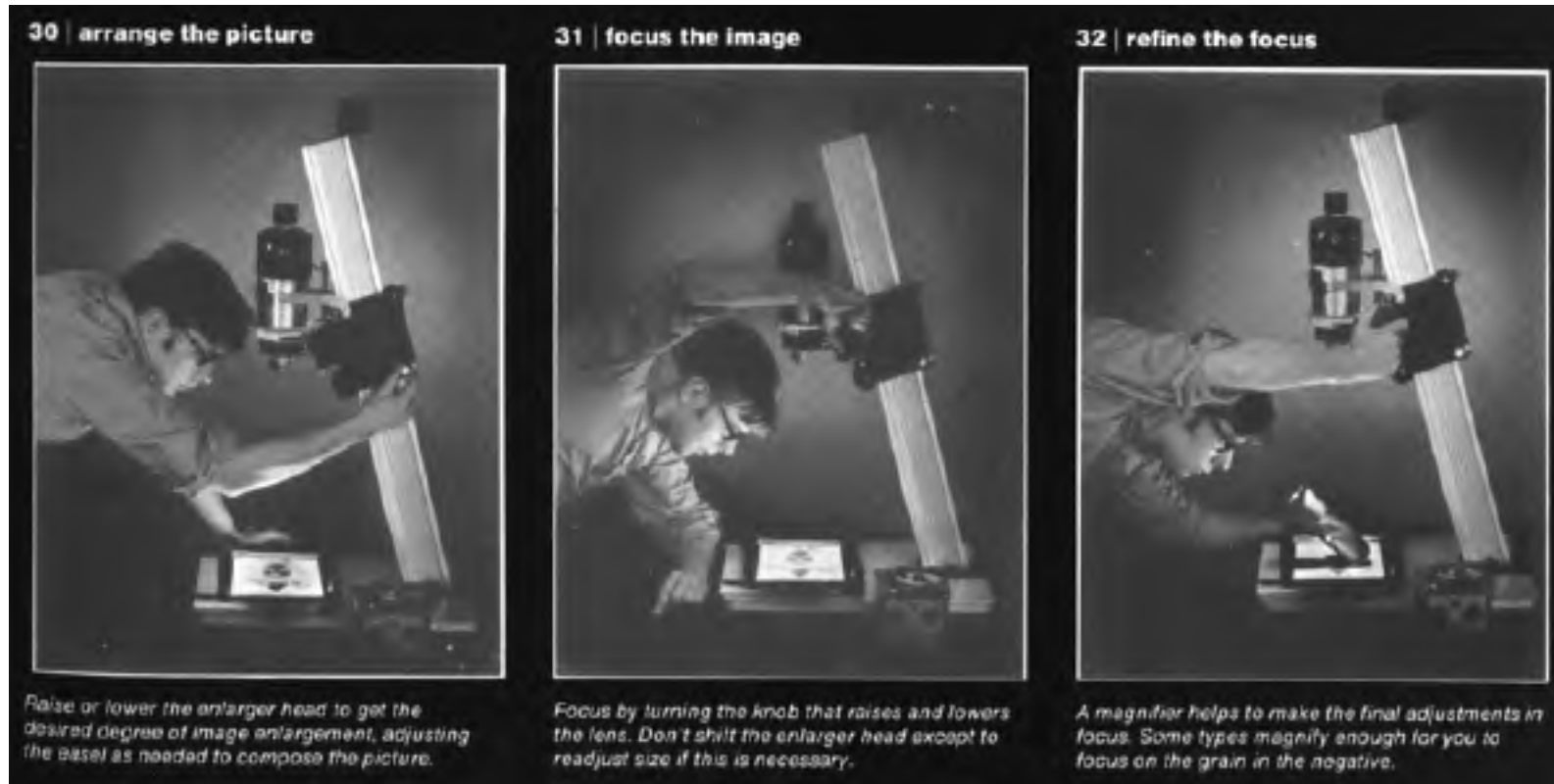


Open the f-stop to the largest aperture to supply the maximum light for focusing. Turn on the enlarger lamp

