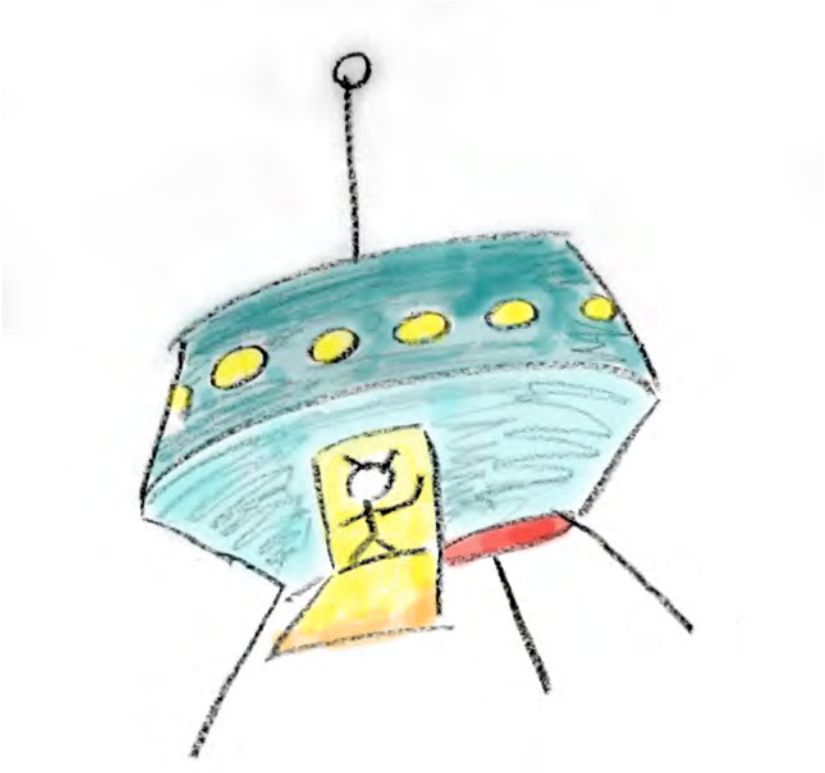
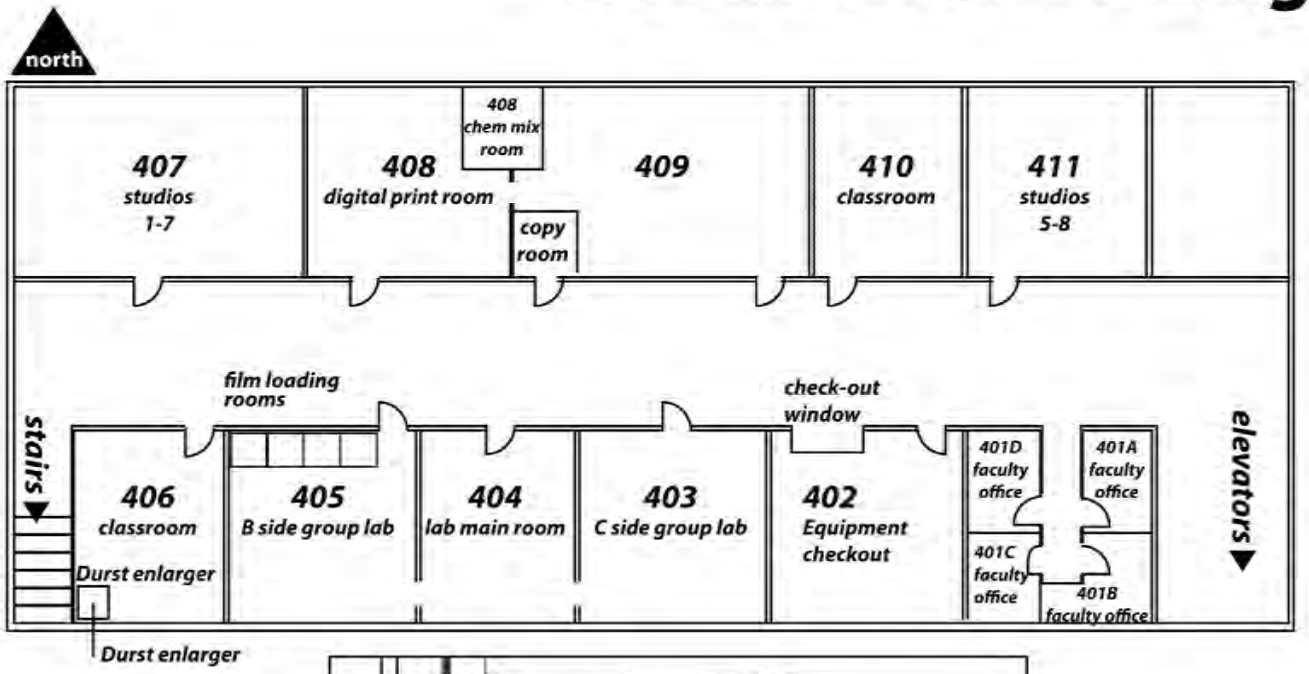
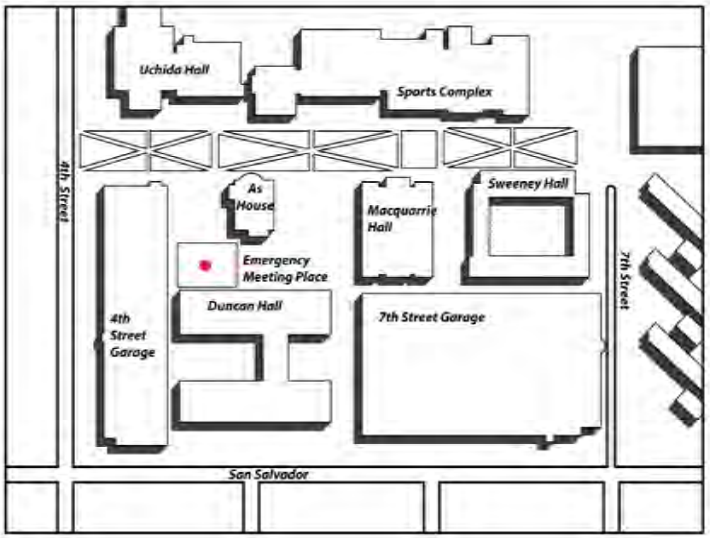
SJSU
Dept of Art & Art History
Photography

