A Quick Guide for Developing Film

revised 19Feb2014

Notes before starting...

Except for group demonstrations, all film developing should be done in the individual darkrooms in the hallway outside the large group darkroom.

In these rooms are GraLab timers which are set by moving the hands clockwise. There are also temperature control valves which are turned on and off with a main valve. Do not turn water off with this temperature control valve. The water needs to run for a few minutes before cooler water is available to the valve.

Wet things should be kept in the sink. Counters should remain dry. Rinse and dry everything when finished. If the Fine Arts 113 is unavailable to you, you may use the Art Center building.

At all times and in all places, WHEN IN DOUBT ABOUT HOW TO USE A PIECE OF EQUIPMENT, ASK AN INSTRUCTOR OR LAB AIDE BEFORE USING IT.

The Steps

1. Prepare

With Lights on:
Rewind the film in the camera.
Remove the film from the camera.

In total darkness:
Remove film from metal cassette.
Load the film onto spiral reel(s).
Place the reels in the tank.
Place the cover on the tank.

2. Develop

Remaining steps can now be done with lights on.

Find temperature of the developer. Determine development time from chart or film packaging. Set GraLab timer accordingly.

Add prepared developer to the tank, replace small cap on tank and start the timer. Agitate gently for the first 30 seconds. After the first 30 seconds gently tap the bottom of the can against the sink bottom to dislodge any air bubbles from your film and then rest can in sink. Agitate for 5 seconds every 30 seconds thereafter.

3. Rinse

Remove small cap and pour developer down the drain. This takes about 10 seconds and should be counted as part of the development time. Rinse with water for 30 seconds by filling and draing tank 3 times.

4. Fix

Fill can with fixer and replace small cap. Fix for **8 minutes** agitating every 30 seconds.

Pour fixer back into bottle. Rinse by filling and empying the can a few times.

You may now safely remove the large cap from the can. If your film is not "clear" i.e. still has some "milkyness" to it return the fixer to the lab aid and ask for some fresh fixer which you can use to re-fix your film.

5. Wash

Wash the film in the film washer for **20 minutes**.

Quickly give the film a final rinse in the photo-flo to prevent water spots. (photo-flo is in the black retangular tanks)

6. Dry

Squeegee... you can squeegee your film with your fingers or with a dust free photo squeegee. The squeegee must be absolutly clean or it will scratch your film. Rinse squeegee well, dip in photo-flo, and rid of excess moisture before using.

It will be tempting to spend some time looking at your negatives at this point, Don't. The sooner you get them into the dryer, the cleaner they will be. Dirty negatives are very difficult to print later.

Hang your film in one of the drying cabinets in the hallway. Use a clothspin or an empty film can at the bottom as a weight. Be sure to turn the fan off before opening the cabinet door.

Film should be dry to the touch in about **20 - 30 minutes** depending on how often the cabinet door gets opened. Be sure that the dryer fan and temperature dial (75% or so...) are set correctly.

7. Cut and sleeve

Immediately cut film into strips and place in negative preservers. Do not cut any strip less than 3 frames e.g. 2 strips of 3 frames instead of a strip of 5 and one left over. Use care not to scratch you negatives. They can be printed as soon as they are dry. **Negatives are extremley fragile. Handle them with extreme care.**

Have your instructor check your first few rolls of negatives. It is a good idea to have your negatives checked on a regular basis throughout the semester.

See reverse for developing times

Time / Temperature Chart

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Kodak HC-110 Developer
Dilution B

		Temperature	Development Time
Fuji ACROS 100		64°	6.5 minutes
		66°	6.0 minutes
	ideal	**68°**	**5.5 minutes**
		70°	5.0 minutes

Suggested starting points for other films.
These are only suggestions and results may vary...

	Temperature:**68°**
Kodak T-MAX 100	6min
Kodak T-MAX 400	6min
Kodak TRI-X Pan	5.5min
Kodak PLUS-X Pan	5min
Ilford FP4	9min
Ilford HP5	5min
Fuji Neopan 400	5min

For more film / developer charts see www.digitaltruth.com