Insert a piece of white paper (previously exposed/used photo paper works best - ex your contact print - blank side) into the easel for focusing

Adjust the easle blades for the correct cropping of your image

## Steps 9 to 11



Raise/lower the enlarger head to get the desired degree of image enlargement

Use the focus knob and your “naked” eyes to roughly focus your image

Use the grain focuser to make final focus adjustments (will enable you to see the actual grains of silver halide on the negative and use them as a measure of focus)

## Steps 12 and 13

**33 | close down the aperture**

The best way to tell how long to expose an enlargement is to make a **test print**. This will look like a striped version of the final print (step 43, opposite). The strips are sections of the print, each strip exposed under the enlarger longer than its neighbor to the left. The test print is judged for density and contrast (pages 172–173). A full-sized sheet of printing paper is used here, but a smaller strip of paper placed across an important area is usually enough.

Time, rather than aperture setting, is generally changed when adjusting the exposure. If the negative is badly overexposed or underexposed, however, change the lens aperture to avoid impractically long or short exposure times. The method shown here exposes each strip 5 sec longer than its neighbor and produces strips exposed for a total of 5, 10, 15, 20, and 25 sec. Some photographers use a method that doubles the exposure for each strip and so produces a greater range of tones. For example, exposing the strips for 2½, 2½, 5, 10, and 20 sec gives total exposures of 2½, 5, 10, 20, and 40 sec.

Make the exposure with the lens stopped down a few stops from its widest aperture. This gives good lens performance plus enough depth of focus to minimize slight errors in focusing the projected image.



When focus is sharp, stop down the enlarger lens. Try f/8 or f/11 with a 50mm lens. A relatively small opening offsets slight focusing errors.

**34 | insert printing paper**



With room lights and enlarger lamp off, slip a piece of printing paper, emulsion side up, into the easel. Use a medium contrast (grade 2 or 3).

**Remember:  
Only  
Safelights  
are ON**

Close down to  
aperture to f 8 or f 11  
(smaller aperture  
offsets slight focusing  
errors)

Place a sheet of new,  
unexposed  
photographic paper in  
your easel

## Steps 14 to 16

35 | set the timer



Set the timer by turning its pointer to 5 sec. This test print will receive a series of 5 exposures of 5 sec each.

36 | first exposure



Cover four-fifths of the printing paper with a piece of cardboard. Expose the uncovered section for 5 sec.

37 | second exposure



Slide the cardboard to cover only three-fifths of the paper. Expose for another 5 sec.

Set the timer to 5 seconds (for your test print)

Cover  $\frac{4}{5}$  of the paper with a piece of opaque cardboard, expose the uncovered section for 5 seconds

Slide the cardboard to cover only  $\frac{3}{5}$  of the paper. Expose for another five seconds