Lab Manual



Duncan Hall Photography Lab





Campus Map

Building Evacuation Procedures

Please obey the following procedures in the case of a building evacuation drill, or in the case of an actual earthquake, fire or other emergency requiring facility evacuation.

For Earthquakes:

Everyone is to take cover for the duration of earthquake under available shelter/protection. Doorways, underneath desks, tables, against support walls. No one should attempt to leave the building during the earthquake - falling debris being the main danger.

For Earthquakes and Fire:

Facility is to be evacuated. Fire alarms will sound following earthquake or during fire danger. For the Photography area, all students and faculty are to evacuate building by the west stairs ONLY. Elevators will shut down and will stay open at the nearest floor level. Available staff and faculty are to clear all classrooms, darkrooms, and studio areas to direct students to stairwells to evacuate building.

Faculty and Staff Responsibilities:

All students are to be directed to the stairwell next to DH 406 unless access is hazardous. In this event use the eastern stairwell. Avoid using stairwells located near the restrooms since the only access to the street will be from beneath the building. A and B SIDE Darkrooms and the computer lab will be checked by either the photo monitor staff or available faculty. All of these areas must be checked by flashlight in the event of a power failure. Currently, a flashlight is always plugged into the back wall of the equipment room. Emergency lights are also installed in the darkrooms. Each room is to be locked, if possible, once it is determined to be clear of people. In the case of a trapped person or person unable to be moved, a volunteer must remain with them and the door should be left open (This assumes the situation has stabilized to some extent). Keay Edwards, Lab technician, and photo instructors, are evacuation coordinators.

The Photo Department's assembly area is the faculty/staff parking lot next to the 4th Street Garage.

Duncan Hall Photo Laboratory & Studio

Lab & Studio Use:

The lab (DH 403, DH 404 & DH 405) and studios (DH 407, DH 409, & DH 411) are available for use by students who are currently enrolled in **a photography class (PHOT)** and have a current **Student ID**.

Hours:

Monday - Thursday Check postings at the lab window for the most up to date information.
Friday **To Be Announced** (Check the board across from the check-out window for updated information.)
Saturday & Sunday **Closed**

End of Semester:

The lab closes for the semester on the last day of scheduled classes. If you are using a locker it should be cleaned out by the last day of scheduled classes.

Check-out Window

Here you will be able to check-out tripods, equipment for the darkroom, lighting equipment for the studios and much more.

The window is staffed by volunteers and is always looking for help. As a volunteer you will be gaining experience that will qualify you for work as a photo assistant and University credit in performing the following duties:

- Equipment Checkout
- Assisting Faculty, Staff and Students
- Supervising Lab & Studio Operations
- Light Equipment Maintenance and service
- Lab Monitors should already be familiar with basic photography techniques (B&W and some Studio knowledge)

For their service, volunteers get the opportunity to recieve:

- 24 hour lab access
- Advanced and Extended Equipment privileges
- Material perks
- University Course credit (ART 178 - 3 hours per week = 1 unit, up to 6 hours per week)

If you are interested in becoming a volunteer, come by the photography lab in Duncan Hall, **Room 402** Monday-Thursday between 8:00AM & 4:00PM and ask for information (Photo **Facility Coordinator, Kathleen McDonald**) at the check out window or call **(408) 924-4623**.

Equipment

The lab has available various photographic equipment for currently enrolled photography students. Depending on class level, students are allowed to borrow equipment for off-campus school related photographic activities. When you check-out equipment, it is loaned to you under the following terms:

1. Equipment checked-out must be used for class related assignments only. Use of SJSU Photography equipment for individual money-making or commercial photography purposes is illegal and strictly prohibited. Violations will result in denial of lab and equipment privileges and possible disciplinary action by the Art & Design department.

2. While in possesion of SJSU Photography equipment for off-campus use the student will assume full responsibility for the safety and condition of the equipment. Damage or theft of SJSU photography equipment while in the student's trust are to be compensated by the student. Cost of repair or replacement of said equipment is to be determined by the acting Lab Manager. Failure by the student to resolve compensation for equipment damage or replacement will result in withholding of final grades.

3. Equipment checked out will be returned on time. Late equipment returns will result in fines levied until equipment is returned, and possible withholding of grades. Recurring late returns of equipment may result in a temporary suspension or total loss of equipment check-out privileges for the semester.

Basic equipment available for off-campus check out:

- Tripods
- Vivitar 35mm SLRs
- Canon Rebel DSLRs

For more information and a list of more advanced equipment available to check out, visit the Check-out Window.

If Processing film:

There are processing tanks for 35mm and 120 available for checkout. 4x5 dunk tanks are located in DH 404. You will not need to sign up for a room instead use the **film loading rooms** located on the far right wall of **B side**.

If Printing:

First locate an available enlarger inside either **B side** or **C side** and then bring your student ID to the check-out window. Tell the window monitor which enlarger you have selected and you will be given a key to access the equipment located in the drawers. Your student ID will be kept until check out.

Please note how the drawer/lock system fits. Check the drawers for the following equipment: a **35mm negative carrier**, a **Saunders 11x14 enlarging easel** & a **50mm enlarging lens**.

Equipment for different formats (120, 4x5, etc.) and paper sizes are available from the equipment window and may be requested when signing-in. **Return your key to the checkout window immediately after unlocking the drawers**.

If using a Studio:

Locate an available studio, bring your student ID card to the checkout window. Your ID will be kept until check out. Extra equipment may be requested when checking in. Return equipment to proper place when finished.

> If there are any problems with your equipment or something is missing - **PLEASE REPORT THIS IMMEDIATELY** to the window monitor, otherwise you may be held responsible for any damaged or lost items.

Checking Out:

Lock up all the equipment, and please throw all scraps, tape, & garbage away. Notify the window monitor that you are leaving and pick up your ID card.

Digital Print Room:

The computers in the Digital Print room are to be used for **printing only**. If you need to print for a class, this needs to be set up with your teacher.