## Steps 17 to 19

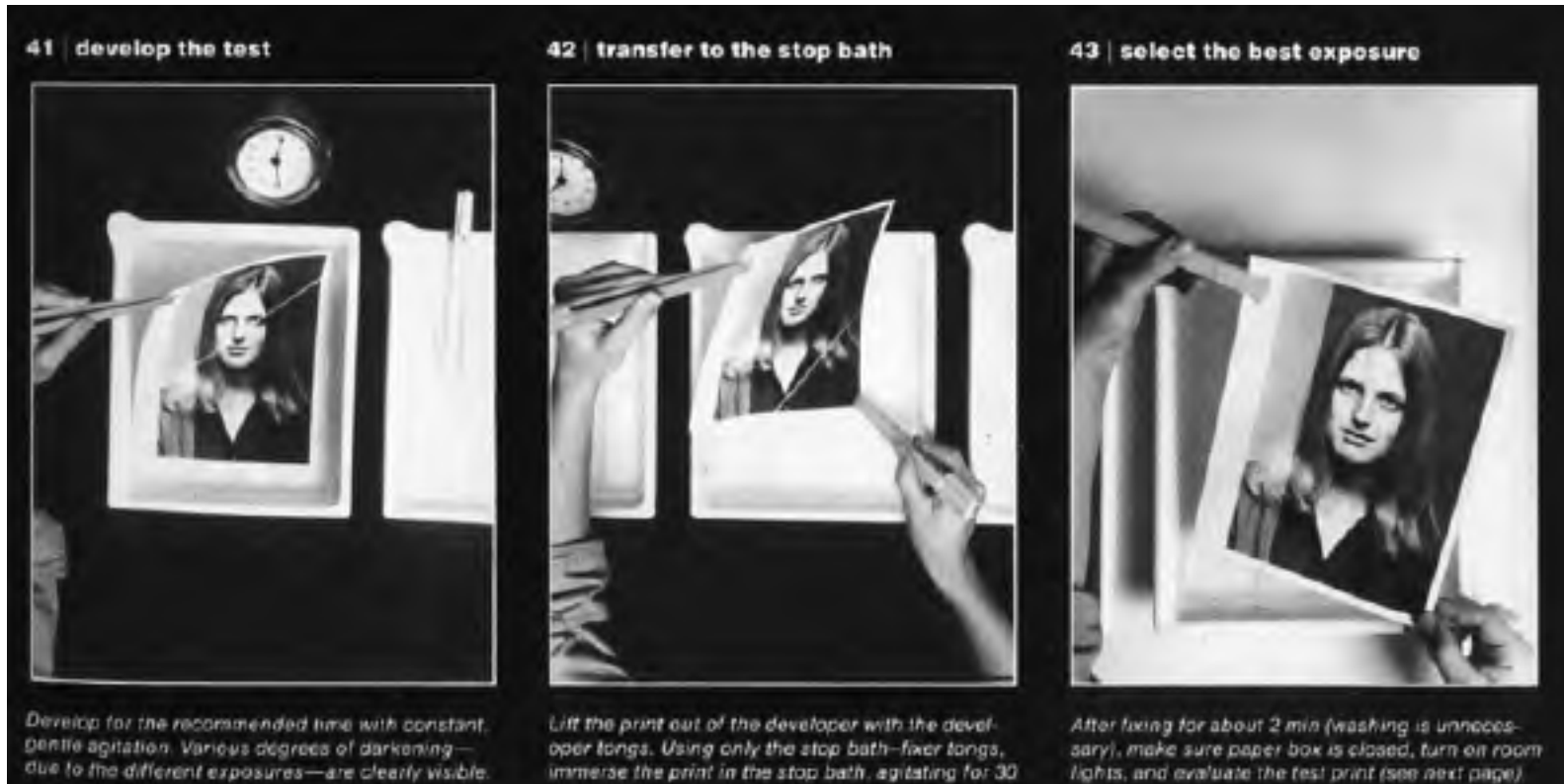


Repeat... now the first section has had 15s, the second 10s, the 3rd 5 s

Continue this process for 4/5 of the paper, then expose the entire sheet... so each section will have 5, 10, 15, 20, 25s of exposure

Remove the paper from the easel and process the paper in the chemistry on the wet side of the darkroom

## Steps 20 to 22



Develop for the recommended time with constant, gentle agitation

Transfer the paper to the stop bath and the fixer.... **USING ONLY THE TONGS ASSIGNED TO EACH CHEMICAL!!!**

After the image has been fixed for 2-3 minutes, it is safe to view it in regular light to choose the best exposure

## Example of a test print



An example of a test print that used 2 second intervals. Which exposure do you think is the best one for this image?

## Final steps (23-25)

23) Create your final print using the exposure time and aperture setting you chose from your test print

24) Process the print in the chemistry, carefully following the development, stop and fixing times while you gently agitate the photo using the correct tongs

25) Dry the print in the print dryer

Enjoy your print!!! (keep it away from direct sunlight to prevent fading)