SJSU Art Department Photography Facility Safety Rules

These rules apply to all persons using the photography facility. Please read through all sections care fully; you will be required to pass a safety exam before you are allowed to use the lab facility. These rules were written with your safety in mind. Being safe is simply using good common sense - it will make working easier for you and your fellow students.

> Intentional misuse, experimentation, and abuse of photo chemicals or processes is **absolutely forbidden.**

Improper use of any chemical or photo process could result in the release of a toxic substance. For example, something as innocuous as mixing a B&W stop bath solution with a potassium ferricyanide bleach will result in the release of cyanide gas! If you do not know what you're doing, **ASK FOR HELP**. Don't be embarrassed or afraid to ask any questions. Being ignorant is no excuse to endanger your self or others.

Eye Protection

OSHA approved eye equipment shall be worn at all prescribed times in the photography lab (these times will be specified by your instructor or lab technician). Regular eyeglasses cannot be sub- stituted for approved eye equipment. Contact lenses should never be worn in the photo lab when working with a hazard of corrosive chemicals (fixer, acid stop bath). If an irritant should get in your eye, wash the eye for 15-20 minutes in the eye wash station; then see a physician. Permanent eye damage can occur in **less than 15 seconds** from chemical contact with the eye.

Ingestion Hazards

No eating, drinking or use of cosmetics in areas where photo chemicals are in use. Never use photo chemical containers for food or drink. Smoking in the photography facility is absolutely prohibited. Never taste, or deliberately inhale any chemical.

Contact Hazards

When obtaining chemistry for film or paper processing, put concentrates in separate chemical beakers. Carry beakers in a tray to your work area. Mix your working solutions with water in your dark room (or work area). It is easier to carry small amounts of chemical concentrate than to move large amounts of working solution (spills being the result). When carrying wet or fixer laden prints, use a tray for transport. Do not carry a wet print with out a tray under it. You will drip a trail of chemistry or water through the lab.If chemicals are spilled on the skin, rinse with copious amounts of water. Gloves should be worn, or TONGS used, if you have sensitive skin. **Disposable gloves are available at the checkout window**. We recommend that you buy NIOSH approved gloves for photo chemicals. Gloves are required for chemical toning of prints. Clothing should be appropriate to photo lab wet areas. There should be minimum skin exposure. (Shorts, thongs, swimsuits & sun tops leave large amounts of skin unprotected. They are inappropriate in the lab.). Loose, long clothing should be con fined. The use of a chemical apron or smock is highly recommended. **Absolutely NO BARE FEET allowed in the lab** - shoes must be worn at all times. Shoes are safety equipment - they should completely cover your feet. Sandals and /or birkenstock type footware are inadequate protection against photo chemicals.

Inhalation Hazards

Photo processes which generate noxious vapors (fumes) should be performed in the Chemical Mixing Room (DH 408A) under the fume hood. Examples of these processes include the use of photographic toners and bleaches. **Mixing chemicals in powder form** must be performed in the Chemical Mixing Room and **particle filter masks** are required. Disposable filter masks are available at the Check-out Window.

Waste & Clean-Up

When processing film or prints, prepare and use only the minimum amount of chemistry needed. When finished processing film or printing, dispose of your test strips, extra prints, and garbage in the trash can. Do not leave your unwanted prints in the fixer or print washers. Any prints left in the fixer or print washers are thrown away at the end of the night. Dump your developer and stop bath solutions when you are finished or when they are exhausted. Rinse all trays, containers, and beakers when you are finished using them.

Handling and Using Fixer

Used fixer contains silver, which is a heavy metal and considered to be an environmental toxin; It is illegal to dump any used fixer solutions down the drain!! Pour your used fixer back in the provided labeled containers for re-use and recycling. If you are in doubt about the "freshness" of a fixer solution, have the Monitor or Lab Technician check it. If you are found intentionally dumping fixer, you will be fined and have your lab privileges revoked. Clean up minor chemical spills with paper towels and water. In the event of a major chemical spill, immediately notify any staff or faculty for clean up.

Do not dump any fixer solutions down the drain.

Accidents

In case of fire or accident, call the Lab Technician, Window Monitor, or Instructor at once. You must go to the Health Service for treatment of cuts, burns, inhalation of fumes. Transportation will be provided if necessary.

General Safety Rules:

- Know the location of, and how to use, safety equipment such as, fire extinguisher, fire blanket, and eye wash showers.
- Know the **safety rules** and **procedures** that apply to the photo process you are using.
- Know the types of protective clothing/eye gear available and required for each photo process.
- Lacquer based sprays such as **spraymount**, **adhesives**, **gloss or matt finish sprays** are forbidden in Ducan Hall.
- All **toners**, including sepia, are not to be used in Duncan Hall.
- Be certain that all chemicals are correctly and clearly labeled. If a container is unlabeled or a label is damaged, please report this to the staff on duty.
- **Use equipment only for its designated purpose**. Do not modify or attempt to repair any piece of equipment. Inform the staff of any problems or malfunctions.

For More Information:

It is your legal right to know the hazards of the work place. Located in the checkout window area is an information binder containing Material Safety Data Sheets (MSDS) on all chemicals used in the Photo Lab. In keeping with Cal OSHA (Occupational Safety & Health Administration) standards, the SJSU Art Photography Area maintains this information and makes it available upon request.

A Word To Expectant Mothers:

Studies conducted have shown some conclusive evidence that working properly with photo chemicals may be harmful during pregnancy. We recommend that women avoid direct exposure to photochemistry during pregnancy. We urge women who are pregnant to use discretion when working in the lab: avoid direct chemical contact by using gloves or tongs and work in areas with proper ventilation.

Film Processing

0	LOAD FILM		In total darkness, place loaded reel tank and secure lid.
1	PRE-SOAK	1 minute	Fill tank with water and flush 3 or 4 times
2	DEVELOPER 1:1	Times vary based on film,	Mix Developer, set timer, pour into tank quickly, tap tank twice (to release air bubbles), and finally start timer. Agitate continuously for the first 30 sec., then 5 sec. every 30 sec. thereafter.
3	STOP BATH	30 seconds	Fill with water, agitate for 30 sec., then pour down the sink, 2 times.
4	FIXER	4 to 8 minutes	Use straight out container without dilution. Agitation same as developer. True fixing time is twice the time it takes to clear the white haze from film.
5	WASH BATH	1 minute	You may now remove the tank lid and wash the film for 1 minute under running water.
6	HYPO CLEAR 1:7	2 minutes	Agitate continuously for 2 minutes.
7	FINAL WASH	10 minutes	Remove tank lid and wash for 10 mins.
8	PHOTO FLO	30 Seconds	Fill container with Photo Flo solution: 2 to 3 drops of Photo Flo to 1 quart or liter of water) and agitate very slowly for 30 seconds.
9	DRYING	20 to 30 minutes	Carefully hang film in dryer. This is a very critical time for film because the emulsion is soft and easily scratched or embedded with dust. Be Careful!

Kodak	ISO (E.I.)	Dilution	65°	68°	70°	72°	75°
T-Max 100 (TMX)	100	1:1	11	**9½**	8½	7½	6¼
T-Max 400 (TMY)	400	1:1	14½	**12½**	11	10	9
Tri-X ♦	200	1:1	—	**8½**	—	—	—
Tri-X	400	1:1	10¾	**9¾**	9	8½	7¾
Tri-X Pro (TXP)	320	1:1	14¼	**12¾**	11¾	10¾	9½
Plus-X	125	1:1	10	**8½**	7¾	7¼	6
T-Max 3200 Δ♦	1600	stock	—	**12½**	11½	10½	9
T-Max 3200 Δ	3200	stock	—	**14**	13	11½	10½
Ilford	ISO (E.I.)	Dilution	65°	68°	70°	72°	75°
Pan F+	50	1:1	9¾	**8½**	7½	7	6
SFX 200	200	1:1	17	**14½**	13	12	10¼
Delta 100	100	1:1	14½	**12**	11	9¾	8¾
Delta 400 ♦	200	1:1	12	**10**	9	8½	7
Delta 400	400	1:1	16¾	**14**	12½	11½	9½
Delta 400 ♦	800	1:1	20¼	**17½**	16	14¼	12¾
FP4+	125	1:1	13	**11**	9¾	9	7½
HP5+	400	1:1	13	**11**	9¾	9	7½
Delta 3200 Δ♦	1600	stock	11	**9½**	8½	7¾	6½
Delta 3200 Δ	3200	stock	13	**10½**	9½	8¾	8
Fujifilm	ISO (E.I.)	Dilution	65°	68°	70°	72°	75°
Neopan Acros	100	1:1	13½	**10½**	9¾	8¾	7½
Neopan 400	400	1:1	10½	**9½**	9	8½	7
Neopan 400 ♦	800	1:1	14½	**13**	12	11	9½
Neopan 1600	1600	1:1	10½	**9**	8¼	7½	6

Archival Paper Processing for Fiber Paper

	Developer	Stop Bath	Paper Fixer	Paper Fixer	Holding Bath	Hypo Clear	Final Wash
Mix:	1:5	—	—	—	Water in Tray or Use Holding Baths	—	Use Print Washers
Develop:	2 mins	30 secs	2 mins	2 mins	10 mins to 2 hours	5 to 10 mins	20 mins

Stop Bath, Paper Fixers and Hypo Clear are already **pre-mixed in trays by the window monitors**.
Constantly agitate the print when developing, using the Stop Bath, fixing and hypo clearing.
Developer and Hypo Clear can be disposed of down the drain.

Very important tips for finishing your prints:

- Remove wet print from print washer, and place face down on clean white plexiglass board.
- Carefully squeege back of print to remove most of the water and speed drying time.
- Place print face up and wipe entire surface with damp clean sponge.
- Dry on drying screens or take home in blotter book (remove prints at home & hang dry).

Developer – *2 minutes*

After exposing the paper, slip it quickly and completely into the developer. Generally, development time is 2 minutes. Agitate gently and constantly with tongs or by rocking the tray. If two or more prints at a time are processed, rotate individual prints from the bottom to top of the stack in the tray. Do not cut short the development time to salvage a print that darkens too rapidly; uneven development and mottling will result. If the print is too dark, make another with less exposure. If the print is too light, make another with more exposure. Evaluate contrast at this time too.

Stop Bath – *30 seconds*

Drain developer from print for a few seconds before putting print into stop bath. Agitate prints in stop bath for 30 seconds. Agitation during the stop bath is important.

Fixer – *4 minutes*

Fix for 2 minutes in first fixer tray and 2 minutes in second fixer tray. Agitate during first minute and several times during the remaining time. The print can be examined in light after the first minute. If several prints are in the fixer at one time, agitate more often and rotate individual prints from bottom to top of the stack. If you think the fixer has become exhausted during a printing session, notify the window monitor to mix a fresh batch, then refix all prints in fresh fixer.

Holding Bath – *10 minutes to 2 hours*

Remove prints promptly from fixer at the end of the fixing time or they will take longer to wash and may bleach or stain. After fixing, place prints in the large tray filled with slowly running water or make your own tray filled with distilled water. Prints hangout in here until you are ready to move on to the next step, Hypo Clear.

Hypo Clearing Agent – *5 to 10 minutes*

Move your prints in a tray to the Hypo Clear tray usually located under the Lab's white squeegee board. Agitate prints in the Hypo Clearing Agent for 5 to 10 minutes. Prints treated with a hypo clearing agent will be washed cleaner of residual chemicals than untreated prints and in much less time.

Washing – *20 minutes minimum*

Remove your prints from the Hypo Clearing Agent and give them a quick rinse in a tray of water to avoid bringing lots of Hypo Clear into the clean water of the print washer. If several prints are washed together, they must be separated or circulated so that fresh water constantly reaches all surfaces. If you wash prints in a tray, it must be done by filling the tray with water, circulating the prints, and changing the water a minimum of 15 times.

Drying – *2 to 3 hours*

Place washed prints face down on the Lab's clean white plexiglass board. Squeegee back of print to remove excess water and speed drying time. Turn print face up and **thoroughly wipe surface of print with a clean damp sponge** — this is very important to remove white milky fingerprints and blotches that appear after the print is dry. Fiber base paper can be air dried on school drying racks, or carried home in a blotter book or blotter roll. Once home, remove from blotter pages and hang to dry from clothespins or on your own drying screens.

Flattening

After completely drying fiber prints, you may notice they have curled. To flatten, place prints between two pieces of clean paper or two-ply matt board in the dry mount press at 150°F to 200°F for 1 min.

Archival Paper Processing for Resin Coated Paper

	Developer	Stop Bath	Paper Fixer	Paper Fixer	Holding Bath	Final Wash
Mix:	1:5	—	—	—	Water in Tray or Use Holding Baths	Use Print Washers
Develop:	1½ mins	30 secs	2½ mins	2½ mins	10 mins to 2 hours	10 mins

Stop Bath, Paper Fixers and Hypo Clear are already **pre-mixed in trays by the window monitors**.
Constantly agitate the print when developing, using the Stop Bath, fixing and hypo clearing.
Developer and Hypo Clear can be disposed of down the drain.

Very important tips for finishing your prints:

- Remove wet print from print washer, and place face down on clean white plexiglass board.
- Carefully squeege back of print to remove most of the water and speed drying time.
- Place print face up and wipe entire surface with damp clean sponge.
- Dry on drying screens or take home in blotter book (remove prints at home & hang dry).

Developer – *1½ minutes*

After exposing the paper, slip it quickly and completely into the developer. Generally, development time is 2 minutes. Agitate gently and constantly with tongs or by rocking the tray. If two or more prints at a time are processed, rotate individual prints from the bottom to top of the stack in the tray. Do not cut short the development time to salvage a print that darkens too rapidly; uneven development and mottling will result. If the print is too dark, make another with less exposure. If the print is too light, make another with more exposure. Evaluate contrast at this time too.

Stop Bath – *30 seconds*

Drain developer from print for a few seconds before putting print into stop bath. Agitate prints in stop bath for 30 seconds. Agitation during the stop bath is important.

Fixer – *5 minutes*

Fix for 2 minutes in first fixer tray and 2 minutes in second fixer tray. Agitate during first minute and several times during the remaining time. The print can be examined in light after the first minute. If several prints are in the fixer at one time, agitate more often and rotate individual prints from bottom to top of the stack. If you think the fixer has become exhausted during a printing session, notify the window monitor to mix a fresh batch, then refix all prints in fresh fixer.

Holding Bath – *10 minutes to 2 hours*

Remove prints promptly from fixer at the end of the fixing time or they will take longer to wash and may bleach or stain. After fixing, place prints in the large tray filled with slowly running water or make your own tray filled with distilled water. Prints hangout in here until you are ready to move on to the next step, Hypo Clear.

Washing – *10 minutes minimum*

Using a tray bring the prints into the main lab room and place them in a open print washer. If several prints are washed together, they must be separated or circulated so that fresh water constantly reaches all surfaces. If you wash prints in a tray, it must be done by filling the tray with water, circulating the prints, and changing the water a minimum of 15 times.

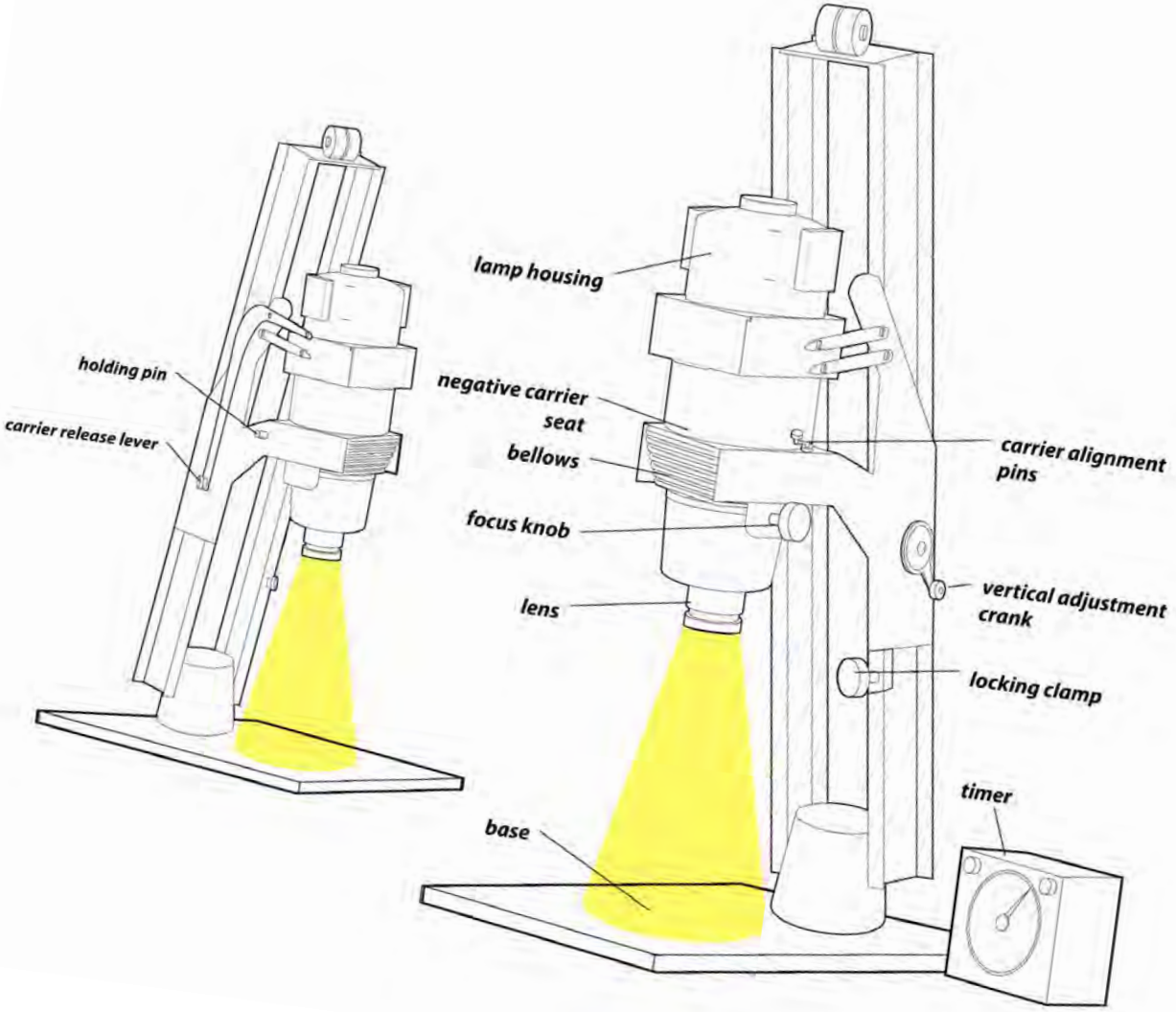
Drying – *2 to 3 hours*

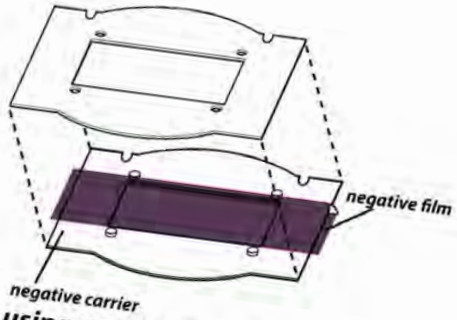
Place washed prints face down on the Lab's clean white plexiglass board. Squeegee back of print to remove excess water and speed drying time. Turn print face up and **thoroughly wipe surface of print with a clean damp sponge** — this is very important to remove white milky fingerprints and blotches that appear after the print is dry. Fiber base paper can be air dried on school drying racks, or carried home in a blotter book or blotter roll. Once home, remove from blotter pages and hang to dry from clothespins or on your own drying screens.

Flattening

After completely drying fiber prints, you may notice they have curled. To flatten, place prints between two pieces of clean paper or two-ply matt board in the dry mount press at 150°F to 200°F for 1 min.

B-Side Enlargers & Negative Carriers





using negative carriers:

1. carrier halves. Top half of carrier is smooth--bottom half should have protruding bracket on under side.

2. Position negative on top of lower carrier half between pins. the edges of the negative should overlap the edges of the opening on all four sides.

3. Negative should be right reading viewed from the top, not reversed. Emulsion side will be down.